FACULDADE DE CIÊNCIAS SOCIAIS E HUMANAS
UNIVERSIDADE NOVA DE LISBOA

THE INTERACTION BETWEEN SCIENTIFIC TRANSLATION AND ENGLISH AS A LINGUA FRANCA, AND THE ROLE OF NON-NATIVE-ENGLISH-SPEAKING TRANSLATORS

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Trabalho de Projecto de Mestrado em Tradução
Especialização em Inglês

Abril de 2016

Trabalho de Projecto apresentado para cumprimento dos requisitos necessários à obtenção do grau de Mestre em Tradução, Especialização em Inglês, realizado sob a orientação científica da Professora Doutora Karen Bennett.

To my family, to my friends, to Nannarella. Grazie!

ACKNOWLEDGEMENTS

I would like to thank my adviser, Professor Karen Bennett, for her patience, support, kindness and suggestions throughout the whole development of this project.

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INTERAÇÃO ENTRE TRADUÇÃO CIENTÍFICA E INGLÊS COMO LINGUA FRANCA E O PAPEL DE TRADUTORES NÃO-NATIVOS DO INGLÊS

Silvia Zannini

ABSTRACT

KEYWORDS: scientific translation, English as a Lingua Franca, non-native English speakers.

This project aims to focus on the identification of the interaction between scientific translation and English as a Lingua Franca (ELF), and on the role of non-native English translators in this area. The project is divided into two main sections, a practical part, consisting of the translation of texts related to the field of science, and a commentary dedicated to the analysis and contextualisation of the translations and a theoretical reflection on some of the issues arising from them. All the texts translated belong to the area of medicine, but present different characteristics, depending on their textual genre. The translation was undertaken in accordance with functionalist theories and is mainly focused on the target text, its context and purposes. Emphasis is placed on the analysis of the phenomenon of English as a Lingua Franca in the academic and translation context, with the aim of defining the peculiarities and innovations it has introduced to the international community, and support the claim that nowadays non-native English speakers (NNES) can be fully proficient translators and take part in the technical and scientific translation market.

RESUMO

PALAVRAS-CHAVE: tradução científica, English as a Lingua Franca, tradutores não nativos de Inglês.

O presente Trabalho de Projecto pretende focar-se na interação entre a tradução científica e o inglês como língua franca (English as a Lingua Franca ou ELF), e no papel dos tradutores não nativos neste âmbito. O Trabalho encontra-se dividido em duas secções principais, uma secção prática de tradução de textos relacionados à área científica, e um comentário teórico de análise e contextualização. Todos os textos traduzidos pertencem à area de medicina, mas apresentam caraterísticas diferentes dependendo do genro textual deles. A análise é baseada nas teorias funcionalistas e maioritariamente focada no texto de chegada, no seu contexto e nos seus objectivos. Dedica-se uma atenção especial à análise do fenomeno do Inglês como Lingua Franca no contexto académico e tradutório, com o objectivo de definir as peculiaridades e as inovações por ele introduzidas na comunidade internacional, e de apoiar a alegação de que os tradutores não nativos de Inglês têm hoje em dia as qualidades necessárias para fazer parte do mercado de tradução técnica e científica.

LIST OF ABBREVIATIONS

AmE – American English

BE – British English

EAD – English Academic Discourse

ELF – English as a Lingua Franca

NNS – Non-native Speaker

NNES – Non-native English Speaker

ST – Source Text

TT – Target Text

CONTENTS

INTRODUCTION

The market for scientific translation into English is flourishing and represents one of the more dynamic fields connected to translation, because of the constantly growing amount of material produced by researchers and scientific professionals. It thus offers work opportunities for translators, due to the necessity to translate into English all contents locally written for a proper divulgation in the international scientific community, which – like most other fields - uses English as a means of communication between cultures. English as a Lingua Franca (ELF) is today the vehicle of scientific information worldwide, enabling the dissemination of important research outcomes and the interaction between researchers and professionals from different countries.

That is why this area of study is perfectly suitable to a project - the option here chosen for the final semester of the Master in Translation of the Faculty of Human and Social Sciences of Nova University. In fact, this modality allows a specific practical example (the translations below introduced and analysed) to bring up important issues related to the correlation between scientific texts and translation, and the role of non-native translators in the scientific and technical market.

This project therefore aims to analyse these issues both from a practical and theorical point of view. The first part, in fact, involves the translation from Portuguese to English of two groups of texts, related to different contexts (and therefore with different implications), but all belonging to the field of medical science. The corresponding source texts can be found attached in the Annexes section. The second part consists of a commentary on the translation process, followed by an analysis of the relationship between science and translation, and a discussion of the place occupied by translators that are non-native English-speakers (NNES) in the current market. The approach used in the translations was mostly functionalist, with reference to the theories of Vermeer (2004) and Nord (1997, 2006) in particular. That is to say, the translations were undertaken in the light of the purpose (or *Skopos*) of the text and the target reader and context. This approach, used for all texts, produced very different results, depending on the genre, and, as above explained, purpose.

The first part of the project, dedicated to the actual translations, is divided into two sections: the first consists of the English translations of four texts to be included in the websites of two Orthopaedics clinics located in Coimbra, *Spine Centre* and *Urgicentro*. They are scientific texts, but strongly related to health business and marketing, as their target audience is the general public and their aim is to attract foreign clients to the clinics. That is to say, they are from the area of health tourism, in which English is adopted as an international means of communication between potential customers from foreign countries and local business providers. Thus, the register is fairly informal, characterised by a mild technicality, because of their need to balance scientific content with communicative clarity and a customer-friendly manner.

The first two texts describe the clinics and their services, while the third consists of the Curriculum Vitae of the Orthopaedist (and co-founder) of the clinics, Doctor Luis Teixeira, who provided the material for this first section of translations, which will be displayed on the websites.The fourth text is made of a set of brochures[1] specifically related to four different medical conditions and the respective surgical procedures necessary to heal them.

The second section, in contrast, consists of a scientific article, "Risco de queda e posturografia computerisada em amputados" and its translation into English. It is an article of cutting-edge research, related like the texts of the first section to the area of Orthopaedics (from the point of view of Physiatry), but approached in a completely different way. The register is highly technical, as the article and its translation are addressed to a highly specialised audience of professionals and researchers of the area, and its contents are not meant to be accessible to the general public. Its purpose is not related to business but to the divulgation of research outcomes to the international scientific community. Thus, it presents a research process and its results in a professional, detached and concise style, typical of academic writing, focusing on the content to be transmitted more than on the means of communication itself.

It has to be stated that no translation memories or other CAT tools were used during the whole translation process, because of a lack of resources. However, the

[1] The use of the term 'brochure' suggests the idea of a printed text format, more than a web content. Nonetheless it was kept in the TT, as it is the only term used in the ST to refer to such content.

importance of these tools in the modern world of translation is recognized, as is the fact that every professional translator should nowadays have the skills required to benefit from their support in matters of quality, time-saving and professionalism.

The translation process adopted for these texts, together with their commentary, shows how nowadays the belief that a native speaker will always be a better professional than a non-native is a mere stereotype that has to be overcome. The characteristics of scientific discourse, particularly the expert discourse described in Chapter 2, mean that the translator's task has more to do with an objective "decodification" of the rules and structures than with a culturally-involved process. The scientific text aims to communicate exact information as concisely as possible, and, even if in some case it merges with other fields (such as marketing, as in the first section of texts presented), it still remains a rigidly defined area with few cultural implications. This means that the decision whether to use a source- or target-oriented strategy is relevant only for concrete matters (measures, presentation of figures, definitions of tests and examinations, etc.).

Therefore, this project argues that a professional NNES translator should be recognised as just as proficient and capable of competing in the market of scientific translation as a native-English-speaking (NES) professional, given that no skill or quality involved in the translation of scientific discourse implies the need for English as a mother tongue. This because, as already mentioned, the English adopted by the scientific community is not the standard British or American variety, but rather *English as a Lingua Franca (ELF)*, a vehicle for communication between professionals that are not themselves native speakers, and which is modified and constructed continuously through its use in the globalised world.

PART I:
THE TRANSLATIONS[2]

[2] The Source Texts are provided in Annex.

1. THE WEBSITES

1a. SPINE CENTRE

HOME

SPINE CENTRE appeared in response to the need for a spine surgery centre in the SANFIL Medicina group, and is distinguished by the quality of its equipment and the professional experience of its respected team.

At SPINE CENTRE, we take an innovative approach to the diagnosis and treatment of the spinal column, aiming to assimilate the most modern strategies, with special attention to minimally-invasive surgery techniques.

ABOUT US

Mission
Our mission at SPINE CENTRE is analysing and treating the various pathologies of the spinal column, keeping the focus of our attention on the client.

Vision

SPINE CENTRE and its experienced staff aim to be an internationally acknowledged clinic, providing the best and most innovative medical treatments for spine pathologies.

Objectives

Our ambition:

To distinguish ourselves thanks to constant technological progress;

To promote efficiency;

To meet all our patients' requirements.

OPERATING SUITE

Our operating suite comprises 3 operating theatres equipped with the most up-to-date technology: electrical radiolucent operating tables, fluoroscopy, a neuronavigation

system with intra-operative 3D imaging device (O-arm), state-of-the-art microscope, blood recuperator for autotransfusion (cell-saver), serum heating equipment. We also have a recovery unit for the monitoring of patients in the post-operative period.

HOSPITAL CARE

Each room is equipped with air conditioning and TV systems.
You can use the telephones placed in every room to communicate with your family or other people outside the clinic. Moreover, next to the head end of the bed, there is a bell that connects you to the nursing room.
Do not hesitate to ring it if you need anything and a nurse will come immediately to your room.
Regarding meals, you will be informed of the possible choices and our staff will try and satisfy your needs, according to your taste.

VISITS

Our SPINE CENTRE has modern facilities, located at Avenida Emídio Navarro, 17, 5th floor.

QUALITY POLICY
Our commitment to QUALITY at SPINE CENTRE implies:
Responding efficiently to clients' needs and expectations, achieving their full satisfaction;
Motivating all staff and coordinating efforts to ensure the success of our Quality System, as value added to our company and also as a form of personal achievement, encouraging a good working environment;
Guaranteeing appropriate infrastructures and equipment, suitable to the demands of the market, with the continuous improvement of the efficiency of the integrated system;
Promoting active cooperation with suppliers and subcontractors, who will be selected according to our quality criteria;
Optimizing costs (avoiding waste), profiting from available resources (through continuous process systematization), ensuring the economic and financial balance of the company along with its sustainable development;
Complying with the legislation, the applicable regulations and other subscribed requirements, thereby assuming our social responsibilities and accountability for our actions;
Committing all our team to the continuous improvement of our Quality System, through both the quality of the services we provide and the modernization of the processes.

In January 2015, we were the first surgery unit for the spinal column certified by ISO 9001 in Portugal, in the category of clinical care for the diagnosis and treatment of

pathologies of the spine. The certification was assigned by Bureau Veritas, a company with great experience in the certification of health centres. This certification means that we, at SPINE CENTRE, perform our clinical practice strictly and systematically, always aiming at constantimprovement and efficiency and making your satisfaction our main priority.

SURGERY

At SPINE CENTRE, we seek to keep up-to-date with the latest technology, as the first centre in Portugal with neuronavigation surgery and 3D intra-operative imaging control.

Surgery of herniated disc and nerve compression
Spine arthrodesis
Intervertebral disc arthroplasty
Dynamic fixation of the lumbar spine
Other surgical techniques
Neuronavigation surgery

TREATMENT

Because of the complexity and multidisciplinarity connected to the pathology of the spine, each patient of our centre will always be evaluated from a psychosomatic point of view and according to the needs of each case.

Procedures for pain of discal origin
Treatment for joint facet pain
Treatment for nerve root pain
Other procedures for chronic spinal pain

TESTS

At SPINE CENTRE, we provide the most advanced diagnostic and treatment procedures in partnership with Sanfil Medicina.

Laboratory analysis
Digital RX
Multislice CAT
Magnetic resonance
Osteodensitometry
Electromyography

PATHOLOGIES

Prevention is the first step!
Disc bulging
Spondylolisthesis
Vertebral Canal Stenosis
Herniated disc and disc degeneration
Scoliosis
Kyphosis
Osteoporotic fracture
Traumatic fracture
Tumorous lesion of the spinal column

APPOINTMENTS

Book your appointment now.
Your desired hour and date will need to be approved by SPINE CENTRE.

Name

E-mail

Telephone

Preferred date

Preferred hour

Your message

INFORMATION

If you have any doubt or question, please contact SPINE CENTRE.
We promise to answer all of your questions promptly.
T. 239098665 | Mobile 915 005 400 | geral@spinecentre.pt

CONTACT FORM

Your name (mandatory)

Your e-mail (mandatory)

Topic

Your message

Your opinion is important to us.

If you have any suggestion or request for clarification please contact SPINE CENTRE.
T. 239098665 | Mobile 915 005 400 | geral@spinecentre.pt

CONTACT FORM

Your name (mandatory)

Your e-mail (mandatory)

Topic

Your message

INTERNATIONAL PATIENTS

We have a specific department of SPINE CENTRE for international customer service. This department provides support for:

- scheduling of appointments, exams, preparation for hospitalization and surgery;
- contact with travel agencies for travel and accommodation;
- postoperative support in the collection, delivery or dispatch of reports and exam results.

CONTACT FORM

Your name (mandatory)

Your e-mail (mandatory)

Topic

Your message

TESTIMONIES

"Great team of doctors led by Dr. Louis Teixeira. Well done, congratulations!"
Jorge Neves

"Congratulations! Another important step for patients, for health, for Sanfil and for Portugal as well. Thank you. This is without any doubt the result of a great deal of work, personal investment and sacrifice. Congratulations to the team."
Sara Alegre

“I’ve already been treated at this centre, which I recommend, really well treated by Dr. Luis Teixeira, who I also strongly recommend. An excellent orthopaedist.”
Cristina Mendes

“Congratulations to the distinguished Dr. Luis Teixeira and his medical team for their wonderful work in the area of 3D spine surgery . A warm hug and all the best to the whole team.”
Prata Messias Tapada

“Dr. Luís Teixeira, and Dr. Tiago Lima, excellent professionals. Congratulations.”
Adelaide Veiga

“I don’t want 2013 to end without clearly expressing all my gratitude to Dr. Luís Teixeira. The competence, professionality, humanity and kindness with which I have been treated will NEVER be forgotten. I will keep a place in my motherly heart for you, ALWAYS.”
Luisa Maria Pereira

“I would like to take this opportunity to thank all the medical and auxiliary team for how they took care of me during my stay at Spine Centre. During the whole time of hospital stay I had the privilege to be looked after with great professionalism, kindness and care. I thank Dr. Luís Teixeira for the improvement I already feel just a week after my spine surgery. I also need to congratulate the kitchen staff, because the meals were really good. To all of you, my sincerest thanks for your kindness.”
Nelson Ruivo

“I thank Dr. Luís Teixeira and the whole Spine Centre team for making a possibility into reality. Many thanks from me and my whole family.”
João Duarte

SPINE ACADEMY

Introduction

Our Spine Academy has arisen from the Spine Centre’s investment in education and research. The cases we have had, the know-how we have acquired and the experience of our team allowed us to launch this education project to enable young orthopaedists and neurosurgeons to benefit from high-quality surgical training in our facilities.
We are in the process of developing partnerships with various national institutions with the aim of establishing a well organised program suitable for international certification.

Medical Committee

Dr. Bruno Rodrigues
Neurologist| Professor in the Faculty of Medicine of the University of Coimbra

Prof. Dr. Helena Teixeira
Professor in the Faculty of Medicine of the University of Coimbra

Prof. Dr. Joaquim Viana
Anaesthesiologist| Professor in the Faculty of Medicine of the University of Beira Interior

Prof. Dr. José Casanova
Orthopaedist| Professor in the Faculty of Medicine of the University of Coimbra

Prof. Dr. Luís Cunha
Neurologist | Professor in the Faculty of Medicine of the Universidade of Coimbra

Dr. Luís Teixeira
Orthopaedist

Dr. Margarida Oliveira
Rheumatologist| Professor in the University of Beira Interior

Dr. Pedro de Melo Freitas
Neuroradiologist

CONTACTS

ADDRESS

SPINE CENTRE – Spine surgery
Avenida Emídio Navarro, Nº 17 – 5º Left
3000-150 Coimbra
Portugal

CONTACTS
Telephone: (+351) 239 098 665 | 915 005 400
e-mail: geral@spinecentre.pt

HOW TO FIND US

1b. URGICENTRO

HOME

Because health can't wait!
Urgicentro came into being in 1988, offering a wide multidisciplinary range of health services designed to meet its clients' needs, through high-quality professional customer service.

URGENT MEDICAL TREATMENT
At Urgicentro, we have a whole team of skilled specialists in general medicine at your disposal every day from 8 a.m. to 8 p.m.

SPECIALTIES
Thanks to our experienced team, we have a wide range of specialties, all under the same roof.

OCCUPATIONAL HEALTHCARE
We offer a service that provide accessible health monitoring for your employees.

SERVICES
WE'RE HERE TO HELP YOU
At Urgicentro you'll find all the services you are looking for.
If you are an entrepreneur, we'll be by your side to ensure that your personnel enjoy the best possible quality of life. And if you are a self-employed worker, we are equally committed, aiming to meet all your requirements.

URGENT MEDICAL TREATMENT
Urgicentro has a daily service for emergency healthcare, from 8 a.m. to 8 p.m., in partnership with Santa Filomena Health Centre where patients have access to a high-quality customer service, with really short attendance time.
- On-call doctors from various specialties continually available.
- Diagnostic exams made to order (X-rays, magnetic resonance, CAT, ultrasound , blood and urine tests, among others)
- Hospitalisation (private rooms) and operating suite

SPECIALTIES

Cardiology
Dr. João Cristóvão

General surgery
Dr. Henrique Ferrão

Plastic surgery

Dr. Fernanda Sanches

Vascular Surgery
Dr. Ricardo Vale Pereira

General Medicine
Prof. Dr. Frederico Teixeira
Dr. Ana Coelho
Dr. Fernanda Costa
Dr. Fernanda Leite
Dr. Francisco Araújo
Dr. João Crisóstomo Borges
Dr. Vitor Costa

Dermatology
Dr. Álvaro Machado

Gastroenterology
Dr. Hermano Gouveia
Dr. Ernestina Camacho
Dr. Rui Gradiz
Dr. Zita Romão

Gynaecology/ Obstetrics
Dr. Clara Coelho
Dr. Sofia Franco

Occupational Healthcare
Dr. João Crisóstomo Borges
Dr. João Viegas
Dr. Vitor Costa

Neurology
Dr. Ana Sofia Morgadinho

Ophthalmology
Dr. Helena Azevedo

Orthopaedics
Dr. Amilcar Valverde
Dr. António Figueiredo
Dr. Armando Pires
Dr. Edgar Rebelo
Dr. Isabel Simões
Dr. João Freitas
Dr. Luís Teixeira
Dr. Manuel Cândido

Dr. Pedro Carvalhais
Dr. Pedro Matos
Dr. Rafael Pombo

Ears, Nose and Throat (ENT)
Dr. Maria José Bastos

Paediatrics
Dr. Conceição Nunes
Dr Luís Silva Pinto

Clinical and Child Psychology
Dr. Ana Isabel
Dr. Vanda Clemente
Dr. Vera Lucia Silva

Psychiatry
Prof. Dr. António Macedo

Speech Therapy
Dr Alexandra Figueiredo

Urology
Dr. Henrique Igreja Dinis

COMPLEMENTARY EXAMS
- X-rays
- Magnetic Resonance
- CAT
- Ultrasound
- Blood and urine tests
- Electrocardiogram at rest
- Electrocardiogram with stress test
- Tonal Audiometry
- Impedancemetry with and without reflexes
- Indirect Laryngoscopy
- Gynaecological endovaginal ultrasonography
- Colposcopy w/ cervix and vulva biopsy
- Check Up

OCCUPATIONAL HEALTHCARE
Urgicentro offers business services that provide accessible health monitoring for your employees, the prevention of work-related risks and the improvement of the work environment.

Medical examinations:
- Initial check-up
- Occasional exams
- Periodic tests

The exams can be performed in your firm's facilities or on our premises.
At URGICENTRO, we put our primary healthcare services at the disposal of firms and their employees: curative medicine; nursing; vaccinations campaigns, etc.
URGICENTRO offers entrepreneurs, workers and their families a 20% discount on all of their health services: general medicine appointments; specialty appointments; complementary exams.

AGREEMENTS

The agreements you need
At Urgicentro, we aim to satisfy our clients' requirements. For this reason, we offer the most exhaustive range of agreements, because we believe health should be a joy and not a worry.

CONTACTS

We're just around the corner!
Our aim is to reach everybody who needs our services.
You can find us in the heart of Coimbra, but also, if needed, we can send one of our specialised team to your home or company.

1c. CURRICULUM VITAE

CURRICULUM VITAE

BIOGRAPHICAL DATA

Luis Teixeira, son of a doctor and university professor, and of a chemistry researcher, was born in Lourenço Marques, Mozambique, on January 23rd 1973.
He's been living in Coimbra, the "city of students", since he was six months old and grew up there until starting University.
He is father of two children and lives in Coimbra, which is also his main work place.

UNIVERSITY EDUCATION

1996, October 31st - Bachelor's degree in Medicine at the University of Coimbra, with a final classification of Very Good with Distinction (Grade 16.08 out of 20).

CLINICAL TRAINING

1997-1998 – Residency in the Hospitals of the University of Coimbra.
Specialty in Orthopaedics and Traumatology at the Hospitals of the University of Coimbra in February 2006 with a final grade of 19.8 (out of 20).

2014 - European Spine Course Diploma – Eurospine Foundation (first Portuguese doctor with the European Diploma of Spine Surgery).

ADDITIONAL CLINICAL TRAINING

25 Post-graduation or Professional Development Courses in the area of Orthopaedics.

18 Post-graduate courses in the area of the spinal column, 14 of which were abroad in renowned European centres (The Royal College of Surgeons of England, London; Van Hebron Hospital, Barcelona; Faculty of Medicine, University of Barcelona; Kyphon, University of Leiden, Holland; AO Spine, Oberdorf, Switzerland; Centre of minimally-invasive surgery, Caceres, Spain; etc.).

Various international internships in spine surgery, including:

- Centre for Spinal Studies and Surgery, Queens Medical Centre, Nottingham (UK) complemented by the attendance of "Postgraduate Spinal Surgery Teaching Programme".
- b) Goodman Campbell Brain and Spine, St Vincent Hospital, Indianapolis (USA) – Neurosurgery unit dedicated to minimally-invasive surgery.

CLINICAL ACTIVITY

2006 - Occasional hospital consultant of the Orthopaedics Department of the Hospitals of Coimbra (Spine pathology sector).

Oct. 2006-Oct. 2007 - Occasional hospital consultant of the Orthopaedics department of the Sousa Martins Hospital (through inter-hospital agreement with the Hospitals of the University of Coimbra). Medical-surgical activity in both hospitals during the period mentioned above.

Oct. 2007 - Retirement from public sector service, upon becoming Head of the Orthopaedics Sector of the Hospital da Misericórdia in Mealhada (until June 2009).

2007-2013 - Orthopaedic surgeon in the Sousa Martins Hospital in Guarda. Weekly clinical activity in the Accident and Emergency Department (traumatology) and as external consultant and surgeon in the area of spine pathology.

2006 - Private external consultant in the following clinics: Urgicentro, Coimbra (since October 2006); Egiclínica, Guarda (since November 2006).

2007-2011 - Orthopaedist of SAMS (Social Assistance System) clinical board of Guarda's Local Clinic

Since 2009 - Orthopaedist in Sta Filomena Health Centre –SANFIL Medicina Group.

Since 2013 - Orthopaedics Coordinator of the SANFIL Medicina group.

2010-2013 - Orthopaedist and Clinical Director of Coimbra Spine Centre.

2013 - Orthopaedist (and founder) of the Spine Centre[3] – Spine Surgery, as General Director.
July 2013 - Performed, for the first time in Portugal, the first spinal column surgery guided by 3d imaging control neuronavigation.

Approximately 7000 orthopaedic surgical interventions, mostly in the field of Spine Pathology.

Main areas of interests: microinvasive spine surgery; traumatic and tumoral pathology of the spinal column.

ADMINISTRATIVE ACTIVITIES

[3] Currently the biggest Private Unit in Portugal for spine surgery (awarded the Innovation Prize from the newspaper *As Beiras* in 2014).

1999-2003 - Member of the National Physicians Council of the Portuguese Medical Association.

2005-2012 - Member of the Board of the Portuguese Society of Medical Hydrology and Climatology (Board Secretary).

2006-2009 - Member of the Board of the Orthopaedics Specialty College of the Portuguese Medical Association.

2007-2008 - Deputy Clinical Director of the Misericórdia Hospital in Mealhada.

2008-2009 - Clinical Director of the Misericórdia Hospital in Mealhada.

2009-2013 - Clinical Director of Coimbra Spine Centre.

2012-2013 - General Secretary of the Portuguese Society of Spine Pathology.

Since 2013 - Orthopaedics Coordinator of the Sanfil Medicina group.

Since 2013 - General Director of the Spine Centre – Spine surgery clinic.

SCIENTIFIC WRITINGS

Total of 18 works published in national and international journals.

Presentation of 212 scientific papers in national and international conferences .

Awarded 8 prizes:

- 2003 - 1st Prize (Best Poster) of the 23rd National Orthopaedics and Traumatology Conference;
- 2004 - 1st Prize (Best Poster) in the conference on Paediatric Orthopaedics;
- 2004 - 1st Prize (Best Paper Session) in the conference on Paediatric Orthopaedics;
- 2004 - 1st Prize in the Conference of the Portuguese Society of Spine Pathology;
- 2004 - 1st Prize (Best conference paper) of the 24th National Conference of Orthopaedics and Traumatology;
- 2005 - 1st Prize (Best Poster) of the 25th National Orthopaedics and Traumatology Conference;
- 2006 - 1st Prize (Best Poster – Spinal Column Section) of the 26th National Orthopaedics and Traumatology Conference;
- 2012 - 1st Prize (Best Poster) of the Conference of the Portuguese Society of Spine Pathology.

ORGANISATION OF SCIENTIFIC MEETINGS

January 27th, 2004 – Chairman of the organisation of the Conference on Therapeutic Actualisation in Osteoarticular Pathology for general practitioners, held in the Hotel das Termas, Curia.

2005-2008 - Collaboration in the organisation and participation as Instructor in the 4th Course of Dissection of Natural Parts for students of the 1st year of Medicine and Dentistry of F.M.U.C. (Faculty of Medicine of the University of Coimbra) – F.M.U.C. Institute of Normal Anatomy.

28-29 September 2007 - Organisation (as Managing Director) of the 1st Lumbar Spine Surgery Course for Nurses at Misericordia Hospital in Mealhada.

10 May 2008 - Organisation of the 1st Practical Course in Posterior Lumbar Instrumentation – Misericordia Hospital in Mealhada / Institute of Normal Anatomy of F.M.U.C.

2011 - Chairman of the Organising Committee of the 2nd Iberian Meeting of Spine Pathology – Coimbra.

2012 - Member of the Organising Committee of the National Conference of the Portuguese Society of Spine Pathology – Monte Real.

2013 - Member of the Organising Committee of the 1st Symposium of Pathology of the Portuguese Society of Spine Pathology – Viseu.

2013 - Chairman of the Organising Committee of the 1st Orthopaedics Meeting of the Central Zone – Sanfil Medicina – Monte Real.

2013 - Member of the Organising Committee (Chairman) of the 1st Course of Microsurgical spinal techniques – Vila do Conde.

PROFESSIONAL AND SCIENTIFIC ASSOCIATIONS

Member of 11 national Professional/Scientific Societies, with management positions in two of them.

- Portuguese Medical Association – professional licence n° 36946
- Portuguese Society of Orthopaedics and Traumatology
- Portuguese Association of Personal Injury Evaluation
- Portuguese Association of Emergency Medicine
- Portuguese Society of Spine Pathology

- Portuguese Society of Medical Hydrology and Climatology
- AO Spine Society
- Portuguese Anatomy Society
- North American Spine Society (NASS)
- Eurospine Foundation
- Argospine – Association Européenne des Groupes d'études pour l'ostheosynthese rachidienne

EDITORIAL ACTIVITY

2005-2009 - Editor of the Portuguese Journal of Orthopaedics and Traumatology

TEACHING ACTIVITY

2004-2012 - Guest Lecturer IN Anatomy of the Faculty of Medicine in the University of Coimbra.

2007-2012 - Responsible for the theoretical and practical classes of General Human Anatomy of the Bachelor's course in Dentistry in the Faculty of Medicine of the University of Coimbra.

Since academic year 2008/2009 - Director of the Anatomical Aging Course of the Master in Geriatrics of F.M.U.C.

A.y. 2003/2004-2005/2006 - Guest Orthopaedics practice teacher, on a voluntary basis, for students of the 5th year of the Bachelor in Medicine of the Faculty of Medicine in the University of Coimbra.

Since the academic year 2006/2007 - Collaborator to the Master in Sports Medicine of the Faculty of Medicine in the University of Coimbra, in the course of Sports Ortho-Traumatology (in charge of the lessons of spine traumatology).

2001-2003 - Trainer (with monitoring functions) of the TEAM (Trauma Evaluation and Management) of the Portuguese Surgery Society.

1999-2000 - Occasional Trainer in the area of Traumatology of the Training Centre of INEM – Coimbra.

1996-2002 - Co-manager of the course of Clinical Pharmacology – Nursing Course of the Bissaya Barreto Nursing School.

1997-2000 - Manager of the courses of Intensive Care and Medical Emergency of Cardiopneumology in the Health Technology School of Coimbra.

2006-2007 - Director of Anatomy classes in the training program of interns, in the additional Orthopaedics training of HUC (Hospitais Universitários de Coimbra – University Hospitals of Coimbra).

MEDICAL EMERGENCY-RELATED ACTIVITY

TRAINING

November 1999 - Course in Medical Emergency Techniques for Doctors (for Emergency and Reanimation Medical Vehicles), National Institute of Medical Emergency.

September 27th-30th, 2000 - A.T.L.S. (Advanced Trauma Life Support), Course for Doctors.
American College of Surgeons –Portuguese Surgery Society, Coimbra.

November 2000 - Course of in-flight Physiology and Safety in heliports
(For the transportation by plane of urgent patients), National Institute of Medical Emergency.

ACTIVITIES

2000-2005 - Doctor on Emergency and Reanimation vehicles (VMER) in the Hospitals of the University of Coimbra.

2000-2007 - Collaboration with the Portuguese Red Cross – Medical support for Sports events.

2003-2007 - Director of the Health Safety Coordination of all events occurring in the stadium *Cidade de Coimbra*.

June 2004 and 2006 - Head of the General Health Coordination of the "Rock in Rio Lisboa" events (approximately 400,000 participants for each event).

June 27th, 2004 - Professional commendation for service to INEM (National Institute of Medical Emergency) in exceptional conditions involving numerous victims.

OTHER INFORMATION

1991-1996 - Associate and member of the Fado Section of A.A.C (Coimbra University Student Association).

1994-1996 - Founding Member of the Medicine Music Ensemble (*Tuna*) of the University of Coimbra.

Founding Member of Bairrada Rotary Club, Curia.

Member of the Wine Connoisseurs Confraternity of Bairrada.

PHOTO GALLERY

Scientific Activity and Training in Portugal

Scientific Activity and Training abroad

Surgical Activity in Portugal

Surgical Activity abroad

Media

Spine Centre Courses

Medical Emergency

Events

Prizes and Awards

1d. BROCHURES

Lumbar Stenosis

About your operation

Lumbar stenosis consists of a tightening of the spinal canal affecting the marrow and/or the nerve roots. It is usually caused by a natural ageing process of the spine causing a reduction of the diameter of the spinal canal.

The main symptoms are: pain or weakening of the legs, aggravated when standing or walking and relieved when sitting, bending forward or lying down.

The operation consists of the removal of the bone, ligaments and intervertebral disc that contribute to the stenosis, decompressing the nerve structures. This surgical intervention can be performed through conventional or minimally-invasive techniques.

Pre-operative instructions
Before your operation please inform us if you have the following conditions:
• Fever
• Cough
• Alteration/injuries in the area to be operated

The day of your operation
Personal care
Take a pre-operative bath, making sure that the part of the body to be operated is clean; cut your nails short, and remove nail polish; do not use make-up; remove dentures, necklaces, rings, glasses, earrings or other accessories.

Admission to the room
In your room, the nursing staff will provide the clothes and compression stockings to be used in the operating suite, where you will be taken between 30 and 40 minutes before the intervention.

Operating suite
You will speak with the anaesthesiologist, who will ask you a few questions.
You will be attached to a cardio-respiratory device and given a serum for the anaesthetic before your operation.

Frequently-asked questions (FAQs) regarding post-operative care
Where and how will I wake up?
After your operation, you will stay for some time in recovery under observation. During this time you will already be awake and under the effect of analgesics that will ease the pain. Later, you will be moved to your room.

What is a vesical catheter? Will I need it?
Operations that last longer and have a higher risk of blood loss require the placing of a vesical catheter. It is a urinary device that allows us to keep count of the quantity of liquids you lose in order to keep you in a healthy and balanced state. It is also helpful in the immediate post-operative period, when you are unable to stand up and go to the toilet by yourself. The vesical catheter is placed in the operating suite, after the anaesthesia, and it is usually removed the day after the operation.

What is a drain? Will I need one too?

In operations involving a substantial blood loss, it is necessary to place a drain, which removes the remaining blood from the inside of the operated area in order to reduce bruising and the risk of infections. The drain will be taken off during your hospital stay, upon the doctor's order, as soon as the amount of blood in the receptacle reduces.

What position should I lie in?

In the post-operative period, you can choose the position that is most comfortable to you, but you should avoid lying on your stomach. If necessary, you can ask a nurse to help you move.

Am I going to feel pain?

Pain is a subjective feeling and it varies from patient to patient, according to each person's pain barrier. You will be administered painkillers periodically, and you can request additional medication if the pain causes you distress.

When will I manage to stand up?

In the first 12 to 24 hours after your operation, the nursing and physiotherapy team will help you to try and stand up. You will have to wear a lumbar support belt until further medical indication.

How long will I stay in the Hospital? Who will authorise my hospital discharge?

The duration of your hospital stay depends on the type of operation and some other factors associated to your personal characteristics. It is usually between 2 and 5 days. This decision is part of the medical evaluation and of your conditions and recovery.

Your hospital discharge will be authorised by a doctor of our team. Then, you will receive the documentation of the procedures carried out, as well as advice on caring for the wound and the date of your next appointment.

The information contained in this brochure is general, and may not apply to every clinical case, depending on each patient.

Please consult your doctor.

Spinal Disc Herniation

About your operation

A spinal herniation, or slipped disc, consists of the displacement of a part if the intervertebral disc from its location, resulting in a compression of nerve structures. The main symptoms are pain, numbness and a decrease in muscle strength in the legs.
The objective of the surgery is to decompress the nerve structures.
It is a relatively fast operation, with limited loss of blood.
It is usually performed with a minimally-invasive technique, through a small skin incision that allows a faster recovery.

Pre-operative instructions
Before your operation please inform us if you have the following conditions:
• Fever
• Cough
• Alteration/injuries in the area to be operated

The day of your operation
Personal care
Take a pre-operative bath, making sure that the part of the body to be operated is clean; cut your nails short, and remove nail polish; do not use make-up; remove dentures, necklaces, rings, glasses, earrings or other accessories.

Admission to the room
In your room, the nursing staff will provide the clothes and compression stockings to be used in the operating suite, to which you will be taken on a stretcher between 30 and 40 minutes before the intervention.

Operating suite
You will speak with the anaesthesiologist, who will ask you a few questions.
You will be attached to a cardio-respiratory device and a serum for the anaesthetic before your operation.

Frequently asked questions regarding post-operative care
Where and how will I wake up?
After your operation is finished, you will stay for some time in recovery under observation. During this time you will already be awake and under the effect of analgesics that will ease the pain. Later, you will be moved to your room.

What is a vesical catheter? Will I need it?
Operations that last longer and have a higher risk of blood loss require the placing of a vesical catheter. It is a urinary device that allows us to keep count of the quantity of liquids you lose in order to keep you in a healthy and balanced state. It is also helpful in the immediate post-operative period, when you are unable to stand up and go to the toilet by yourself. The vesical catheter is placed in the operating suite, after the anaesthesia, and it is usually taken off on the day following the operation.

What is a drain? Will I need one too?
In operations involving a substantial blood loss, it is necessary to place a drain, that removes the remaining blood from the inside of the operated area in order to reduce hematomas and the risk of

infections. The drain will be taken off during your hospital stay, upon the doctor's order, as soon as the amount of blood in the receptacle reduces.

What position should I lie in?
In the post-operative care you can choose the position that is most comfortable to you, but you should avoid to lie down on your stomach. If necessary, you can ask a nurse to help you move.
Am I going to feel pain?
Pain is a subjective feeling and it varies from patient to patient, according to each person's pain barrier. You will be administered painkillers periodically, and you can request additional medication if the pain causes you distress.

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In the first 12 to 24 hours after your operation, the nursing and physiotherapy team will help you to try and stand up. You will have to wear a lumbar support belt until further medical indication.

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The duration of your hospital stay depends on the type of operation and some other factors associated to your personal characteristics. It is usually between 2 and 5 days. This decision is part of the medical evaluation and of your conditions and recovery.

Your hospital discharge will be authorised by a doctor of our team, and in that moment you will receive the documentation of the procedures carried out, as well as the indication of the wound care and the date of your next appointment.

Herniated Cervical Disc
Arthrodesis | Cervical Arthroplasty
About your operation

Herniated neck disc surgery is a surgical procedure performed in the neck (cervical area) to help relieve the pressure on nerve roots. Such pressure can cause pain or discomfort in the neck region, and also numbness of the arms.

The surgeon removes the damaged disc, thereby decompressing the nerve roots and soothing pain. Then, an implant is placed between the vertebrae.

Pre-operative instructions
Before the surgery, please inform us if you have the following conditions :
• Fever
• Cough
• Alteration/injuries in the area to be operated

Pre-operative instructions
Before your operation please inform us if you have the following conditions:
• Fever
• Cough
• Alteration/injuries in the area to be operated

The day of your operation
Personal care
Take a pre-operative bath, making sure that the part of the body to be operated is clean; cut your nails short, and remove nail polish; do not use make-up; remove dentures, necklaces, rings, glasses, earrings or other accessories.

Admission to the room
In your room, the nursing staff will provide the clothes and compression stockings to be used in the operating suite, to which you will be taken on a stretcher between 30 and 40 minutes before the intervention.

Operating suite
You will speak with the anaesthesiologist, who will ask you a few questions.
You will be attached to a cardio-respiratory device and a serum for the anaesthetic before your operation.

Frequently asked questions regarding post-operative care
Where and how will I wake up?
After your operation is finished, you will stay for some time in recovery under observation. During this time you will already be awake and under the effect of analgesics that will ease the pain. Later, you will be moved to your room.

What is a vesical catheter? Will I need it?
Operations that last longer and have a higher risk of blood loss require the placing of a vesical catheter. It is a urinary device that allows us to keep count of the quantity of liquids you lose in order to keep you in a healthy and balanced state. It is also helpful in the immediate post-operative period, when you are unable to stand up and go to the toilet by yourself. The vesical catheter is placed in the operating suite, after the anaesthesia, and it is usually taken off on the day following the operation.

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In operations involving a substantial blood loss, it is necessary to place a drain, that removes the remaining blood from the inside of the operated area in order to reduce hematomas and the risk of infections. The drain will be taken off during your hospital stay, upon the doctor's order, as soon as the amount of blood in the receptacle reduces.

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When will I manage to stand up?

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How long will I stay in the Hospital? Who will authorise my hospital discharge?

The duration of your hospital stay depends on the type of operation and some other factors associated to your personal characteristics. It is usually between 2 and 5 days. This decision is part of the medical evaluation and of your conditions and recovery.

Your hospital discharge will be authorised by a doctor of our team, and in that moment you will receive the documentation of the procedures carried out, as well as the indication of the wound care and the date of your next appointment.

Lumbar Arthrodesis

About your operation

Lumbar arthrodesis is a surgical procedure performed to stabilise the spine, creating “bone bridges” between at least two vertebrae, eliminating any movement between them.

An incision is made, and then the surgeon removes all the damaged disc and bone material that is compressing the nerve structures and the dural sac. After that, the surgeon places screws and titanium bars to secure the structure while the bone bridge is built.

The surgery usually lasts 3-4 hours, depending on the complexity of the problem and the number of vertebrae that need to be stabilised.

Pre-operative instructions
Before your operation please inform us if you have the following conditions:
• Fever
• Cough
• Alteration/injuries in the area to be operated

The day of your operation
Personal care
Take a pre-operative bath, making sure that the part of the body to be operated is clean; cut your nails short, and remove nail polish; do not use make-up; remove dentures, necklaces, rings, glasses, earrings or other accessories.

Admission to the room
In your room, the nursing staff will provide the clothes and compression stockings to be used in the operating suite, to which you will be taken on a stretcher between 30 and 40 minutes before the intervention.

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You will be attached to a cardio-respiratory device and a serum for the anaesthetic before your operation.

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After your operation is finished, you will stay for some time in recovery under observation. During this time you will already be awake and under the effect of analgesics that will ease the pain. Later, you will be moved to your room.

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Operations that last longer and have a higher risk of blood loss require the placing of a vesical catheter. It is a urinary device that allows us to keep count of the quantity of liquids you lose in order to keep you in a healthy and balanced state. It is also helpful in the immediate post-operative period, when you are unable to stand up and go to the toilet by yourself. The vesical catheter is placed in the operating suite, after the anaesthesia, and it is usually taken off on the day following the operation.

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Your hospital discharge will be authorised by a doctor of our team, and in that moment you will receive the documentation of the procedures carried out, as well as the indication of the wound care and the date of your next appointment.

2. THE SCIENTIFIC ARTICLE

Fall risk and computed posturography in amputees

Abstract

Objective: Half of lower limb amputees suffer at least one fall per year. Computed posturography (CP) allows the analysis of postural reactions by displacing the centre of body mass. CP has previously been used to assess the risk of falling in various populations, but it is not established if it can identify this risk in amputees. The objective of this study was to evaluate the static postural control of lower limb amputees through CP and its relationship with previous falls.

Methods: A sample of 35 unilateral lower-limb amputees followed in an outpatient department was obtained. The Timed-Up-and-Go test and the Activities-Specific Balance Confidence scale (ABC) were applied. Postural stability was evaluated by CP using the Biodex Stability System ™. Overall Stability index (OA) scores were obtained from the mean scores of three trials at the most stable platform level.

Results: The sample consisted of y 54.30% transtibial amputees, while the others were transfemoral amputees. 36.80% of the transtibial amputees reported at least one fall in the previous year. These showed a significantly higher mean age and significantly lower ABC scale values. Of the transfemoral amputees 43.80% had a history of falls in the previous year. In CP individuals who fell had a significantly higher OA index. The evaluation of the ROC curve showed good discriminatory capacity of the OA index in CP.

Conclusions: Transfemoral amputees with previous falls presented significant alterations of the static postural control in CP, while this was not true for transtibial

amputees. A longitudinal study may be of interest to assess the capacity of CP to predict fall risk.

Keywords: Amputation, Accidental falls, Postural Balance

Introduction

Falls represent a significant problem for lower limb amputees. Besides being a potential cause of harm both for the body and the prosthetic components, they may affect the fear of falling and as a result lead to a decrease in activity, social participation and quality of life.

[1-4] Along with old age and cerebrovascular accidents, the amputation of a lower limb is the main cause of falls.[3] Approximately half of lower limb amputees suffer at least one fall per year. [1, 5-6] In a study into the most important psychosocial factors in the rehabilitation of amputees, the fear of falling emerged as the first concern, reported by 58% of individuals.

[7] It was also found that the fear of falling is higher in individuals with recent falling history. [1] The intrinsic factors that increase the risk of falls include age, presence of chronic illnesses, walking instability, sight alteration and necessity of chronic medication. [1, 3]

The maintenance of postural stability is fundamental for autonomous walking capacity. Postural control is achieved through the maintenance of the body's centre of gravity within the supporting base. [8] Static posture control in healthy individuals depends mostly on the somatosensory, vestibular and visual integration of elements. [9-10] The maintenance of postural control is complex and depends on many factors, and its failure in amputees can be caused by various factors, such as proprioceptive deficit, reduction of physical strength and loss of flexibility. [9-11]

Computed posturography (CP) is an objective method of evaluation that enables the analysis of postural reactions through displacing the body mass centre. CP has previously been used to assess the risk of falls in various populations, and it is known

that amputees present alterations of postural control, but it has not been established if CP can identify the risk of falls in amputees. [9]

The objective of this study was to assess if CP can be a useful resource to distinguish between lower limb amputees with previous falls and establish a cut-off point.

Materials and Methods

A convenience sample was obtained, consisting of lower limb amputees that required outpatient consultation between July and December 2014. It included unilateral lower limb amputees, over 18 years old, that had had a prosthesis for the previous12 months or more and were able to walk.

The sample was made up of 35 individuals. Each of them provided informed consent for the realisation of the study. The data was collected by three doctors from the department, and treated as confidential and anonymous. The following variables were evaluated: age, body mass index, sex, cause of amputation, time passed since the amputation, level of amputation, predominant laterality, use of walking aids, comorbidities and previous falls during the use of the prosthesis in the past 12 months. The Timed up-and-go test (TUG) and the Portuguese version of Activities-specific Balance Confidence Scale (ABC) were applied.

TUG is a simple test, focused on the risks of falls. It is quick and functional, and requires static and dynamic balance to be performed. ABC is an instrument that enables the identification of individuals with balance problems. It proved reliable on lower limb amputees. Low values of ABC scale are related with low levels of confidence in balance. [2, 12-13]

Postural stability was evaluated through CP with the Biodex Stability System™, which consists of a round platform with various stability levels, connected to a computer

program that measures the oscillations of the body mass centre and calculates the stability indices Overall Stability Index (OA), Anterior-Posterior Stability Index and Medial-Lateral Stability Index. Among the three indices provided, the OA seems to be the best marker of overall balance. [9]

The individuals were asked to maintain balance, with their eyes open and their arms along their body. Three 20-second measurements were performed at the most stable level of the platform (Level 8) and the average of the figures of the OA index was registered. Increased values of the OA index suggest a disturbance in postural control. [9]

A statistical analysis of the different variables and comparison among the groups of individuals according to previous falls was performed separately for each level of amputation. The group of individuals with fall history was defined as Group A and the group of individuals without fall history was defined as Group B. The results were analysed with the support of the program SPSS® Statistics version 22, through the Student T, Chi-square and Fisher's exact tests. The normality of variables was evaluated through the Shapiro-Wilk test. To evaluate the discriminatory capacity of CP as diagnostic instrument, the Receiver Operating Characteristic Curve (ROC), and the cut-off point calculated from Youden's formula were determined. The values of sensitivity, specificity, positive and negative predictive value and likelihood ratio were also determined.

Results

The sample was divided according to amputation levels and the individuals were classified according to their fall history in the previous year.

Transtibial amputees (n=19) were predominantly male (68.40%), with an average age of 51.05±15.74 years and an average prosthetization time of 16.58±9.45 years. The most frequent cause of amputation was traumatic (68.40%). 36.80% of the individuals reported at least of fall in the previous year. Group A and Group B of transtibial amputees did not present differences related to sex, BMI, prosthetization time, use of walking supports or presence of comorbidities.

Group A presented a significantly higher average age (61.43 vs. 45.00 years, p=0.02) and significantly lower values of ABC scale (60.27 vs. 77.71, $p<0.05$). It was found that transtibial amputees whose amputed limb was the predominant one relied more on walking aids (p=0.02), though they did not present a higher fall risk.

TUG test values were higher in individuals of Group A, but without statistic significance (11.86 vs. 8.79 seconds, p=0.10). In CP Group A presented a higher OA index, though without statistical significance (3.05 vs. 2.74, p=0.71).

Among transfemoral amputees (n=16), 81.30% were male, with an average age of 54.13±10.27 years and an average prosthetization time of 20.13±13.49 years. The most frequent reason of amputation was traumatic in 75.00% of the cases. With respect to previous falls, 43.80% had had falls in the previous year. Group A and Group B transfemoral amputees did not present differences related to age, sex, BMI, prosthetization time, ABC values and TUG time. In CP, Group A presented a significantly higher OA index (3.84 vs. 2.62, p=0.02).

The ROC curve evaluation revealed a good discriminatory capacity (AUROC=0.86, p=0.02) (Figure 1). With a cut-off point of 3.585 the OA index presents a sensitivity of 85.71%(95% CI 42.23-97.63%) and a specificity of 88.89% (95% CI 51.74-98.16%) in the detection of individuals with previous falls, a positive predictive value of 85.71%

(95% CI 42.23-97.63%), a negative predictive value of 88.89% (95% CI 51.74-98.16%) and a likelihood ratio of 7.71 (95% CI 1.19-50.18).

Discussion

The CP results showed significant alterations only for transfemoral amputees. Such alterations did not occur in transtibial amputees. The lack of significant differences in static postural control among the transtibial amputees of the two groups may be due to different activity levels that were not evaluated in the present study.

Amputees with a good postural control and high levels of activity may undertake more demanding bipodalic activities, involving extrinsic fall risk factors.[4]

It is also known that falls in transtibial amputees occur essentially in a dynamic context, while the present study only evaluated static postural control.[11]

The study presents various limitations, in particular the lack of quantification of the activity level of each individual and the lack of differentiation of the type of prosthetic components. The fact that the fall history was recounted by the individuals themselves may bring a recall bias and limit data accuracy. However, the present results agree with the literature reviewed.[1-2] The sample analysed also includes a high percentage of traumatic amputations, not representative of the general lower limb amputee population. It is known, however, that traumatic amputees present a higher probability of prosthetization success compared to vascular amputees. [12, 14]

The execution of CP, even at the highest stability level, requires a sufficient postural control to carry out the exam, which could exclude amputees with more serious postural alterations. However, in the present sample every amputee managed to carry out the evaluation.

The results of ABC scale revealed differences only between the two groups of transtibial amputees, and the TUG test did not distinguish the groups in both amputation levels. It is important to highlight the scarce availability of scales and evaluation tests related to balance and fall risk validated for the Portuguese population and suitable for lower limb amputees.

The ROC curve analysis, a method of quality assessments of diagnostic tests, revealed that the CP is a test with good discriminatory capacity in transfemoral amputees.

Conclusions

It is important to assess and understand postural control alterations in amputees to detect the individuals at risk and establish prevention measures in the population involved.

The present study revealed that CP can be a validated instrument in detecting fall risk in transfemoral amputees, establishing a relationship between static postural control alterations and previous falls, while this was not the case for transtibial amputees.

A longitudinal study may be of interest in assessing the capability of CP to detect fall risk and assess effectiveness of a possible intervention. The identification, through CP, of patients most in need of postural balance training may have implications for the planning of a more effective rehabilitation programs, for a more targeted intervention that would have a higher impact on the functionality and quality of life of amputees.

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Tables and figures

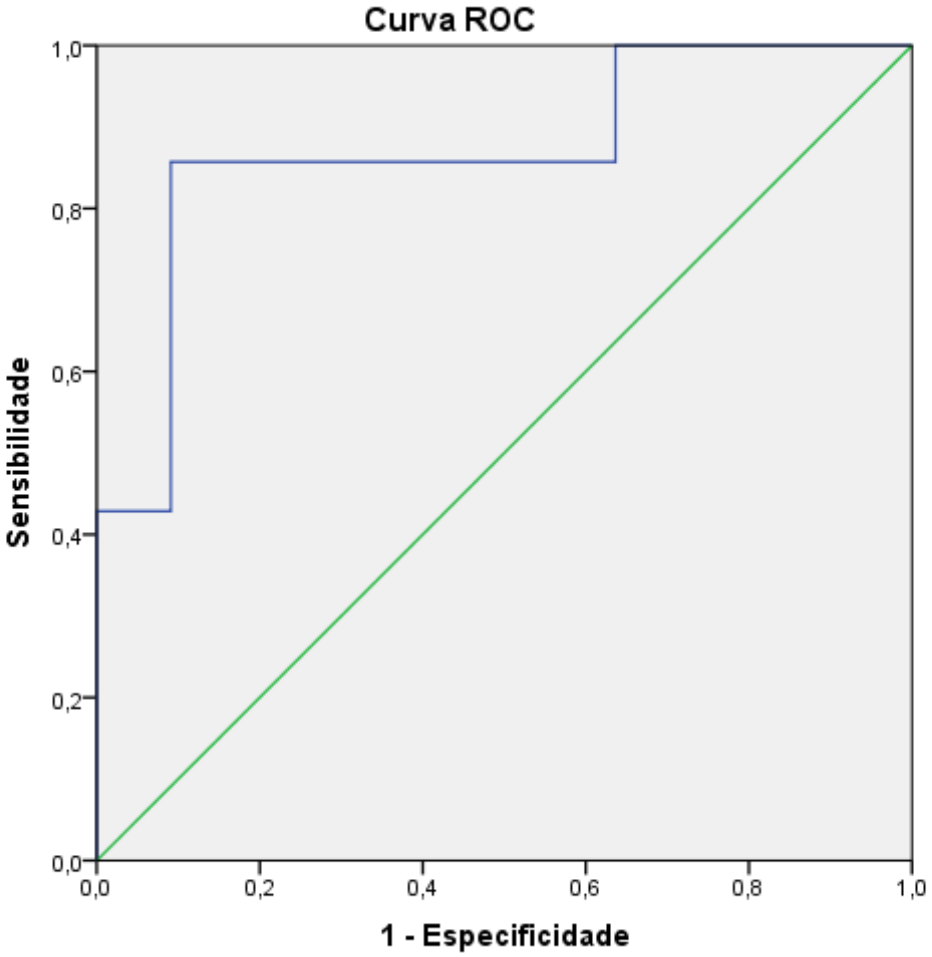

Ilustração 1 - Curva ROC: PC e queda em amputados transfemorais

ROC curve
Sensitivity
1-Specificity
Figure 1 – ROC curve: CP and falls in transfemoral amputees

PART II:

COMMENTARY AND DISCUSSION

CHAPTER 1

THE WEBSITES

The first group of texts translated for this Project consists of the website content of Health Clinics located in Coimbra, *Spine Centre* and *Urgicentro*. All texts are related to the area of Orthopaedics.

The material was obtained from the secretary of the clinic (the *initiator*[4] of the translation process), and the direct contact with the her was not frequent. All texts were written to be part of the clinics' websites, but they belong to different areas: the first one was a presentation of *Spine Centre* health clinic; the second one was an introduction to another related clinic, called *Urgicentro*; a third file was dedicated to the curriculum vitae of Doctor Luis Teixeira, while the last file was a series of explanatory brochures about different orthopaedic surgical interventions performed in the clinics.

As was clear from the start, although this first group of texts belonged to the area of healthcare, there was also a fundamental marketing aspect, due to the interaction with clients and the need to explain contents while, at the same time, selling a service.

After receiving some initial indications from the initiator, the following step was to read the texts for a first analysis, to try and foresee the possible difficulties, and plan the path to be followed in order to make the translation process efficient, improve the specific knowledge involved in it and meet the client's requirements.

[4] Christiane Nord uses the term 'initiator' to define the "person, group or institution that starts off the translation process and determines its course by defining the purpose for which the target text is needed" (1997:8). On the other side of the translation act she identifies instead the 'receiver' also responsible of the use of the term 'commissioner', as alternative to 'user'), relevant for the specification of the purpose of the target text (1997:20). As the translations undertaken in this project did not involve remuneration, the term 'initiator', included in this classification, was felt to be more appropriate than 'customer' or 'client'.

1.1 THE CLINIC HOMEPAGES

The first two texts consisted of a presentation of the clinics *Spine Centre* and *Urgicentro*, together with their services and characteristics. *Spine Centre*'s homepage was the only one for which the initiator required a definite deadline, which made it necessary to carry out the translation in a limited time (the deadline was communicated with short notice). The other translations, instead, were not requested with any urgency, leaving the translator able to organise all schedules freely.

The register of the homepages is fairly informal, because the content, though technical, is marketing-oriented, therefore has to be readable and appealing, as well as accurate and specific. The two texts also share many issues and difficulties concerning the translation process. *Urgicentro*'s file, in fact, was in many ways similar to *Spine Centre*'s, as far as the register, structures, target audience and vocabulary were concerned, and in order to achieve an overall consistency, the choices made throughout the first translation were applied to the second one as well. The texts consist of a brief presentation of the health centres, followed by a list of the services and exams available, the specialties and the relative members of the medical staff.

These first documents are a good example of the mixture of genres characteristic of this kind of websites. For instance, they present, along with various lists of specific medical terms and explanations of medical services, a whole section dedicated to previous clients' feedback, quite informal and emotive, and not related in any way to technical language (*Spine Centre*) and they are characterised by a general attention to the reader, who is not only a patient but also a potential client of a service. It was therefore stimulating to translate such texts as a first approach to the practical part of the project, because it involved from the start an effort to maintain a certain balance between informality and appeal, on the one hand, and technical accuracy and reliability on the other.

As is typical of the style of this hybrid genre of health-marketing contents, the websites are marked by slogans and set phrases designed to attract the attention of possible future clients. These are important in the translation from a linguistic and

cultural point of view because they must sound natural and appealing, therefore it was necessary to convey their meaning in the English text without making the mistake of translating too literally from Portuguese, with the consequence of an odd-sounding result in the target text.

Besides this, what became clear during the translation of these texts was the necessity of always keeping in mind their specific target reader. This means mostly that the purpose of the translation was always to be kept into account, in order to establish clearly to whom the translation was addressed. As was later confirmed by the initiator, the target of the translations was mostly European, so the whole group of website translations was elaborated with particular attention to British spelling and terminology.

The issues concerning the translations were various. As regards the vocabulary, there were two main lexical areas: technical terminology related to Orthopaedics and general medicine, and words related to business and marketing. All terms were carefully researched, and the websites of similar clinics in the Anglophone world were consulted for the choice of the most adequate terminology[5].

The spelling and correct denomination of specialties and tests was thoroughly verified in websites of similar British clinics, glossaries and dictionaries. For example, "Orthopaedics" and derived terms (field-defining and present in all texts), was written with the British English (BE) spelling that shows its Greek roots. On the other hand, the translation of terms was not influenced merely by the variety of English chosen as a target, but it also involved a matter of register. This way, a term such as *Otorrinolaringologia* got translated as the more commonly used "ENT" (Ear, Nose and Throat) instead of the colder and technical "Otorhinolaryngology". Following the same concept, *análises clínicas* was translated as "urine and blood tests", instead of the more literal "clinical analysis", to obtain a simple communication, closer to everyday language. Similarly, *tempo de atendimento*, initially translated as "handling time", was later changed for "attendance time" to avoid the cold connotation of dealing with the clients only from a bureaucratic or financial point of view, without interest in their health care. Another important distinction emerged from the translation of this

[5] For example, UK Healthcare (http://ukhealthcare.uky.edu/ortho/) and London Orthopaedic Clinic (http://www.londonorthopaedic.com/). Last accessed 27/4/16.

website was the one between “exam” and “test”, where exam (examination) is defined as “ an occasion when a doctor looks carefully at someone’s body to make certain they are healthy”[6] and test as “an examination of a part of your body or of a substance taken from your body”[7] (also involving machines).

A good example of an issue influenced from the domain of marketing was the choice of terms to translate the Portuguese “doente”, “cliente” and “utente”. “Customer”, “client”, “user”, “patient” were the alternatives available: where possible, the term “client” was preferred to “patient” (anyway still present in the target text) togive a sense of empowerment to the person receiving treatment. The target audience (foreign people interested in health tourism in Portugal) had to feel as if they are being taken into account as individuals, and not as a case of study. Between the options “client” and “customer” the first one conveys better the idea of a person receiving a tailored service, therefore it helps the text’s aim to transmit an idea of dedication and personalised care. Another fitting example is the choice to translate “bloco operatório” with “operating suite”, instead of “operating unit/block” (a more detached option), to make the reader feel more at ease with the concept of having surgery, giving the idea of a comfortable situation.

In general, all the decisions concerning vocabulary were taken in the direction of a client-oriented text, aiming to generate a sense of human contact with the clinic in order to transmit important medical information without sounding sterile and cold, which would be unappealing to the reader. More generally, many phrases and fixed expressions were borrowed from similar websites related to healthcare and marketing, such as those mentioned above.

Another fundamental issue in the translation process was concerning the tone and ways of addressing the target reader. Considering the purpose of the final text, slight alterations were introduced in this regard in the English version. The translation, in fact, is more personalised than the source text, with a more frequent use of the first person plural (associated to the repetition of the names of the clinics). A great support to this came from the websites consulted, that inspired many of the stylistic and lexical

[6] http://www.macmillandictionary.com/dictionary/british/examination

[7] http://www.macmillandictionary.com/dictionary/british/test_1

choices taken. For example, the opening of *HealthCare* Clinic: “Our specialists and fellowship-trained surgeons are world-renowned for [...]”, or sentences like “It is our goal to provide the highest level of care available so that we may return our patients to their daily activities as quickly as possible” give clear hints about the characteristics that a clinic website should have to be appealing to clients, and suggest the path to follow in the translation of the very similar contents faced in this project. “O SPINE CENTER tem por missão […]” was therefore translated in English as “Our mission at *SPINE CENTRE* is […]”; “[…] procuramos oferecer o maior e mais abrangente número de acordos para a saúde ser uma regalia e não uma preocupação” was translated as “[…]we offer the most exhaustive range of agreements, because we believe health should be a joy and not a worry”; and so on, throughout the whole text. Also, passive constructions were often turned to active personal ones, and the client/target reader was addressed directly, and in a more informal way than in the source text (recurring use of “you” and related pronouns). This to enhance the effect of valuing the client, with a more engaging and colloquial style.

To sum up, the similarity between these two source texts brought similar results in the translated homepages as well, in that each translation choice was influenced by the site’s marketing purpose. Thus, the tone was more explanatory and reassuring, quite different from that of an academic article addressed to a professional or specialised target (as we will see in Chapter 2).

1.2 THE CURRICULUM VITAE

This third file required a more extensive approach for various reasons. It consisted of the Curriculum Vitae of Dr. Luis Teixeira, Orthopaedist from Coimbra, involved in the activity of *Spine Centre* and *Urgicentro* among others.

This text was a perfect opportunity to experience the breadth of the tasks involved in translations, far beyond the stereotypical idea of just transmitting a message from a language to another. In fact, the final translation of this C.V. was the result of deep modifications of the source text, in order to improve its general aspect, contents and professionality. The *Skopos* of the translation was mainly professional

and formal, but at the same time the curriculum was meant to be included in a website accessed by clients as well; hence, it represents another case of a mixed stylistic genre and register (but, this time, more oriented to formality).

After reading the document, it was clear that the source text did not have a defined aim or orientation, therefore it was decided to contact the initiator to ask for information and preferences concerning the choice of register and of the translation's target. The initiator expressed a preference for a version that was mostly professional-oriented but not completely oblivious to the possibility that the general public could access it; hence, the decision was taken to alter the overall layout and tone of the text, through the various measures below listed.

The first step was to give a structure to the curriculum in order to make it easier to read and more professional even at a first glance. The source text, in fact, was inconsistent, half running text and half in list format: sections and subsections of the C.V. were listed confusingly without distinguishing clearly between a more fluent and a more structured, concise presentation. The only part that was kept in a more narrative style was the first section ("Dados pessoais") while the rest was translated in a compact, schematic way, indicating the chronological order and the various steps of Teixeira's academic and professional career, though organised rather unsystematically. More specifically, paragraphing was redefined in the translation, and all dates corresponding to career/training steps were put in the first column. Memberships and awards were organised in lists, with the help of graphics (fonts, letter sizing, bulleted points, spacing). The general aim was to make the whole curriculum more intelligible and all the sections easier to identify while scrolling the text.

After this fundamental initial step, the focus moved onto the contents, and the research of many medical terms related to medical training, practice, conferences and medical activity in general. It was also fundamental to search for the meaning of every acronym included in the C.V., to translate it correctly when a translation was available, or at least explain it in order to make it understandable in English. For instance, the acronym "F.M.U.C." could not be inferred by a reader based outside Portugal, and so it was written in the extended form and fully translated (Faculty of Medicine, University of Coimbra). The same happened with the acronym HUC (Hospitais Universitários de Coimbra – University Hospitals of Coimbra). On the other hand, the text also includes

many other names of local institutions with which the target reader would not be familiar, for example: SAMS (Serviços de Assistência Médico Social) do posto médico de Guarda; INEM (Instituto Nacional de Emergência Médica); VMER (Viatura Médica de Emergência e Reanimação) and AAC (Associação Académica de Coimbra). These were translated literally in English for the sake of accuracy and reliability.

Once again, the choice of the BE spelling was confirmed as far as the technical terms were concerned, but, for this file, there was also another aspect to be considered. In fact, one of the interesting issues throughout the translation of the doctor's Curriculum Vitae was that the steps of his education and medical training had to be verified to understand the correspondance between the Portuguese and British education and professional system, in order to avoid miscommunication, mistakes, or confusion that could lead to an inefficient curriculum.

. It was not easy to find accurate equivalents in English of terms such as 'Internato Geral', 'Especialidade' and 'Assistente hospitalar' that would avoid *false friends* and give the correct idea of the training and career of the doctor. This because the medical career structure is different in UK and Portugal: the English trajectory consists of a Residency divided into an initial Foundation Programme, and a Specialty Training in a hospital specialty or in general practice, which ultimately lead to the position of Consultant or General Practitioner. The Portuguese medical post-graduation career path instead consists of a "Internato" divided in "Ano Comum" and "Área Profissional de Especialização". This system was kept into account especially in the translation of "Assistente hospitalar", position achievable after a post-graduation, corresponding to "Consultant" and absolutely not the equivalent of the English "Assistant", which suggests a position hierarchically inferior.

As far as the names of centres, clinics or places were concerned, some were maintained in Portuguese or transferred from one language to the other, others needed to be glossed (e.g. AAC – Coimbra University Student Association). Some terms implied instead the search for a cultural equivalent (a term of the target language corresponding in the target culture to the concept expressed in the source language) or a functional one (a culturally neutral word that conveys in the target language the idea expressed in the source text) (Newmark 1988: 82-83). "Assistente hospitalar", for instance, as already mentioned was translated as "Consultant" in English, with a

functional equivalent ("Assistant" would be a false friend from a professional and hierarchical point of view), while "Director geral" found its cultural equivalent in "Head".

Moreover, the grades awarded in the sections "University Education" and "Clinical Training", were not expressed in the source text through the English evaluation system, therefore two options were available: converting the value, or explaining it in order to make it intelligible even if not familiar. In this text, the second option was adopted, by adding a brief contextualisation (16.08 *out of 20*) in order to explain the Portuguese evaluation system.

Another clear use of functional equivalence, unrelated to technical vocabulary, was the translation of "Tuna de Medicina (a culturally-specific term), which was glossed with a an explanation ("Medical students' musical troupe").

As highlighted above through the various examples analysed, in these kinds of situation, the responsibility of the translator goes beyond accuracy on a mere linguistic level, but has cultural, and even legal implications, to guarantee that the content the client wants to convey is transmitted precisely and serves the aim it was created for. An inaccuracy in the translation of a term regarding the professional positions held by the Doctor (e.g. the translation of "Assistente hospitalar" previously mentioned) could lead to an underestimation or overvaluation of his career, with legal and professional consequences for the translator and commissioner as well. This can be seen as further evidence of the complexity of the job of the professional translator, interacting with many fields, not only the socio-cultural aspect of communicating in different languages.

1.3 THE BROCHURES

The last text translated in this group consists of four brochures about four different conditions requiring surgical interventions: lumbar stenosis, spinal disc herniation, herniated cervical disc and lumbar arthrodesis. Each section gives a brief explanation of the condition followed by a short description of the operation needed to solve the problem.

It should be pointed out that the translation of this text was greatly facilitated by the style and terminology research undertaken for the previous texts. It also clearly benefitted from all the issues earlier experienced and solved, that made it easier to identify possible difficulties and avoid translation problems. Besides this, the file presents a repetitive structure, in which only the first part is specifically related to the health condition to be cured, while the rest of each section consists of pre- and post-operative instructions and frequently-asked questions (FAQs) with their respective answers.

The text in general had to be translated with attention to details, in order to efficiently explain the procedures and reassure the reader about the professionality of the clinic offering the services. All technical terms were researched using on-line dictionaries and glossaries, and possible choices were compared to the terminology used in similar websites of English clinics. However, the target-readers of the brochures were not professionals or people specialised in the field of surgery, so the contents had to be written in a precise, accurate language that could at the same time sound familiar and colloquial to the future patient. For example, “analgésicos” was translated as “painkillers” instead of “analgesics”, and “surgery” was replaced by the more colloquial “operation”, to be more consistent in terms of register.

Instructions and procedures addressed the reader directly, and a useful translation strategy adopted in this case was to imagine the communication of the contents in a normal daily conversation with a person that needed the operations described. This was fundamental in the paragraphs containing instructions for the patient, who is addressed directly (the pronoun “you” was frequently inserted to engage the reader – .e.g. “No dia da cirurgia” was translated as “On the day of *your* operation”). Once again, these brochures were not simply scientific in tone, but rather sought to explain the technical contents to the general public for health tourism/marketing purposes. That is why the translation could not be too formal, because otherwise it would have sounded too cold and intimidating to the reader. As can be easily noticed, the whole text is scattered with reassuring information about the constant availability of medical staff for each and every step of the patient’s stay in the health centre, and every phase is described in detail, but in a warm, comforting way. The use of personal pronouns and structures, first of all the direct questions in

the FAQ section ("Onde e como vou acordar?" – "Where and how will I wake up?"), contributes to the effect, acting also as another sign of the low level of formality and technicality of the brochures.

Therefore, also in this case, as for the texts analysed in the previous sections, the *Skopos* of the target text deeply influences the translation strategy adopted, resulting in a translation focused on communication purposes and characterised by all the peculiarities of the hybrid genre of science contents combined with healthcare marketing needs.

CHAPTER 2

THE SCIENTIFIC ARTICLE

The article “Risco de queda e posturografia computerisada em amputados” belongs to the genre of scientific articles for cutting-edge research. Unlike the first group of texts analysed, it has a more restricted audience and aim, and is directly related to the academic and scientific world.

It consists of an article reporting the results of research on the correlation between fall risk and computed posturography in amputees (as the title clearly suggests), destined for publication in an international medical journal. It is related to the field of Orthopaedics, but studied from the point of view of Physical Medicine and Rehabilitation (Physiatry).

It is a tightly structured text, highly technical and formal, divided into different sections as typical of its genre: abstract, introduction, materials and methods, results, discussion, conclusions, bibliography, tables and figures.

The abstract had already been translated in English by the author, but was revised and slightly modified (especially as far as vocabulary was concerned) to make sure that it would be as accurate and professional as possible. For example, a key word for the article, “posturografia computerisada”, was translated in the source text as “computerised posturography”, which was replaced in the target text by the more accurate and commonly used “computed posturography” after terminology research and a comparison of the frequency of use of the two expressions. Besides that, minor grammar issues were corrected in the translation: for example, the source text presented a calque of the Portuguese use of articles (“Half of *the* lower limb amputees suffer[…], “*The* CP has previously[…]”, which were removed), and the structure of sentences were modified when needed (e.g. “The transtibial amputees who reported at least one fall in the previous year were 36.80%” became “36.80% of the transtibial amputees reported at least one fall in the previous year.”).

While for the Curriculum analysed in Section 3 of Chapter 1 the faithfulness and accuracy of the reproduction of the contents of the source text was an issue related to the legality and reliability of a professional document, in this case the translation of

the research article needed to preserve the contents of the source text in order not to convey wrong information that would affect the research itself from a scientific point of view. The process of the survey and data collecting had to be reported clearly, along with all numbers and variables involved. The register had to be kept formal and professional, and all the vocabulary very specific. Since the target reader is not the general public but international specialists in the area of Orthopaedics, this time the concern was to present the information as clearly and reliably as possible, in a well-structured final text in which all the passages of the research reported were identifiable and their contents translated in accordance with the norms of the genre.

The process of translating "Fall risk and computed posturography in amputees" highlighted many recurring issues faced by a non-native translator into English, of which the first was technical terminology. During the overall translation process, a strategy similar to the one above mentioned was adopted to accurately research all the names of tests, instruments and examinations found throughout the text, to make sure the spelling, the acronyms, and the terms were adequate to the context and the register of the article (e.g.. Timed-up-and-Go test, ROC curve, Activities-Specific Balance Confidence scale, Overall Stability index, etc.). It was also necessary to search carefully (once again, largely through comparison with similar articles available on line) all the topic-defining expressions recurring in the whole text, such as "fall risk", "fall history", "postural stability", "discriminatory capacity", etc.

Other difficulties were represented by the grammar of scientific discourse, characterized by nominalisations, impersonal verbal structures and specific collocations.

Nominalisation (noun phrases) was a major issue throughout the translation from Portuguese to English. It is a characteristic of scientific discourse (to which English adds the problem of pre-modification, absent in Portuguese grammar), which conveys a great amount of information through complex noun phrases who leave to the verb a mere linking function. Nominalisation thus helps keep the text concise and structured (there is always a head/main noun, to which pre- and post-modifiers refer), without interrupting the logical steps of the text with redundant structures. While in other languages, and in this case Portuguese, technical concepts may tend to be more wordy (using preposition and participle phrases or relative clauses), as noun phrases are used

but do not benefit from the resource of pre-modification, English manages to concentrate all the information required in a noun phrase, highlighting the difference between Portuguese academic style, more redundant, and the more synthetic English style. The difficulty related to nominalisation while translating this article was understanding how and when to pre- and post-modify, in order to ease the fluency and naturalness of the final outcome, aiming to a professional-looking, readable text. In fact, as Bennett states (2011: 189-210), with regard to the translation of Portuguese scientific texts into English:

> […]the English translator has to be attentive to the role that the particular nominalization is playing in the text at any given point. The first time a term is mentioned, it may be appropriate (depending upon its centrality to the argument and familiarity for the target reader) to translate it using the extended form, with the modifying information coming after the headword in the form of a relative clause, participle phrase or prepositional phrase; this makes explicit the relationship between the various parts, effectively defining the term for the reader. Once this has been done, the translator can thereafter resort to the more compact premodified form, which offers greater flexibility in the context of a complex argument.

In the process of constructing technical vocabulary, nominalisation helps convey the qualifying content in order to include, even in the most complex sentence, all the information needed to be communicated.

Some verb structures were part of the translating issues as well. First of all, the choice of verbs and their structures reflects the general impersonality of the article. The Portuguese text used mostly passive or reflexive forms ("Foi obtida uma amostra…", "Foram dadas instruções…, "Sabe-se que…") and existentials ("A manutenção do controlo postural é complexa e multifactorial...", "A posturografia computorizada (PC) é um método de avaliação objetivo..."), which were mostly translated into English by their grammatical equivalents (i.e. "A sample was obtained...", "It is known that...", "Computed posturography (CP) is an objective method of evaluation…"). In the few cases in which the source text opted for a personal structure, which can be a feature of Portuguese academic discourse (Bennett, 2010:23), the target text kept instead the choice of impersonality (e.g. "Também sabemos que as quedas nos amputados [...] – "It is also known that falls in transtibial amputees").

One technical problem facing the English translator is the matter of verbal fronting - inversion of the Subject-Verb (SV) structure, when the verb is placed at the beginning of the clause (Bennett, 2011:20) – used frequently with passive and reflexive forms in Portuguese scientific discourse (e.g. “Foi obtida uma amostra de conveniência composta por indivíduos amputados de membro inferior que recorreram à consulta externa entre Julho e Dezembro de 2014”; “Foram incluídos amputados unilaterais de membro inferior, com mais de 18 anos, com prótese há mais de 12 meses e com capacidade de marcha”). It is problematic because a sentence cannot begin with a verb in English; and when the subject is long and complex, it is difficult to reformulate without creating a “top-heavy” subject, considered bad style. The target text translated such sentences with a more familiar SV structure, using mostly passive structures (“A convenience sample was obtained, consisting of lower limb amputees that required outpatient consultation between July and December 2014”; “It included unilateral lower limb amputees, over 18 years old, that had had a prosthesis for the previous 12 months or more and were able to walk”).

The problem of collocation, instead, is related to vocabulary, in the way that it regards how words connect one to another. Some connections are stronger (more restricted and limited) than others. Identifying the adequate combination of words makes the text more fluent and communicative, thereby providing a more professional target text. For example, one of the doubts concerned the translation of “auxiliar de marcha”: while at first it was translated in the target text as “walking support”, which is understandable and grammatically correct, the right collocation, later chosen to replace the first option, was “walking aid”.

Another important aspect of the process was the reproduction of all numbers: while in Portuguese decimal numbers are written with commas (e.g. 54,30%), English separates numbers with a point (54.30%). This was a detail to be taken into consideration while working on the target text.

It is fundamental to understand that, as for the translation of the curriculum vitae in the first group of texts, accuracy is not only a linguistic matter, but it implies consequences, in this case on the divulgation and study of the research translated, both from a scientific and a legal point of view (also for the translator possibly responsible of the inaccuracy).

The translation of this article also pointed out, even more than the first group of texts analysed, the correlation between ELF and scientific translation. In fact, in a globalised world where every local content needs to be translated to be comprehensible at an international level, English is not strictly related to a specific grammar or culture, and is continually modified by the contribution of its users from all over the world. More specifically, in the world of scientific research, where local researchers, in this case from a Portuguese environment, try to disseminate their work worldwide, ELF is a codified way of transmitting information, shared by the scientific community, with different characteristics than the English as a British or American varieties strictly speaking.

The decisive expression that highlighted this concept was the use of the phrase "in the *present* study". While the adjective "present" was chosen spontaneously by the translator, because it had been found in other similar medical articles previously read and therefore it had been associated to a typical recurring expression of the genre, a native English speaker would use "in *this* study" instead. This shows how many expressions or constructions that native speakers would not use are nowadays widespread in scientific discourse and accepted as legitimate. The frequency of such NNES expressions in scientific discourse has meant that they have become completely acceptable to the international community, which once again, is more focused on a communication of scientific contents than on achieving a native-speaker level of proficiency.

The translation of "Fall risk and computed posturography in amputees", in addition to offering a commentary on the issues involved in translating cutting-edge research articles into English, also serves as an introduction to the following chapter as a proof (albeit limited) of the significance of ELF in the globalized world and its implications for translation and translator training.

CHAPTER 3

ENGLISH AS A LINGUA FRANCA (ELF) AND TRANSLATION

The decision to dedicate a chapter of this Project to a discussion of English as a Lingua Franca and its relationship with translation acquires a particular significance considering the status of the translator of these texts, who is not a native speaker of either English or Portuguese, therefore fully included in the definition of the international user of ELF.

The experience of the practical translation of the texts analysed in the previous chapters serves as a concrete basis for the evaluation of the influence of English in the field of scientific and technical translation, its peculiarities and the innovations introduced nowadays by and in the international community of ELF speakers and professionals. It also serves as a focus for a discussion of the theories concerning the relationship between ELF and translation, and the implications for translator training.

3.1 ENGLISH AS A LINGUA FRANCA

First of all, it is necessary to define and contextualise briefly English as a Lingua Franca (ELF), in order to fully understand the width of the topic and of its interactions with various language-related fields, especially translation. According to theorists such as Jenkins (2007), Mauranen et al. (2009) and Seidlhofer (2011), ELF is not a sub-category of English, or a hierarchically inferior variety compared to the standard British or American norms – a stereotype still hard to fight. It is instead the mirror of natural language evolution in a world characterised by globalisation and the consequent need to establish communication among people from different countries and cultures. This communication is made possible by the English language, nowadays spoken and taught worldwide. This is the context of action of ELF, which corresponds to the necessity of finding an international variety of English that overcomes boundaries of interaction in all fields, especially academic and professional ones (on which this Project is focused).

It is true that standard British or American English – defined as the variety spoken by natives - is still acknowledged as the goal to achieve in language learning and writing, and overshadows with its authority the one spoken by non-natives. However, the current reality shows that native English speakers are greatly outnumbered by non-natives (Peterlin, 2013:195), and this is giving ELF an increasing power of determination of the norms of spoken and written communication. This should not, though, lead to the mistake of considering the two varieties as opposed to each other: in fact ELF does not exclude standard English from its system, and it does not aim to identify one or the other variety as correct or incorrect, since its point of view is more that of linguistic variations (Jenkins, 2011:927-928), legitimate or not. It would also be wrong to consider ELF as a failed attempt to master English language to native-speaker level, resulting in a fallback solution for the sake of communication. Its approach is in fact more pragmatic, as it is oriented to find a means of interaction that allows the divulgation of information in the clearest and most efficient way possible (Jenkins, 2011; Seidlhofer, 2009; House, 2003).

3.2 ELF AND ITS INTERACTION WITH ACADEMIC DISCOURSE AND TRANSLATION

According to Jenkins (2011:928), every proficient English speaker contributes to the construction of ELF and of its norms, in an accelerated process of language alteration always focused on communication effectiveness. In the academic world this is part of the construction of a shared background for the divulgation of material at an international level. As Mauranen points out in a letter to the Times Higher Education Supplement (21 September, 2007)[8], in fact:

> International academic communities communicate in largely non-native groups. What counts is clarity, effectiveness and contextual appropriateness of communication. While high academic standards are vital, native-like English is not.

[8] As found in Jenkins, 2011: 932.

The non-native groups interacting through ELF in academic contexts contribute actively to the innovation of English towards the goals expressed by Mauranen's statement.

Non-native speakers of English (NNES) have at their disposal multiple resources, used to ensure clarity, drawn both from English and their native languages. Their lack of attachment to strict standard language norms eases comprehensibility in the international context, as they tend to move towards a more accommodating and open form of interaction. As Jenkins (2011:928) states:

> ...they [non-native speakers] prioritise communicative effectiveness over narrow predetermined notions of 'correctness'. In other words, their use of English is fluid and flexible, responding adeptly to the nature of the particular communicative context in ways that native English speakers, with their stronger attachment to native English norms, tend to find more challenging.

It can be clearly seen then how the diffusion and growing importance of ELF in the academic contexts challenges all stereotypes on the authority of standard English language.

This explains the difficulties in accepting the changes introduced, if we consider that the world of education and translation still looks most of the time at standard English as the "correct" language to be taught and taken as a point of reference. It is still believed in fact in some cases that native speakers have a certain advantage with regard to academic writing, due to the authority still exercised by standard English norms (Jenkins, 2007: 933-934). This, though, contrasts with the actual situation of academic journals, which are dominated by contents produced by non-natives for non-natives (Jenkins, 2011: 927).

Another argument supporting the diffusion of ELF has its basis in the characteristics of English academic discourse (EAD) itself. As a highly codified form of writing, EAD can be acquired quite easily by non-native speakers. Given that its main purpose is to transmit information to other members of the discourse community, non-native speaker skills are not essential. This is because most academic interactions happen nowadays on an international rather than a national basis, and "the majority of uses of English occur in contexts where it serves as a lingua franca, far removed from its native speakers' linguacultural norms and identities" (Seidlhofer 2001:133-34).

It can be inferred from this that the whole issue of ELF implies obviously a deep interaction with the field of translation, even if, as Taviano (2013:155) points out, much has yet to be studied on it and acknowledged. In her article "English as a Lingua Franca and Translation", she makes a digression on the characteristics of this relationship, contextualising and commenting on the growing spread of ELF internationally. Even though at a first glance translation and ELF could seem to follow different paths, one towards preserving identities and the other towards the dominance of just one language, the situation is much more complex. As House (2009:571-574) points out, ELF in fact does not represent a threat to national cultures as it acts on a communication level, and not on an identification one.

Indeed, the very concept of *a lingua franca* goes beyond the idea of a culturally-bound language, and since it is a fundamental aspect of academic and specialised writing it is impossible for a translator not to acknowledge its presence and its importance. An important step in this acknowledgment is understanding that, when interacting with ELF, the target audience is not always a culturally-specific one, but more frequently an international spectrum of various communities and backgrounds, who express themselves through what Taviano calls "hybrid texts"(2013: 160). These are:

> ...the product of negotiations between different cultures and languages, resulting from overlapping rhetorical and discourse norms, created by and addressed to a supranational community, in which the traditional distinction between source text/culture and target text/culture is no longer applicable.

The growth in the use of ELF for academic purposes therefore also supports the idea that it is possible to translate into and from languages that are not part of our native linguistic and cultural domain, moving the attention from the concept of native proficiency to the goals of intelligibility and the establishment of a common ground for interaction. While the traditional idea of translation involves the transfer of content to a native language, the peculiarities and implications of ELF in the current reality show how this can no longer be a dogma. This is especially true in the area of academic and technical discourse written in English, which, as discussed above, is subject to conventions that do not require the status of native speaker and can be mastered fully by a trained professional.

3.3 ELF AND THE TRANSLATION OF SCIENTIFIC TEXTS

Some characteristics of ELF can be noticed in the translations presented in the first section of this Project (especially the research article). All the texts are related to English as a Lingua Franca, as they have been translated by a non-native English speaker for non-native English speakers, but they are affected by this in different ways.

The scientific article which has a strong referential function, since it refers to a particular world and implies a certain level of knowledge shared also by the receiver of the text (Nord, 2006: 136), allows a greater expression of ELF's characteristics. In fact, it presents the results of scientific research, which by nature is not culturally embedded and aspires to universality. It is highly codified, dominated by nominalizations and impersonal verb structures, which allow clear transmission of information beyond possible cultural implications. In fact, in the struggle of local researchers from (in this case) a Portuguese environment to divulge their work internationally, English as a Lingua Franca (written by a non-native, translated by a non-native, and with a mainly non-native target readership) is the acknowledged code.

That is why a trained NNES translator can and should have access to the professional world of scientific translation, and be able to carry out such tasks with accuracy and professionalism, without suffering prejudices based on obsolete views of language.

The websites are characterised by the need to neutralise local references and remove cultural overlay (see the translation issue regarding the names of institutions analysed in the comment section), but they are still quite culturally embedded if compared to the scientific article, given the importance of their phatic and appellative functions.[9] In fact, if the text is to fulfil its *Skopos* of attracting an international clientele to the clinic, then the way the reader is addressed and the tone adopted need to be adapted to international norms. As they are more related to the area of marketing and health business, they would be expected to be more personal and conversational in English than they are in Portuguese.

[9] As Nord (1997:135) affirms, the phatic function "relies on the conventionality of the linguistic, non-linguistic and paralinguistic means used in a particular situation", while the appellative function instead is designed to "induce them [the receivers] to respond in a particular way" .

The translation of the curriculum vitae also aims to neutralise cultural references, towards a easier intelligibility of the target text, without the obstacle of culturally-specific references (e.g. the academic and professional qualifications listed throughout the text). Its function is mainly referential, but also slightly phatic, and this influences the translation strategy in the choice of the level of formality and technicality and of the focus of the target text (sharing specific information, beyond limiting cultural implications).

To sum up, the role of non-native English speakers is fundamental in the current translation market, as it expresses the characteristics and necessities of the international community itself. In particular, scientific and technical discourse lend themselves better to the interaction with ELF for the reasons explained throughout the chapter.

It should be therefore acknowledged that the growing importance of ELF internationally brings great innovations to the theory of translation and modifies its core concepts. For this reason English as a Lingua Franca should be analysed more in detail and introduced as a more present subject of study in translator's training.

CONCLUSION

The aim of this Project was to explore from both a practical and theoretical point of view the implications of the interaction between the world of technical translation and the diffusion of English as a Lingua Franca as a means of international communication, in order to demonstrate that non-native English speakers can achieve full proficiency as technical and scientific translators into English.

Two different groups of texts were translated and analysed, one belonging to the area of health-related marketing, and the other to cutting-edge medical research. The substantial difference between the two groups allowed an interesting digression into the various aspects of the relationship between science and translation, covering issues related to language, translation strategies and difficulties, the role of the translator and the skills involved in the translation of the genres considered.

While the whole project helped identify the characteristics and conventions governing scientific translation in general, the research article "Fall risk and computed posturography in amputees" probably lent itself best to translation by a NNES translator for the reasons given above. On the other hand, the first group of texts translated (*Spine Centre* and *Urgicentro*'s websites) contributed to the project by showing the peculiarities of the interaction of science with marketing and their consequences on the translation process and requirements.

In all cases, the translation strategy adopted was target-oriented (focusing on the reader, purpose of the translation and context of reception). *Skopos theory* is implicitly present in the commentary of the texts analysed, as it supports the belief in the need to always keep in mind the aim of the translation (as can be inferred from the name of the theory) and to whom it is addressed, in every decision made.

Focusing on the target text in this project also highlights the relationship between ELF and translation. Through the direct and concrete experience of the translations, the whole project is oriented towards demonstrating that English scientific discourse can be approached professionally by a non-native speaker of English, because, as ELF, it is concerned primarily with the clear transmission of

content. As explained above, the international community in fact uses ELF (and translation into it) for communication, aiming to reach the broadest possible audience.

It is hoped that the practical component of this project will reinforce the claim that the distinction between native and non-native speakers of English no longer constitutes a valid argument in the evaluation of a professional translator in the scientific market. With the growth and spread of the use of ELF in academic and non-academic areas and the acknowledgment of it as a proper English variety and not a failed attempt towards language (Jenkins, 2011:927) the status of NNES translators should also improve, enabling them to benefit from a more open, pluricentric and internationally focused approach to English as a language expanding far beyond cultural boundaries.

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ANNEXES

SOURCE TEXTS

1.THE WEBSITES

1a. SPINE CENTRE

HOME

No seguimento ideológico da existência de um centro de cirurgia da coluna no grupo SANFIL Medicina, e baseado na diferenciação técnica e na experiência profissional dos seus recursos humanos, surge o SPINE CENTER.

O SPINE CENTER traz um conceito inovador e inédito, procurando integrar o que de mais moderno existe no diagnóstico e tratamento médico-cirúrgico da coluna vertebral, dando especial realce a técnicas cirúrgicas minimamente invasivas.

QUEM SOMOS

Missão

O SPINE CENTER tem por missão o estudo e tratamento das diversas patologias da coluna vertebral, tendo sempre no seu centro o doente.

Visão

O SPINE CENTER pretende ser um centro, reconhecido a nível internacional, por prestar os melhores e mais inovadores cuidados médicos da patologia da coluna.

Objectivos

É nossa ambição:

Diferenciar a nossa acção com constantes avanços tecnológicos;

Promover a eficiência;

Satisfazer todas as necessidades dos nossos doentes.

BLOCO OPERATÓRIO

O bloco operatório é constituído por 3 salas cirúrgicas equipadas com a mais moderna tecnologia.
Mesas operatórias totalmente eléctricas e radiotransparentes, fluoroscopia, sistema de neuronavegação com imagiologia intraoperatória 3D (O-arm), microscópio topo de gama, recuperador de sangue para auto-transfusão (cell-saver) e equipamento de aquecimento de soros.
Possui ainda uma unidade de recobro para vigilância do doente no período pós-operatório.

INTERNAMENTO

Todos os quartos estão equipados com aparelhos de ar condicionado e televisão.
Os telefones inseridos nos quartos permitem estabelecimentos de ligações para o exterior. Em todos os quartos, junto à cabeceira da cama, existe uma campainha que toca na sala de enfermagem.
Se necessitar não hesite, de imediato terá uma enfermeira disponível no seu quarto. Relativamente às refeições, a enfermeira responsável informará das escolhas possíveis e tentará satisfazer as suas opções, ao seu gosto.

CONSULTAS

O SPINE CENTER dispõe de modernas instalações e está localizado na Avenida Emídio Navarro, nº 17, 5.º andar.

POLITICA DE QUALIDADE

O compromisso do SPINE CENTER para com a QUALIDADE implica:
Conquistar permanentemente um nível de resposta total e eficiente para com os requisitos e expectativas dos Clientes, obtendo a sua plena satisfação;
Motivar todos os Colaboradores para a coordenação de esforços no caminho para o sucesso do Sistema da Qualidade, como valor acrescentado da empresa e como realização pessoal de cada um, fomentando um bom Ambiente de Trabalho;

Assegurar infraestruturas e equipamentos adequados e ajustados à realidade exigente do mercado, com vista à melhoria contínua de eficiência do Sistema Integrado;

Promover a cooperação activa com os Fornecedores e subcontratados, que deverão ser selecionados consoante os nossos critérios de Qualidade;
Optimizar custos (evitando desperdícios), rentabilizar os recursos (através da contínua sistematização dos processos), garantindo o equilíbrio económico-financeiro da Empresa e o seu desenvolvimento sustentável;
Cumprir a legislação, os regulamentos aplicáveis e outros requisitos subscritos, assumindo desta forma as responsabilidades sociais e actuando de forma responsável;

Comprometer todos a colaborarem para uma melhoria contínua do Sistema da Qualidade quer através da qualidade dos serviços prestados quer através da modernização dos processos.

O SPINE CENTER foi em Janeiro de 2015 a primeira unidade de cirurgia de coluna em Portugal certificada pela ISO 9001, no âmbito do atendimento clínico para diagnóstico e tratamento da patologia da coluna vertebral. A certificação foi atribuída pela Bureau Veritas, empresa com larga experiência na certificação de unidades de saúde. Esta certificação significa que a empresa cumpre a sua prática clínica de forma sistemática e rigorosa sempre numa lógica de melhoria continua e eficiência tendo como principal prioridade a satisfação do cliente.

CIRURGIAS

O SPINE CENTER procura estar sempre na vanguarda da tecnologia, sendo o 1º centro em Portugal com cirurgia por neuro-navegação e controlo imagiológico 3D no intra-operatório.

Cirurgia da hérnia discal e da compressão nervosa
Artrodese da coluna vertebral
Artroplastia do disco intervertebral
Fixação Dinâmica da coluna lombar
Outras técnicas cirúrgicas
Cirurgia por neuro-navegação

TRATAMENTOS

Pela complexidade e pluridisciplinaridade de que se reveste a patologia da coluna vertebral, o doente será sempre avaliado na sua vertente psicossomática e conforme a necessidade de cada caso.

Procedimentos para dor de origem discal
Terapêutica para dor de origem facetária
Terapêutica para dor com origem nas raízes nervosas
Outros procedimentos para dores crónicas da coluna

EXAMES

Em parceria com a Sanfil Medicina, o SPINE CENTER tem ao dispor dos seus utentes os mais avançados meios complementares de diagnóstico e tratamento.

Analises Clínicas
RX Digital
TAC Multicorte
Ressonância Magnética
Osteodensitometria
Electromiografia

PATOLOGIAS

Prevenção é o primeiro passo.
Abaulamento Discal
Degenerescência Facetária
Espondilolistesis
Estenose do canal vertebral
Hérnia de disco e Degenerescência Discal
Escoliose
Cifose
Fractura osteoporótica
Fractura de origem traumática
Lesão tumoral da coluna vertebral

MARCAÇÕES

Marque aqui a sua consulta
As datas e horas pretendidas terão de ser validadas pelo SPINE CENTER.

Nome

Email

Telefone:

Qual a data pretendida

Qual a hora pretendida

A sua mensagem

INFORMAÇÕES

Está com dúvidas?
Se tem alguma dúvida não hesite em contactar o SPINE CENTER. Prometemos ser breves na resposta a todas as suas dúvidas.
T. 239 098 665 | Tlm. 915 005 400 | geral@spinecenter.pt

FORMULÁRIO DE CONTACTO
O seu nome (obrigatório)

O seu email (obrigatório)

Assunto

A sua mensagem

A sua opinião é importante
Se tem alguma sugestão ou um pedido de esclarecimento a fazer não hesite em contactar o SPINE CENTER.
T. 239 098 665 | Tlm. 915 005 400 | geral@spinecenter.pt

FORMULÁRIO DE CONTACTO

O seu nome (obrigatório)

O seu email (obrigatório)

Assunto

A sua mensagem

UTENTE INTERNACIONAL

O SPINE CENTER tem um departamento específico criado para o atendimento do utente internacional. Esse departamento dará apoio em:
Marcação de consultas, exames, preparação para o internamento e cirurgia;
Contacto com agências de viagens para a deslocação e estadia;
Após a alta médica, apoio na recolha, entrega ou envio de relatórios e resultados de exames.

FORMULÁRIO DE CONTACTO

O seu nome (obrigatório)

O seu email (obrigatório)

Assunto

A sua mensagem

TESTEMUNHOS

"Grande equipa de médicos liderados pelos Dr Luís Teixeira. Força e Parabéns!"
Jorge Neves

"Parabéns! Mais um passo importante para os doentes, para a Saúde, para a Sanfil mas também para Portugal. Obrigada. Concerteza este é o resultado de muito trabalho, investimento pessoal e abnegação. Felicitações à equipa."
Sara Alegre

"Já fui atendida neste centro o qual recomendo, muito bem atendida pelo Dr Luis Teixeira que também recomendo bastante. Um excelente ortopedista."
Cristina Mendes

"Parabéns ao ilustre Dr. Luís Teixeira e toda a equipa médica que o acompanha, pelo magnífico trabalho realizado, do ponto de vista da cirurgia da coluna em 3D. Abraço amigo e tudo de bom para toda a equipa."
Prata Messias Tapada

"Dr. Luís Teixeira, e Dr. Tiago Lima, excelentes profissionais. Parabéns."
Adelaide Veiga

"Não quero que o ano 2013 termine sem deixar aqui bem expresso o meu maior agradecimento ao Dr. Luís Teixeira. A competência, o profissionalismo, a humanidade e o carinho com que fui tratada NUNCA serão esquecidos por mim. Guardarei, no meu coração de mãe, um cantinho para si, SEMPRE."
Luisa Maria Pereira

"Venho por este meio agradecer a toda a equipa médica e auxiliar do modo como me receberam durante a minha estadia no Spine Center.
Durante todo o meu tempo de internamento tive o privilégio de ser cuidado por pessoas com alto profissionalismo, carinho e atenciosas.
Agradeço ao Dr. Luis Teixeira pelas melhorias que já sinto com apenas uma semana passada após a cirurgia à coluna.
Não posso deixar de dar cumprimentos ao pessoal da cozinha pois a comida é muito boa.
A todos o meu muito obrigado pela simpatia."
Nelson Ruivo

"Agradeço ao Dr. Luís Teixiera e a toda a equipa do Spine Center por tornar uma possibilidade em realidade. Em meu nome e de toda a minha família o meu muito obrigado."
João Duarte

SPINE ACADEMY

Apresentação

A Spine Academy surge da consolidação e da aposta do Spine Center na formação e investigação.
A casuística que possuímos, o know-how que adquirimos e a equipa que nos compõe levou-nos a iniciar este projecto de formação que permite que jovens ortopedistas e neurocirurgiões façam um treino cirúrgico de qualidade nas nossas instalações. Estamos a desenvolver em conjuntos com várias instituições nacionais parcerias no sentido de estabelecer um programa bem organizado que permita a sua acreditação a nível internacional.

Conselho Cientifico

Dr. Bruno Rodrigues
Médico Neurologista | Docente da Faculdade de Medicina da Universidade de Coimbra
Prof. Dra Helena Teixeira
Professora da Faculdade de Medicina da Universidade de Coimbra

Prof. Dr. Joaquim Viana
Médico Anestesiologista| Professor da Faculdade de Medicina da Universidade da Beira Interior

Prof. Dr. José Casanova
Médico Ortopedista| Professor da Faculdade de Medicina da Universidade de Coimbra

Prof. Dr. Luís Cunha
Médico Neurologista | Professor da Faculdade de Medicina da Universidade de Coimbra

Dr. Luís Teixeira
Médico Ortopedista

Dra. Margarida Oliveira
Médica Reumatologista | Docente da Universidade da Beira Interior

Dr. Pedro de Melo Freitas
Médico Neuroradiologista

CONTACTOS

MORADA

SPINE CENTER – Cirurgia da Coluna
Avenida Emídio Navarro, Nº 17 – 5º Esquerdo

3000-150 Coimbra
Portugal

CONTACTOS
Telefone: (+351) 239 098 665 | 915 005 400
mail: geral@spinecenter.pt

1b. URGICENTRO

HOME

Quando a saúde não pode esperar
A Urgicentro surge no ano 1988 com uma oferta diversificada e multidisciplinar de serviços de saúde destinada a satisfazer as necessidades dos seus Utentes, disponibilizando para isso um atendimento de grande qualidade e profissionalismo.

ATENDIMENTO URGENTE
A Urgicentro tem ao seu dispor um conjunto de médicos de Clinica Geral
todos os dias das 8 às 20 horas.

ESPECIALIDADES
Com um corpo clínico experiente, temos um vasto conjunto de especialidades num espaço só.

MEDICINA DO TRABALHO
Oferecemos um serviço que assegura e promove a vigilância da saúde dos seus colaboradores.

SERVIÇOS

EXISISTIMOS PARA O SERVIR
Aqui poderá encontrar todos os serviços que precisa.
Se é empresário, estamos ao seu lado para dar qualidade de vida à sua empresa e aos seus funcionários. Se é individual, procuramos ir ao encontro das suas necessidade.

ATENDIMENTO URGENTE
A Urgicentro tem um serviço de Atendimento Urgente diário, das 8 às 20 horas, em parceria com a Casa de Saúde de Santa Filomena, onde os utentes têm acesso a um atendimento de grande qualidade, com tempo de atendimento bastante curto.
- Médicos de Clínica Geral em permanência e das várias especialidades, em regime de chamada.
- Exames de Diagnóstico na Hora (Raios X, Ressonância Magnética, TAC, Ecografia, Análises Clínicas, entre outros)
- Internamento e Bloco Operatório

ESPECIALIDADES

Cardiologia
Dr. João Cristóvão

Cirurgia Geral
Dr. Henrique Ferrão

Cirurgia Plástica
Dr.ª Fernanda Sanches

Cirurgia Vascular
Dr. Ricardo Vale Pereira

Clinica Geral
Prof. Dr. Frederico Teixeira
Dr.ª Ana Coelho
Dr.ª Fernanda Costa
Dr.ª Fernanda Leite
Dr. Francisco Araújo
Dr. João Crisóstomo Borges
Dr. Vitor Costa

Dermatologia
Dr. Álvaro Machado

Gastrenterologia
Dr. Hermano Gouveia
Dr.ª Ernestina Camacho
Dr. Rui Gradiz
Dr.ª Zita Romão

Ginecologia/Obstetrícia
Dr.ª Clara Coelho
Dr.ª Sofia Franco

Medicina no Trabalho
Dr. João Crisóstomo Borges
Dr. João Viegas
Dr. Vitor Costa

Neurologia
Dr.ª Ana Sofia Morgadinho

Oftalmologia
Dr.ª Helena Azevedo

Ortopedia
Dr. Amilcar Valverde
Dr. António Figueiredo
Dr. Armando Pires
Dr. Edgar Rebelo
Dra. Isabel Simões
Dr. João Freitas
Dr. Luís Teixeira

Dr. Manuel Cândido
Dr. Pedro Carvalhais
Dr. Pedro Matos
Dr. Rafael Pombo

Otorrinolaringologia
Dr.ª Maria José Bastos

Pediatria
Dr.ª Conceição Nunes
Dr Luís Silva Pinto

Psicologia Clínica e Infantil
Dr.ª Ana Isabel
Dr.ª Vanda Clemente
Dr.ª Vera Lucia Silva

Psiquiatria
Prof. Dr. António Macedo

Terapia da Fala
Drª Alexandra Figueiredo

Urologia
Dr. Henrique Igreja Dinis

EXAMES COMPLEMENTARES
- Raios X
- Ressonância Magnética
- TAC
- Ecografia
- Análises Clínicas
- Electrocardiogramas em repouso
- Electrocardiograma com Prova de Esforço
- Audiometria Tonal
- Impedansimetria s/ e c/ Reflexos
- Laringoscopia Indirecta
- Ecografia Ginecológica Endovaginal
- Colposcopia c/ Biopsia de Colo e Vulva
- Análises Clínicas: Sangue e Urina
- Check Up'

MEDICINA NO TRABALHO
A URGICENTRO oferece às empresas um serviço que assegura e promove a Vigilância da saúde de seus colaboradores. A Prevenção de Riscos profissionais e melhoria da qualidade do ambiente de trabalho.

Realização de Exames Médicos:
- De Admissão
- Ocasionais
- Periódicos

Os exames podem ser realizados nas instalações da empresa, ou, em alternativa, nas instalações da Urgicentro.
A URGICENTRO disponibiliza ainda às empresas e seus colaboradores Serviços de cuidados de Saúde Primários: Medicina Curativa; Enfermagem, Campanhas de Vacinação,...
A URGICENTRO concede aos Empresários, Trabalhadores e seus Familiares descontos de 20% em todos os seus serviços de saúde: Consultas de Clínica Geral; Consultas de Especialidade; Exames Complementares.

ACORDOS

Os acordos que precisa
A Urgicentro procura ir ao encontro do seu utente.
Nesse sentido, procuramos oferecer o maior e mais abrangente número de acordos para a saúde ser uma relagia e não uma preocupação.

CONTACTOS

Estamos ao virar da esquina
Procuramos ir ao encontro de quem precisa de nós.
Estamos situados no coração da cidade de Coimbra, contudo, caso necessite, deslocamos uma equipa de especialialista a sua casa ou à sua empresa.

1c. CURRICULUM VITAE

DADOS PESSOAIS

Filho de Médico Professor Universitário e de uma Investigadora de Química nasceu na Cidade de Lourenço Marques em Moçambique em 23 Janeiro de 1973.

Viveu em Coimbra desde os seis meses e foi a cidade dos estudantes que o viu crescer até chegar à Universidade.

Pai de dois filhos reside actualmente em Coimbra onde exerce a maioria da sua actividade profissional.

CURRICULO

ENSINO UNIVERSITÁRIO

Conclusão da Licenciatura em Medicina pela Faculdade de Medicina da Universidade de Coimbra em 31 de Outubro de 1996 com a informação final de Bom com Distinção com 16,08 valores.

FORMAÇÃO CLÍNICA

Internato Geral realizado nos Hospitais da Universidade de Coimbra (1997-1998)
Obtenção da Especialidade de Ortopedia e Traumatologia pelos Hospitais da Universidade de Coimbra em Fevereiro de 2006 com a nota final de 19,8 valores.
Obteve o European Spine Course Diploma – Eurospine Foundation - em 2014 (Primeiro Médico Português com o Diploma Europeu de Cirurgia da Coluna)

FORMAÇÃO CLÍNICA COMPLEMENTAR

Realização de 25 cursos de pós-graduação ou de valorização profissional na área de ortopedia.
Realização de 18 cursos de pós graduação na área da coluna vertebral 14 dos quais realizados no estrangeiro em centros Europeus de referência.(The Royal College of Surgeons of England – Londres, Hospital Val Hebron, Barcelona, Faculdade de Medicina - Universidade de Barcelona, Kyphon, Universidade de Leiden- Holanda, AO Spine – Oberdorf, Suiça, Centro de Cirurgia de Minima Invasion , Cáceres, Espanha, etc.)
Realização de vários Estágios de Cirurgia da Coluna no Estrangeiro dos quais destacamos:
a)Centre for Spinal Studies and Surgery.- Queens Medical Centre - Nottingham. (Reino Unido) complementado pela frequência do "Postgraduate Spinal Surgery Teaching Programme".
b)Goodman Campbell Brain and Spine – St Vincent Hospital – Indianapolis (EUA) – Unidade Neurocirurgica dedicada a cirurgia minimamente invasiva

ACTIVIDADE CLÍNICA

Assistente Hospitalar eventual do Serviço de Ortopedia dos Hospitais da Universidade de Coimbra (Sector de Patologia da Coluna Vertebral) –2006.
Assistente Hospitalar eventual do Serviço de Ortopedia do Hospital Sousa Martins (com acordo inter-hospitalar com os Hospitais da Universidade de Coimbra)– Outubro de 2006 a Outubro de 2007 realizando actividade médico cirúrgica durante esse período em ambos os Hospitais.
Pediu exoneração da função pública em Outubro de 2007 tendo assumido funções de Médico Ortopedista e Responsável do Sector de Ortopedia do Hospital da Misericórdia da Mealhada (até Junho de 2009)
Manteve de 2007 até 2013 actividade médico-cirúrgica de Ortopedia em regime de prestação de serviços do Hospital Sousa Martins- Guarda, com actividade clínica semanal no Serviço de Urgência (traumatologia) e em actividade de consulta externa e actividade cirúrgica na área da patologia da coluna vertebral.
Mantém actividade Clínica no âmbito da consulta externa privada nos seguintes locais: Urgicentro (Coimbra- desde Outubro de 2006), Egiclínica (Guarda – desde Novembro de 2006).
Médico Ortopedista do quadro clínico do SAMS do Posto Clínico da Guarda (2007-2011)
Médico Ortopedista na Casa de Saúde Sta Filomena – Grupo SANFIL Medicina desde 2009 e Coordenador de Ortopedia do grupo SANFIL Medicina desde 2013
Médico Ortopedista e Director Clínico do Centro de Coluna de Coimbra (2010-2013)
Médico Ortopedista (e fundador) do Spine Center – Cirurgia da Coluna desde 2013 onde acumula funções de Director Geral. Efectuou em Junho de 2013, pela primeira vez em Portugal a primeira cirurgia da coluna vertebral guiada por Neuronavegação com controlo de imagem 3D. – Esta Unidade Médica Privada é actualmente a maior Unidade Privada Portuguesa de Cirurgia da Coluna Vertebral e recebeu em 2014 o Prémio Inovação atribuído pelo Diário As Beiras.

Realizou cerca de 7000 cirurgias ortopédicas na sua maioria na área da patologia da coluna vertebral sendo as suas principais áreas de interesse a Cirurgia Minimamente invasiva da Coluna, patologia traumática e tumoral da coluna vertebral.

ACTIVIDADES DIRECTIVAS

Membro do Conselho Nacional do Médico Interno da Ordem dos Médicos (de 1999 a 2003)
Membro da Direcção da Sociedade Portuguesa de Hidrologia e Climatologia Médicas (Secretário da Direcção 2005-2012)
Membro da Direcção do Colégio da Especialidade de Ortopedia da Ordem dos Médicos (2006-2009)
Director Clínico Adjunto do Hospital da Misericórdia da Mealhada (2007 -2008)
Director Clínico do Hospital da Misericórdia da Mealhada (2008-2009).
Director Clínico do Centro de Coluna de Coimbra (2009 – 2013)

Secretário Geral da Sociedade Portuguesa de Patologia da Coluna Vertebral (2012-2013)
Coordenador de Ortopedia do grupo Sanfil Medicina (desde 2013)
Director Geral do Spine Center – Cirurgia da Coluna (desde 2013)

ACTIVIDADE CIENTÍFICA

Total de 18 trabalhos publicados em revistas nacionais e estrangeiras.
Apresentação de 212 comunicações científicas em reuniões nacionais e internacionais.
Distinção com 8 prémios:
1º Prémio (Melhor Poster) do XXIII Congresso Nacional de Ortopedia e Traumatologia (2003)
1º Prémio (Melhor Poster) nas Jornadas para o Estudo da Ortopedia Infantil (2004)
1º Prémio (Melhor Comunicação Livre) nas Jornadas para o Estudo da Ortopedia Infantil (2004)
1º Prémio no Congresso da Sociedade Portuguesa de Patologia da Coluna Vertebral (2004)
1º Prémio (Melhor Comunicação) do XXIV Congresso Nacional de Ortopedia e Traumatologia (2004)
1º Prémio (Melhor Poster) do XXV Congresso Nacional de Ortopedia e Traumatologia (2005)
1º Prémio (Melhor Poster – Secção da Coluna Vertebral) do XXVI Congresso Nacional de Ortopedia e Traumatologia (2006)
1º Prémio (Melhor Poster) do Congresso da Sociedade Portuguesa de Patologia da Coluna Vertebral (2012)

ORGANIZAÇÃO DE REUNIÕES CIENTÍFICAS:

Presidiu à Organização das Jornadas de Actualização Terapêutica em Patologia Osteoarticular para Clínicos Gerais realizadas no Hotel das Termas da Curia no dia 27 de Janeiro de 2004.
Colaboração na organização e participação como Monitor no 4 Cursos de Dissecção em peças naturais para alunos do 1º ano de Medicina e Medicina Dentária da F.M.U.C. - Instituto de Anatomia Normal da F.M.U.C. - 2005, 2006, 2007 e 2008
Organizador (Director executivo) do 1º Curso de Cirurgia da coluna Lombar para Enfermeiros - Hospital Misericórdia da Mealhada - 28 e 29 de Setembro de 2007
Organizador do 1º Curso Prático de Instrumentação posterior da coluna lombar Hospital Misericórdia Mealhada / Instituto de Anatomia Normal da Faculdade de Medicina da Universidade de Coimbra - 10 de Maio de 2008
Presidente da Comissão Organizadora do II Encontro Ibérico de Patologia da Coluna Vertebral – Coimbra - 2011
Membro da Comissão Organizadora do Congresso Nacional da Sociedade Portuguesa de Patologia da Coluna Vertebral – Monte Real - 2012
Membro da Comissão Organizadora do I Simposium de patologia da Sociedade Portuguesa de Patologia da Coluna Vertebral – Viseu 2013
Presidente da Comissão Organizadora do 1º Encontro Ortopédico da Zona Centro – Sanfil Medicina – Monte Real 2013

Membro da Comissão Organizadora (Chairman) do I curso de técnicas microcirúrgicas raquidianas – Vila do Conde - 2013

SOCIEDADES PROFISSIONAIS OU CIENTÍFICAS

É Membro de 11 Sociedades Profissionais ou Científicas Nacionais tendo tido funções dirigentes em duas destas sociedades:
Ordem dos Médicos – cédula profissional nº 36946
Sociedade Portuguesa de Ortopedia e Traumatologia
Associação Portuguesa de Avaliação do Dano Corporal
Associação Portuguesa de Medicina de Emergência
Sociedade Portuguesa de Patologia da Coluna Vertebral
Sociedade Portuguesa de Hidrologia e Climatologia Médicas
AO Spine Society
Sociedade Anatómica Portuguesa
North American Spine Society (NASS)
Eurospine Foundation
Argospine – Association Européenne des Groupes d'études pour l'ostheosynthese rachidienne

ACTIVIDADE REDACTORIAL

Redactor da Revista Portuguesa de Ortopedia e Traumatologia (2005-2009)

ACTIVIDADE DOCENTE

Assistente Convidado da Disciplina de Anatomia da Faculdade de Medicina da Universidade de Coimbra (2004- 2012).
Responsável das aulas teóricas e práticas de Anatomia Humana Geral da Licenciatura em Medicina Dentária da Faculdade de Medicina da Universidade de Coimbra (2007-2012).
Responsável da Disciplina de Envelhecimento Anatómico do Mestrado de Geriatria da Faculdade de Medicina da Universidade de Coimbra desde a ano lectivo 2008/2009
Convidado a ministrar aulas práticas de Ortopedia aos alunos do 5º ano da Licenciatura em Medicina da Faculdade de Medicina da Universidade de Coimbra, tarefa que desempenhou em regime de voluntariado desde o ano lectivo 2003/2004 até ao ano lectivo 2005/2006 tendo a seu cuidado a orientação de uma turma prática.
Colaborador do Mestrado de Medicina do Desporto da Faculdade de Medicina da Universidade de Coimbra na disciplina de Orto-Traumatologia do desporto onde tem a seu cargo a lição da traumatologia da coluna vertebral (desde do ano 2006/2007)
Formador (com funções de monitor) do TEAM (Trauma Evaluation and Management) da Sociedade Portuguesa de Cirurgia (2001-2003)
Formador esporádico na área da traumatologia do Centro de Formação do INEM – Coimbra (1999 e 2000).
Co-Regente da disciplina de Farmacologia Clínica - Curso Superior de Enfermagem da Escola Superior de Enfermagem Bissaya Barreto (1996 a 2002).

Regente das disciplinas de Cuidados Intensivos e de Emergência Médica do Curso de Cardiopneumologia da Escola Superior de Tecnologia da Saúde de Coimbra (1997 a 2000).
Responsável da formação anatómica do programa de formação dos internos do internato complementar de ortopedia dos HUC (de 2006 a 2007)

ACTIVIDADE LIGADA À EMERGÊNCIA MÉDICA

FORMAÇÃO

Curso de Técnicas de Emergência Médica para médicos (para Viatura Médica de Emergência e Reanimação.)
Instituto Nacional de Emergência Médica - Novembro de 1999

A.T.L.S. (Advanced Trauma Life Support)
Course for Doctors
American College Of Surgeons – Sociedade Portuguesa de Cirurgia
Coimbra, 27 a 30 de Setembro de 2000

Curso de Fisiologia de Voo e Segurança em Heliportos
(Para aerotransporte de doentes urgentes)
Instituto Nacional de Emergência Médica
Novembro de 2000

ACTIVIDADES

Médico da Viatura Médica de Emergência e Reanimação (VMER) dos Hospitais da Universidade de Coimbra. (2000 - 2005).
Colaboração com a Cruz Vermelha Portuguesa - apoio médico a eventos desportivos. (2000 - 2007).
3.Responsável da Coordenação da Segurança de Saúde de todos os eventos que ocorram no Estádio Cidade de Coimbra (de 2003 - 2007).
Responsável da Coordenação Geral de Saúde de Saúde dos eventos "Rock in Rio Lisboa" (Junho de 2004 e 2006 – Evento envolvendo cerca de 400.000 pessoas cada evento).
Louvor de Mérito Profissional atribuído a 27 de Julho de 2004 ao serviço do INEM em situação de excepção com multi-vítimas.

OUTRAS ACTIVIDADES

Sócio e elemento da Secção de Fado da A.A.C. (1991-1996)
Membro Fundador da Tuna de Medicina da Universidade de Coimbra (1994-1996)
Membro Fundador do Rotary Club Curia Bairrada
Membro da Confraria dos Enófilos da Bairrada

GALERIA DE IMAGENS

Actividade Científica e Formação em Portugal

Actividade Científica e Formação no Estrangeiro

Actividade Medico Cirúrgica em Portugal

Actividade Medico Cirúrgica no Estrangeiro

Comunicação Social

Cursos Spine Center

Emergência médica

Eventos

Prémios e Distinções

1d. BROCHURES

Estenose Lombar
Informações sobre a sua cirurgia

A estenose lombar consiste num aperto do canal vertebral comprometendo a medula e/ou as raízes nervosas. Por norma, isto deve-se a um processo natural de envelhecimento da coluna que leva a uma diminuição do diâmetro do canal vertebral.
Os principais sintomas são a dor ou diminuição de força nos membros inferiores que se agrava estando em pé ou com a marcha e alivia estando sentado, inclinando-se para a frente ou estando deitado.
A cirurgia consiste na remoção de osso, ligamentos e disco intervertebral que contribuem para a estenose, descomprimindo as estruturas nervosas. Esta cirurgia pode ser realizada por técnicas convencionais ou mini-invasivas.

Orientações pré-operatórias
Antes da sua cirurgia deve avisar se estiver com:
• Febre
• Tosse
• Alteração / feridas na região a ser operada
No dia da Cirurgia
Cuidados Pessoais
Fazer o banho pré-operatório, insistindo na região a operar; ter as unhas curtas e sem verniz; não usar maquilhagem; retirar próteses dentárias, fios, anéis, óculos, brincos ou outros acessórios.
Admissão no quarto
No seu quarto, a equipa de enfermagem fornecerá as roupas e as meias de contenção a serem usadas no bloco operatório, para o qual será encaminhado em maca com antecedência de 30 a 40 minutos do horário da sua cirurgia.
Bloco
Vai falar com o anestesista, que lhe fará algumas questões. Vão colocar-lhe a monitorização cardio-respiratória e um soro através da qual será administrada a anestesia.
Questões frequentes no pós-operatório
Onde e como vou acordar?
Após a cirurgia terminada, ficará, durante algum tempo, em observação no recobro. Nessa altura já está acordado e sob o efeito de analgésicos que aliviam a dor. E depois, será transferido para o seu quarto.
O que é uma sonda vesical? Vou precisar disso?
As cirurgias mais prolongadas e com risco de maior perda de sangue, requerem a colocação de uma sonda vesical. Trata-se de um dispositivo urinário , que nos permite contabilizar a quantidade de líquidos que perde que nos permite contabilizar a quantidade de líquidos que perde, de forma a mantermos, de forma a mantermos sempre um equilíbrio para o bem estar do doente. Além disso, facilita o pós operatório imediato, enquanto não se pode levantar para ir ao WC. Esta é colocada na sala do bloco operatório, quando já estiver anestesiado, e será retirada, normalmente, no primeiro

dia após a cirurgia.

O que é um dreno? Também vou ter um?

Nas cirurgias que envolvam maior perda de sangue, é colocado um dreno. O dreno serve para retirar o sangue residual do interior do local operado. É retirado no internamento, após a indicação do médico. O dreno serve para retirar o sangue residual do interior do local operado para reduzir os hematomas e o risco de infecção. É retirado logo que comece a ter pouca quantidade no recipiente, e logo que o médico dê essa indicação.

Qual é a posição em que devo ficar?

No pós operatório pode adoptar a posição mais confortável, evitando apenas ficar de "barriga para baixo. Se necessário, peça a um enfermeiro que o ajude a mobilizar-se.

Vou ter dores?

A dor é um sentimento subjectivo e varia de pessoa para pessoa, conforme o limiar de cada um. Periodicamente sãolhe administrados analgésicos. Sempre que a dor lhe cause incomodo, solicite medicação adicional.

Quando faço o primeiro levante?

Nas primeiras 12h a 24h após a cirurgia será auxiliado, pela equipa de enfermagem e de fisioterapia, a efectuar o primeiro levante. Usará uma cinta de contenção lombar , até indicação médica.

Quanto tempo fico internado? Quem me dá alta?

O tempo de internamento depende do tipo de cirurgia e de factores associados a cada pessoa. Em média varia entre 2 a 5 dias. Essa decisão faz parte da avaliação médica, do estado e recuperação de cada doente.

A alta será dada por um médico da equipa, e nesse momento ser-lhe-á entregue a documentação dos procedimentos efectuados, bem como os cuidados a ter com a ferida operatória e a data da próxima consulta.

As informações constantes desta brochura são genéricas, podendo não ser aplicáveis a todos os casos clínicos, dependem cada doente. Informe-se com o seu médico.

Hérnia Discal Lombar

Informações sobre a sua cirurgia

A hérnia discal consiste no deslocamento de uma porção de disco intervertebral da sua localização, comprimindo estruturas nervosas. Os sintomas mais comuns são a dor, dormência e diminuição da força muscular nos membros inferiores.
O objectivo da cirurgia é descomprimir as estruturas nervosas. É uma cirurgia relativamente rápida, com uma perda sanguínea reduzida.
Habitualmente é realizada por técnica minimamente invasiva, através de uma pequena incisão na pele, que permite uma recuperação mais rápida

Orientações pré-operatórias
Antes da sua cirurgia deve avisar se estiver com:
• Febre
• Tosse
• Alteração / feridas na região a ser operada
No dia da Cirurgia
Cuidados Pessoais
Fazer o banho pré-operatório, insistindo na região a operar; ter as unhas curtas e sem verniz; não usar maquilhagem; retirar próteses dentárias, fios, anéis, óculos, brincos ou outros acessórios.
Admissão no quarto
No seu quarto, a equipa de enfermagem fornecerá as roupas e as meias de contenção a serem usadas no bloco operatório, para o qual será encaminhado em maca com antecedência de 30 a 40 minutos do horário da sua cirurgia.
Bloco
Vai falar com o anestesista, que lhe fará algumas questões. Vão colocar-lhe a monitorização cardio-respiratória e um soro através da qual será administrada a anestesia.
Questões frequentes no pós-operatório
Onde e como vou acordar?
Após a cirurgia terminada, ficará, durante algum tempo, em observação no recobro. Nessa altura já está acordado e sob o efeito de analgésicos que aliviam a dor. E depois, será transferido para o seu quarto.
O que é uma sonda vesical? Vou precisar disso?
As cirurgias mais prolongadas e com risco de maior perda de sangue, requerem a colocação de uma sonda vesical. Trata-se de um dispositivo urinário , que nos permite contabilizar a quantidade de líquidos que perde que nos permite contabilizar a quantidade de líquidos que perde, de forma a mantermos, de forma a mantermos sempre um equilíbrio para o bem estar do doente. Além disso, facilita o pós operatório imediato, enquanto não se pode levantar para ir ao WC. Esta é colocada na sala do bloco operatório, quando já estiver anestesiado, e será retirada, normalmente, no primeiro dia após a cirurgia.
O que é um dreno? Também vou ter um?
Nas cirurgias que envolvam maior perda de sangue, é

colocado um dreno. O dreno serve para retirar o sangue residual do interior do local operado. É retirado no internamento, após a indicação do médico. O dreno serve para retirar o sangue residual do interior do local operado para reduzir os hematomas e o risco de infecção.
É retirado logo que comece a ter pouca quantidade no recipiente, e logo que o médico dê essa indicação.
Qual é a posição em que devo ficar?
No pós operatório pode adoptar a posição mais confortável, evitando apenas ficar de "barriga para baixo. Se necessário, peça a um enfermeiro que o ajude a mobilizar-se.
Vou ter dores?
A dor é um sentimento subjectivo e varia de pessoa para pessoa, conforme o limiar de cada um. Periodicamente sãolhe administrados analgésicos. Sempre que a dor lhe cause incomodo, solicite medicação adicional.
Quando faço o primeiro levante?
Nas primeiras 12h a 24h após a cirurgia será auxiliado, pela equipa de enfermagem e de fisioterapia, a efectuar o primeiro levante. Usará uma cinta de contenção lombar , até indicação médica.
Quanto tempo fico internado? Quem me dá alta?
O tempo de internamento depende do tipo de cirurgia e de factores associados a cada pessoa. Em média varia entre 2 a 5 dias. Essa decisão faz parte da avaliação médica, do estado e recuperação de cada doente.
A alta será dada por um médico da equipa, e nesse momento ser-lhe-á entregue a documentação dos procedimentos efectuados, bem como os cuidados a ter com a ferida operatória e a data da próxima consulta.

Hérnia Discal Cervical
Artrodese | Artroplastia Cervica
Informações sobre a sua cirurgia

A cirurgia à hérnia discal cervical é um procedimento cirúrgico realizado na região cervical (pescoço) para ajudar a aliviar pressão sobre as raizes nervosas. Esta pressão pode causar dor, desconforto na região cervical, mas também dormência nos braços.
O cirurgião remove o disco danificado e assim retira a pressão sobre as raízes nervosas, aliviando a dor. Em seguida, entre as vértebras, é colocado um implante.

Orientações pré-operatórias
Antes da sua cirurgia deve avisar se estiver com:
• Febre
• Tosse
• Alteração / feridas na região a ser operada
No dia da Cirurgia
Cuidados Pessoais
Fazer o banho pré-operatório, insistindo na região a operar; ter as unhas curtas e sem verniz; não usar maquilhagem; retirar próteses dentárias, fios, anéis, óculos, brincos ou outros acessórios.
Admissão no quarto
No seu quarto, a equipa de enfermagem fornecerá as roupas e as meias de contenção a serem usadas no bloco operatório, para o qual será encaminhado em maca com antecedência de 30 a 40 minutos do horário da sua cirurgia.
Bloco
Vai falar com o anestesista, que lhe fará algumas questões. Vão colocar-lhe a monitorização cardio-respiratória e um soro através da qual será administrada a anestesia.
Questões frequentes no pós-operatório
Onde e como vou acordar?
Após a cirurgia terminada, ficará, durante algum tempo, em observação no recobro. Nessa altura já está acordado e sob o efeito de analgésicos que aliviam a dor. E depois, será transferido para o seu quarto.
O que é uma sonda vesical? Vou precisar disso?
As cirurgias mais prolongadas e com risco de maior perda de sangue, requerem a colocação de uma sonda vesical. Trata-se de um dispositivo urinário , que nos permite contabilizar a quantidade de líquidos que perde que nos permite contabilizar a quantidade de líquidos que perde, de forma a mantermos, de forma a mantermos sempre um equilíbrio para o bem estar do doente. Além disso, facilita o pós operatório imediato, enquanto não se pode levantar para ir ao WC. Esta é colocada na sala do bloco operatório, quando já estiver anestesiado, e será retirada, normalmente, no primeiro dia após a cirurgia.
O que é um dreno? Também vou ter um?
Nas cirurgias que envolvam maior perda de sangue, é colocado um dreno. O dreno serve para retirar o sangue residual do interior do local operado. É retirado no internamento,

após a indicação do médico. O dreno serve
para retirar o sangue residual do interior do local operado
para reduzir os hematomas e o risco de infecção.
É retirado logo que comece a ter pouca quantidade no
recipiente, e logo que o médico dê essa indicação.
Qual é a posição em que devo ficar?
No pós operatório pode adoptar a posição mais confortável,
evitando apenas ficar de "barriga para baixo. Se necessário,
peça a um enfermeiro que o ajude a mobilizar-se.
Vou ter dores?
A dor é um sentimento subjectivo e varia de pessoa para
pessoa, conforme o limiar de cada um. Periodicamente sãolhe
administrados analgésicos. Sempre que a dor lhe cause
incomodo, solicite medicação adicional.
Quando faço o primeiro levante?
Nas primeiras 12h a 24h após a cirurgia será auxiliado, pela
equipa de enfermagem e de fisioterapia, a efectuar o primeiro
levante. Usará uma cinta de contenção lombar , até indicação
médica.
Quanto tempo fico internado? Quem me dá alta?
O tempo de internamento depende do tipo de cirurgia e de
factores associados a cada pessoa. Em média varia entre
2 a 5 dias. Essa decisão faz parte da avaliação médica, do
estado e recuperação de cada doente.
A alta será dada por um médico da equipa, e nesse momento
ser-lhe-á entregue a documentação dos procedimentos
efectuados, bem como os cuidados a ter com a ferida operatória
e a data da próxima consulta.

Artrodese Lombar

Informações sobre a sua cirurgia

A Artrodese Lombar é uma cirurgia realizada para estabilizar a coluna, criando "pontes ósseas" entre pelo menos duas vértebras e eliminando movimento entre elas.
É feita uma incisão, em seguida , o cirurgião remove todo o material do disco degenerado e do osso que está a comprimir as estruturas nervosas e o saco dural. Depois são colocados parafusos e barras de titânio para garantir a fixação enquanto a ponte óssea se constrói.
A cirurgia dura, normalmente, 3-4 horas, no entanto depende da complexidade do problema e do número de vértebras que necessitam de ser estabilizadas.

Orientações pré-operatórias
Antes da sua cirurgia deve avisar se estiver com:
• Febre
• Tosse
• Alteração / feridas na região a ser operada
No dia da Cirurgia
Cuidados Pessoais
Fazer o banho pré-operatório, insistindo na região a operar; ter as unhas curtas e sem verniz; não usar maquilhagem; retirar próteses dentárias, fios, anéis, óculos, brincos ou outros acessórios.
Admissão no quarto
No seu quarto, a equipa de enfermagem fornecerá as roupas e as meias de contenção a serem usadas no bloco operatório, para o qual será encaminhado em maca com antecedência de 30 a 40 minutos do horário da sua cirurgia.
Bloco
Vai falar com o anestesista, que lhe fará algumas questões. Vão colocar-lhe a monitorização cardio-respiratória e um soro através da qual será administrada a anestesia.
Questões frequentes no pós-operatório
Onde e como vou acordar?
Após a cirurgia terminada, ficará, durante algum tempo, em observação no recobro. Nessa altura já está acordado e sob o efeito de analgésicos que aliviam a dor. E depois, será transferido para o seu quarto.
O que é uma sonda vesical? Vou precisar disso?
As cirurgias mais prolongadas e com risco de maior perda de sangue, requerem a colocação de uma sonda vesical. Trata-se de um dispositivo urinário , que nos permite contabilizar a quantidade de líquidos que perde que nos permite contabilizar a quantidade de líquidos que perde, de forma a mantermos, de forma a mantermos sempre um equilíbrio para o bem estar do doente. Além disso, facilita o pós operatório imediato, enquanto não se pode levantar para ir ao WC. Esta é colocada na sala do bloco operatório, quando já estiver anestesiado, e será retirada, normalmente, no primeiro dia após a cirurgia.
O que é um dreno? Também vou ter um?
Nas cirurgias que envolvam maior perda de sangue, é

colocado um dreno. O dreno serve para retirar o sangue residual do interior do local operado. É retirado no internamento, após a indicação do médico. O dreno serve para retirar o sangue residual do interior do local operado para reduzir os hematomas e o risco de infecção.
É retirado logo que comece a ter pouca quantidade no recipiente, e logo que o médico dê essa indicação.
Qual é a posição em que devo ficar?
No pós operatório pode adoptar a posição mais confortável, evitando apenas ficar de "barriga para baixo. Se necessário, peça a um enfermeiro que o ajude a mobilizar-se.
Vou ter dores?
A dor é um sentimento subjectivo e varia de pessoa para pessoa, conforme o limiar de cada um. Periodicamente sãolhe administrados analgésicos. Sempre que a dor lhe cause incomodo, solicite medicação adicional.
Quando faço o primeiro levante?
Nas primeiras 12h a 24h após a cirurgia será auxiliado, pela equipa de enfermagem e de fisioterapia, a efectuar o primeiro levante. Usará uma cinta de contenção lombar , até indicação médica.
Quanto tempo fico internado? Quem me dá alta?
O tempo de internamento depende do tipo de cirurgia e de factores associados a cada pessoa. Em média varia entre 2 a 5 dias. Essa decisão faz parte da avaliação médica, do estado e recuperação de cada doente.
A alta será dada por um médico da equipa, e nesse momento ser-lhe-á entregue a documentação dos procedimentos efectuados, bem como os cuidados a ter com a ferida operatória e a data da próxima consulta.

2. THE SCIENTIFIC ARTICLE

Risco de queda e posturografia computorizada em amputados

Resumo

Objetivo: Metade dos amputados de membro inferior sofre pelo menos uma queda por ano. A posturografia computorizada (PC) permite analisar as reações posturais através do deslocamento do centro de massa corporal. A PC já foi previamente usada para avaliar o risco de queda em várias populações, mas não está estabelecido que possa identificar esse risco nos amputados. O objetivo deste estudo foi avaliar o controlo postural estático dos amputados de membro inferior através de PC e a sua relação com antecedentes de queda.

Materiais e métodos: Foi obtida uma amostra de 35 indivíduos amputados unilaterais de membro inferior acompanhados em consulta externa. Foram aplicados o teste *Timed up-and-go* (TUG) e versão portuguesa da *Activities-specific Balance Confidence Scale* (ABC). A estabilidade postural foi avaliada através de PC com o Biodex Stability System™. Foram realizadas três medições no nível mais estável da plataforma e registada a média dos valores do índice *Overall Stability* (OA).

Resultados: A amostra era composta por 54,30% de amputados transtibiais e os restantes transfemorais. Os amputados transtibiais que referiram pelo menos uma queda no ano anterior foram 36,80%. Estes apresentaram uma média de idades significativamente mais alta e valores da escala ABC significativamente mais baixos. Entre os amputados transfemorais 43,80% apresentaram história de queda no último ano. Na PC os indivíduos amputados transfemorais que caíram apresentaram um índice de OA significativamente mais alto. A avaliação da curva ROC revelou uma boa capacidade discriminatória do índice OA.

Conclusões: Os indivíduos amputados transfemorais com antecedentes de queda apresentaram alterações significativas do controlo postural estático na PC, no entanto isso não se verificou nos amputados transtibiais. Um estudo longitudinal poderá ter interesse para avaliar a capacidade da PC na deteção do risco de queda.

Palavras-chave: Amputação, Quedas acidentais, Controlo postural

Fall risk and computerized posturography in amputees

Abstract

Objective: Half of the lower limb amputees suffer at least one fall per year. Computerized posturography (CP) allows the analysis of postural reactions by displacing the center of body mass. The CP has previously been used to assess the risk of falls in various populations, but is not established that can identify this risk in amputees. The objective of this study was to evaluate the static postural control of lower limb amputees through CP and its relationship with previous falls.

Methods: A sample of 35 unilateral lower limb amputees followed in an outpatient department was obtained. Timed Up and Go test and the Activities-specific Balance Confidence scale (ABC) were applied. Postural stability was evaluated by CP using the Biodex Stability System ™. Overall Stability index (OA) scores were obtained from the mean scores of three trials at the platform most stable level.

Results: The sample was composed by 54.30% transtibial and the others where transfemoral amputees. The transtibial amputees who reported at least one fall in the previous year were 36.80%. These showed a significantly higher mean age and significantly lower ABC scale values. Among the transfemoral amputees 43.80% had history of falls in the previous year. In CP individuals who fell had a significantly higher OA index. The evaluation of the ROC curve showed good discriminatory capacity of the OA index in CP.

Conclusions: Transfemoral amputees with previous falls presented significant alterations of the static postural control in CP, however this was not true for transtibial amputees. A longitudinal study may have interest to assess the CP of capacity to predict falling risk.

Keywords: Amputation, Accidental falls, Postural Balance

Introdução

As quedas representam um problema considerável para os indivíduos amputados de membro inferior. Além de serem uma potencial causa de dano corporal e dos componentes protéticos, podem condicionar medo de cair e consequente diminuição da atividade, da participação social e da qualidade de vida. [1-4] A par com a idade avançada e o acidente vascular cerebral, a amputação de membro inferior é a principal causa de queda.[3] Aproximadamente metade dos amputados de membro inferior sofre pelo menos uma queda por ano. [1, 5-6] Numa investigação sobre os fatores psicossociais mais importantes na reabilitação de amputados o medo de cair apareceu como a primeira preocupação, reportado por 58% dos indivíduos. [7] Constatou-se igualmente que medo de cair é mais elevado nos indivíduos com história de queda recente. [1] Os fatores intrínsecos que aumentam o risco de queda incluem a idade, a existência de doenças crónicas, a instabilidade na marcha, a alterações da visão e a necessidade de medicação crónica. [1, 3]

A manutenção da estabilidade postural é uma aptidão fundamental para a capacidade de marcha autónoma. O controlo postural é obtido através da manutenção do centro de gravidade corporal dentro da base de sustentação. [8] O controlo postural estático em indivíduos saudáveis depende predominantemente da integração de elementos somatossensitivos, vestibulares e visuais. [9-10] A manutenção do controlo postural é complexa e multifatorial e a sua falência nos indivíduos amputados pode ser devida a diversos fatores como défice propriocetivo, diminuição da força muscular e perda de flexibilidade. [9-11]

A posturografia computorizada (PC) é um método de avaliação objetivo que permite analisar as reações posturais através do deslocamento do centro de massa corporal. A PC já foi previamente usada para avaliar o risco de queda em várias populações e sabe-

se que os amputados apresentam alterações do controlo postural, no entanto não está estabelecido que a PC possa identificar o risco de queda em amputados. [9]

O objetivo deste estudo foi de avaliar se a PC poderia ser um instrumento útil para diferenciar os indivíduos amputados de membro inferior com antecedentes de queda e estabelecer um ponto de corte.

Material e métodos

Foi obtida uma amostra de conveniência composta por indivíduos amputados de membro inferior que recorreram à consulta externa entre Julho e Dezembro de 2014. Foram incluídos amputados unilaterais de membro inferior, com mais de 18 anos, com prótese há mais de 12 meses e com capacidade de marcha. Obteve-se uma amostra de 35 indivíduos. Todos os indivíduos forneceram consentimento informado para realização do estudo. Os dados foram colhidos por três médicos do serviço e tratados de forma confidencial e anónima. Foram avaliadas as seguintes variáveis: idade, índice de massa corporal, género, causa da amputação, tempo desde a amputação, nível de amputação, lateralidade dominante, utilização de auxiliar de marcha, comorbilidades e história de queda durante a utilização da prótese nos últimos 12 meses. Foram aplicados o teste *Timed up-and-go* (TUG) e a versão portuguesa da *Activities-specific Balance Confidence Scale* (ABC). O TUG é um teste simples, rápido e funcional, que requer equilíbrio estático e dinâmico para a sua execução, relacionando-se com o risco de queda. A ABC é um instrumento que permite identificar indivíduos com problemas de equilíbrio e que se revelou fiável em amputados de membro inferior. Baixos valores da escala ABC correlacionam-se com baixos níveis de confiança no equilíbrio. [2, 12-13] A estabilidade postural foi avaliada através de PC com o Biodex Stability System™. Trata-se de uma plataforma circular com vários níveis de estabilidade, conectada a um programa de computador que mede as oscilações do centro de massa e calcula os índices de estabilidade *Overall Stability Index* (OA), *Anterior-Posterior Stability Index* e *Medial-Lateral Stability Index*. Dos três índices fornecidos, o índice OA parece ser o melhor indicador de equilíbrio global. [9] Foram dadas instruções aos indivíduos para que mantivessem o equilíbrio, de olhos abertos, com os membros superiores ao longo do corpo. Foram realizadas três medições de 20 segundos no nível mais estável da

plataforma (nível oito) e foi registada a média dos valores do índice OA. Valores aumentados do índice AO indicam uma perturbação do controlo postural. [9] A análise estatística das diferentes variáveis e comparação entre os grupos de indivíduos consoante os antecedentes de queda foi realizada separadamente para cada nível de amputação. Foi definido como Grupo A o grupo de indivíduos com antecedentes de queda no ano anterior e Grupo B o grupo de indivíduos sem antecedentes de queda. Os resultados foram analisados com recurso ao programa SPSS® Statistics versão 22 recorrendo-se aos testes T de Student, Qui-quadrado e exato de Fisher. A normalidade das variáveis foi avaliada através do teste Shapiro-Wilk. Para avaliar a capacidade discriminatória da PC como instrumento diagnóstico foi determinada a curva *Receiver Operating Characteristic* (ROC) e o ponto de corte calculado através da fórmula de Youden. Foram determinados valores da sensibilidade, especificidade, valor preditivo positivo e negativo e *likelihood ratio*.

Resultados

A amostra foi dividida por nível de amputação e os indivíduos agrupados de acordo com o seu historial de queda no último ano.

Os amputados transtibiais (n=19) eram predominantemente do género masculino (68,40%), com uma média de idades de 51,05±15,74 anos e com um tempo médio de protetização de 16,58±9,45 anos. A causa mais frequente de amputação foi traumática (68,40%). Os indivíduos que referiram pelo menos uma queda no ano anterior foram 36,80%. O grupo A e o grupo B de amputados transtibiais não apresentaram diferenças quanto ao género, IMC, tempo de protetização, utilização de auxiliar de marcha ou presença de comorbilidades. O grupo A apresentou uma média de idades significativamente mais alta (61,43 *vs.* 45,00 anos, p=0,02) e valores da escala ABC significativamente mais baixos (60,27 *vs.* 77,71, p<0,05). Verificou-se que os amputados transtibiais cujo membro amputado era o dominante recorriam mais a auxiliar de marcha (p=0,02), no entanto não apresentaram maior risco de queda. Os valores do teste TUG foram mais elevados nos indivíduos do grupo A, mas sem significância estatística (11,86 *vs.* 8,79 segundos, p=0,10). Na PC o grupo A apresentou um índice OA mais alto, embora sem significância estatística (3,05 *vs.* 2,74, p=0,71).

Entre os amputados transfemorais (n=16), 81,30% eram do género masculino, com uma média de idades de 54,13±10,27 anos e um tempo médio de protetização de 20,13±13,49 anos. O motivo mais frequente de amputação foi traumático em 75,00% dos casos. Quanto a antecedentes, 43,80% apresentaram história de queda no ano anterior. O grupo A e o grupo B de amputados transfemorais não apresentaram diferenças relativamente à idade, género, IMC, tempo de protetização, valores de ABC e tempo de TUG. Na PC o grupo A apresentou um índice OA significativamente mais alto (3,84 *vs.* 2,62, p=0,02). A avaliação da curva ROC revelou uma boa capacidade

discriminatória (AUROC=0,86, p=0,02) (Ilustração 1). Com um ponto de corte de 3,585 o índice de OA apresenta uma sensibilidade de 85,71% (95% CI 42,23-97,63%) e especificidade de 88,89% (95% CI 51,74-98,16%) na deteção de indivíduos com antecedentes de queda, um valor preditivo positivo de 85,71% (95% CI 42,23-97,63%), um valor preditivo negativo de 88,89% (95% CI 51,74-98,16%) e um *likelihood ratio* de 7,71 (95% CI 1,19-50,18).

Discussão

Os resultados de PC só mostraram alterações significativas para amputados transfemorais, não se verificando essas alterações nos amputados transtibiais. O facto de não haver diferenças significativas no controlo postural estático entre os amputados transtibiais dos dois grupos poderá ser devido a diferentes níveis de atividade, que não foram avaliados no nosso estudo. Amputados com bom controlo postural e níveis elevados de atividade poderão submeter-se a atividades bipodálicas mais exigentes, surgindo fatores de risco extrínsecos para queda.[4] Também sabemos que as quedas nos amputados transtibiais ocorrem essencialmente em contexto dinâmico e no nosso estudo apenas foi avaliado o controlo postural estático. [11]

O estudo apresenta várias limitações, nomeadamente por não ter sido quantificado o nível de atividade de cada indivíduo e não serem diferenciados os tipos de componentes protéticos. O facto de a história queda no ano anterior ser relatada pelo próprio pode levar a um viés de memória e limitar a exatidão dos dados, no entanto os nossos resultados estão de acordo com a literatura revista.[1-2] A nossa amostra inclui igualmente uma grande percentagem de amputações traumáticas, não representativa da população geral de amputados de membro inferior. Sabe-se no entanto que os amputados traumáticos apresentam maior probabilidade de sucesso de protetização comparativamente aos amputados de causa vascular. [12, 14]

A realização de PC, mesmo no nível de maior estabilidade, pressupõe controlo postural suficiente para a execução do exame, o que poderá deixar de fora amputados com maiores alterações posturais, no entanto na nossa amostra todos os amputados conseguiram realizar a avaliação.

Os resultados da escala ABC apenas revelaram diferenças entre os dois grupos de amputados transtibiais e o teste TUG não diferenciou os grupos em ambos os níveis de

amputação. De salientar que existem poucas escalas e testes de avaliação relacionados com o equilíbrio e o risco de queda validados para a população portuguesa e adequados para amputados de membro inferior.

A análise da curva ROC, um método de determinação da qualidade de um teste diagnóstico, revelou que a PC é um exame com boa capacidade discriminatória em amputados transfemorais.

Conclusões

Avaliar e compreender as alterações do controlo postural em amputados é importante para detetar os indivíduos em risco e estabelecer medidas de prevenção nesta população. O nosso estudo revelou que a PC pode ser um bom instrumento na deteção de indivíduos amputados transfemorais com risco de queda, relacionando as alterações do controlo postural estático e os antecedentes de queda, no entanto isso não se verificou nos amputados transtibiais. Um estudo longitudinal poderá ter interesse para avaliar a capacidade da PC na deteção do risco de queda e na avaliação da eficácia de uma eventual intervenção. A identificação de doentes com maior necessidade de treino de equilíbrio postural através de PC poderá ter implicações no planeamento de um programa de reabilitação mais eficiente, para uma intervenção mais dirigida e com maior impacto na funcionalidade e qualidade de vida dos doentes amputados.

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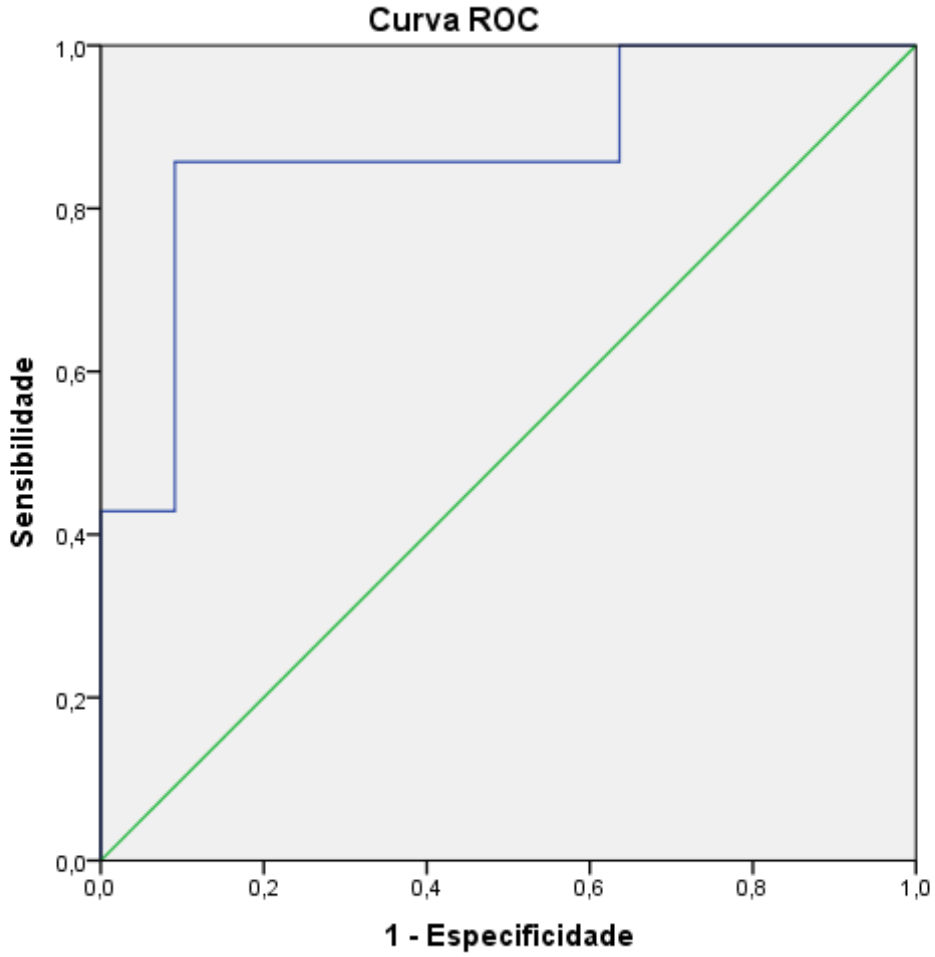

Ilustração 2 - Curva ROC: PC e queda em amputados transfemorais