

Contents



COLOUR GUIDE PER TOPIC

GENERAL ORTHOPAEDICS

UPPER LIMB

LOWER LIMB

SPINE

TRAUMA/POLYTRAUMA

PAEDIATRICS

GENERAL EDUCATION



Download the EFORT 2012 application to view the scientific programme and congress information on your iPhone®, iPad® or Android!

iPhone®, iPad®, iPod Touch® and iTunes Store® are registered trademarks of Apple Inc.



The full attendance of the congress entitles to 18 European CME credits (ECMEC's).

The certificate will be sent to each participant as PDF file to the registered e-mail address after the congress. If you have not yet registered your e-mail address with us, please contact the "Scientific Programme" desk in the registration hall.

Published by medieninformatik.ch

WELCOME ADDRESS

Message from the President of EFORT	2
Welcome Address from the Chairman of the Scientific Committee and the Chairmen of the Local Organising Committee	3

SESSION OVERVIEW & ABSTRACT INFORMATION

Comprehensive Review Course	5
Controversial Case Discussion	5
Cross-Fire-Discussion	5
ExMEx	6
Free Paper Session	6
Honorary Lecture	10
Instructional Lecture	10
Specialty Session	11
Symposium	14
Workshop	15
Industry Symposium	16
Abstracts information	18

WEDNESDAY 23 MAY 2012

Programme of the day	24
----------------------	----

THURSDAY 24 MAY 2012

Programme of the day	60
----------------------	----

FRIDAY 25 MAY 2012

Programme of the day	96
----------------------	----

INDUSTRY & EXHIBITION

Industry partners of the 13 th EFORT Congress	128
Exhibition floor plan	129
Exhibitors list	131

SOCIETIES

National Member Societies	132
Specialty Societies and Affiliated Organisations collaborating in Berlin	133

ABOUT EFORT

EFORT Committees	134
About EFORT	136
EFORT Advanced Training Programme	137
EFORT Fora	138

GENERAL CONGRESS INFORMATION

Social programme	139
About the host city	140
General congress information	141
Travel information	147
Floor plans	149

E-POSTERS

General Orthopaedics	152
Upper Limb	163
Spine	169
Lower Limb	173
Trauma / Polytrauma	189
Paediatrics	196
Nurse	198

INDEX

Index of authors	200
------------------	-----

Trauma

NR.	TITLE	AUTHORS
EFORT12-5242	What is the effect of compartment syndrome and fasciotomies on fracture healing in tibial fractures?	Reverté Vinaixa, Maria Mercedes / Dimitriou, Rozalia / Kanakaris, Nikolaos K / Giannoudis, Peter
EFORT12-5248	Use of hip brace after dislocation of hip arthroplasty: Myth or reality	Rambani, Rohit / Mazhar, Tooba / Akrawi, Hawar / Salim, Javed
EFORT12-5404	Circumferential wires as a supplement to intramedullary nailing in inter- and subtrochanteric hip fractures	Birkelund, Lasse / Palm, Henrik / Brix, Michael / Troelsen, Anders / Ban, Ilija
EFORT12-5416	Gait analysis in the patients with knee ligament injury	Matic, Aleksandar / Devedzic, Goran / Petrovic, Suzana / Cukovic, Sasa / Filipovic, Nenad / Ristic, Branko
EFORT12-5485	The true cost of inaccurate data collection: patients with fractured neck of femur	Lindisfarne, Edward A. / Dawe, Edward J.C. / Stott, Philip / Chipman, L
EFORT12-5521	Full length femur X-rays in patients with fracture neck of femur	Quah, Conal / Francis, Simon / Stephen, Arthur
EFORT12-5525	Pertrochanteric fractures treated with P.C.C.P.: Complications and functional outcomes	Matteotti, Renato / Grosso, Elena / Rollero, Luca / Panarese, Roberto / Tarello, Maria Paola / Battiston, Bruno <i>Selected within the best e-posters</i>
EFORT12-5598	Autonomy and morbid - mortality after upper-femur fracture in elderly	Frey, Solene / Lemeur, Mael / Curvale, Georges / Rochwenger, Alexandre
EFORT12-5665	Loosening of the Linvatec bioabsorbable pin (Smartnail) with articular surface damage – a significant complication in the repair of a distal femoral osteochondral defect	Davidson, Jerome / Colaco, Henry / Syed, Ahmed / Rajaratnam, Sam / Skyrme, Andrew / Armitage, Andrew
EFORT12-5730	MRSA screening of all trauma admissions and fracture neck of femur 36hours target	Fong, Angus / Geliot, Thomas / Hall, Jonathan / Taylor, Grahame
EFORT12-5835	Use of the Taylor Spatial Frame (TSF) in posttraumatic deformities of the lower limb	Montanari, Giorgio / Schuh, Reinhard / Di Motta, Daniele / Girolami, Mauro / Bevoni, Roberto <i>Selected within the best e-posters</i>
EFORT12-5836	Long-term clinical results of conservative and minimal invasive treatment of closed displaced intra-articular calcaneal fractures. A five-year follow-up	Manolarakis, George / Kastanis, Grigorios / Solidakis, Nikolaos / Delaportas, Grigorios
EFORT12-5849	First clinical results with a cement augmented proximal femur nail (PFN-A)	Gebhard, Florian / Scola, Alexander
Polytrauma / pelvis		
EFORT12-1405	Minimally invasive osteosynthesis system in the symphysis for pelvis fractures	Lázaro-González, Angel / Martínez-Reina, Javier / Navarro-Robles, Alfredo / Cano-Luis, Pedro / Galleguillos-Rioboo, Carlos / Giraldez-Sanchez, Miguel Angel
EFORT12-2234	Psychological aspects after pelvic ring fractures	Kabir, Koroush / Shahhossini, Milad / Pflugmacher, Robert / Goost, Hans / Wirtz, Dieter / Burger, Christof
EFORT12-2352	90-90 plate construct for comminuted anterior column and quadrilateral plate fracture: A new surgical technique	Sen, Ramesh / Goyal, Tarun / Aggarwal, Sameer / Tripathy, Sujit / Agarwal, Amit
EFORT12-2365	A safe technique of anterior column screw fixation in acetabular fractures	Sen, Ramesh / Goyal, Tarun / Aggarwal, Sameer / Tripathy, Sujit / Agarwal, Amit <i>Selected within the best e-posters</i>
EFORT12-3389	Outcome analyses after percutaneous iliosacral screw fixation according to screw placement. A retrospective study	Spiller, Jörg / Rueger, Johannes / Lehmann, Wolfgang / Fensky, Florian

Government of the Republic of Serbia
Ministry of Education and Science

School of Medicine
Kragujevac

Clinical Centre
Kragujevac

The faculty of Engineering
Kragujevac

Gait analysis in the patients with knee ligament injury

B. Ristić^{1,2}, A. Matić^{1,2}, G. Devedžić², S. Petrović², S. Ćuković², N. Filipović²
¹Clinical Centre Kragujevac, Clinic for orthopaedics and traumatology, Zmajeva 30, Kragujevac, Serbia
²School of Medicine, Svetozara Markovića 69, Kragujevac, Serbia
 The faculty of Engineering, Stevana Jankića, Kragujevac, Serbia
 b.ristic@pmf.kragujevac.rs matiac@pmf.kragujevac.rs g.devedzic@pmf.kragujevac.rs s.petrovic@pmf.kragujevac.rs s.cukovic@pmf.kragujevac.rs n.filipovic@pmf.kragujevac.rs

May 2012, Berlin

Overview

- Introduction
- Methods – Data Collection
- Methods – Simulation Algorithm
- Methods – Determination of the AP translation and IE rotation
- Results
- Conclusion
- References

Introduction

- At the present time, gait analysis systems have become the most commonly used tool for determining abnormalities in walking pattern [1,2].
- By defining movement curves, it is possible to evaluate how one movement affects another.
- The aim of the study was to present more accurate system for gait analysis on patients with knee ligament apparatus injury before and after operation of ACL reconstruction.

Methods – Data collection

- This study includes 15 male patients with deficient anterior cruciate ligament (ACL), without concomitant injury of the ipsilateral lower leg. They have voluntarily consented to the test of the gait analysis.
- Kinematic data were collected using an OptiTrack system with six infrared cameras (Fig.1) placed along the pathway which were periodically recording position of the markers placed on patient's lower extremity (Fig.2) [2, 3, 4].




Figure 1. Infrared camera FLEX: V100R2




Figure 2. Experimental set - up

Methods – Simulation algorithm

- Movement simulation is performed in order to understand at which time there was a maximal value of the AP translation and IE rotation.
- Simulation algorithm (Fig.3) consists of two algorithms:
 - Reconstruction algorithm:
 - Import CT scans,
 - Polygon phase,
 - Surface phase,
 - Solid model;
 - Generation of the patient's movement curves:
 - Recording movements curves,
 - Save c3d file,
 - Read c3d file,
 - Import movements curves in Catia V5.

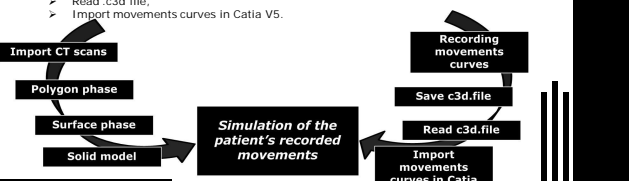


Figure 3. Simulation algorithm

Methods – Determination of the AP translation and IE rotation

- Determination of the AP translation is based on successive calculating of the affine coordinates along AP direction (Fig.4):

$$d_{AP} = T_{T(i+1)} - T_{T(i)}$$
- Determination of the IE rotation is based on definition of the angle between femoral and tibial tangent lines of the movement curves.

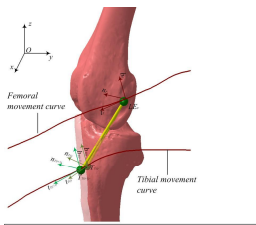
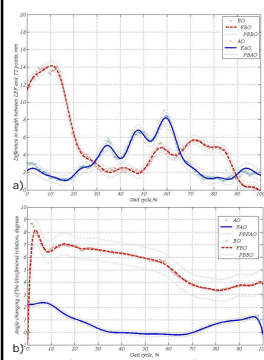


Figure 4. Tibial translation along AP direction and IE rotation

Legend:
 FLE – lateral epicondyle of the femur,
 TE – tuberosity of the tibia in 0-th moment,
 F_{0,0} – sub-tangency of the tibia in (i-1)-th moment,
 F_{0,i} – tangency line of the tibial movement curve in i-th, e.g. (i-1)-th moment,
 F_{0,i+1} – normal line of the tibial movement curve in i-th, e.g. (i-1)-th moment,
 T_{0,0} – normal line of the femoral movement curve in 0-th, e.g. (i-1)-th moment,
 T_{0,i} – tangency line of the femoral movement curve in i-th, e.g. (i-1)-th moment,
 T_{0,i+1} – normal line of the femoral movement curve in i-th, e.g. (i-1)-th moment, and
 Oxyz – global coordinate system.

Results



- Anterior – posterior (AP) translation and internal – external (IE) rotation achieve their maximal values (Fig.5) at the beginning of the gait cycle.
- Maximal values of the AP translation and IE rotation correspond to maximal amplitudes on the curves.

Table 1. Values of the AP translation and IE rotation before and after operation

	Before operation	After operation
AP trans. [mm]	6.619±1.447	3.0901±0.511
IE rot. [°]	6.169±0.711	2.382±0.477

Figure 5. a) AP translation, and b) IE rotation

Conclusion

- The results obtained in this research reveal that more precise diagnosis of the ligament instability can be set.
- The results are also indicating significant decrease of the AP translation and IE rotation after ACL reconstruction.

Acknowledgment & References

The results of this research are the part of the project supported by Ministry of Science of Serbia, Grant LIII-41007.

References:

- M.S. Andersen, M. Damsgaard, J. Rasmussen: Kinematic analysis of over-determinate biomechanical system, *Computer Methods in Biomechanics and Biomedical Engineering*, Vol. 12, No.4, August 2009, 371 – 384, DOI: 10.1080/10255840802459412
- G. Bovi, M. Rabuffetti, P. Mazzoleni, M. Ferrarin: A multiple-task gait analysis approach - Kinematic, kinetic and EMG reference data for healthy young and adult subject, *Gait & Posture* 33 (2011), 6 -13, doi:10.1016/j.gaitpost.2010.08.009
- T.D. Collins, S. N. Ghousayni, D.J. Ewins, J.A. Kent: A six degrees - of - freedom marker set for gait analysis - Repeatability and comparison with modified Helen Hayes set, *Gait & Posture* 30 (2009), 173 -180, doi:10.1016/j.gaitpost.2009.04.004
- J. Chalier, B. Müller, A. Maiques, E. Pujol: Suspected feigned knee extensor weakness: Usefulness of 3D gait analysis. Case report, *Gait & Posture* 32 (2010), 354 – 357, doi: 10.1016/j.gaitpost.2010.06.00



Gait analysis in the patients with knee ligament injury

B. Ristić^{1,2}, A. Matić^{1,2}, G. Devedžić³, S. Petrović³, S. Čuković³, N. Filipović³

¹Clinical Centre Kragujevac, Clinic for Orthopedics and Traumatology, Zmaj Jovina 30, Kragujevac, Serbia
²School of Medicine, Svetozara Markovića 69, Kragujevac, Serbia
³The Faculty of Engineering, Sestre Janjč 6, Kragujevac, Serbia

branko_ristic@gmail.com matibob@bbs.com.rs gdevedzic@ccp.kragujevac.rs s.petrovic@bbs.ac.rs scukovic@bbs.ac.rs nfilipovic@bbs.ac.rs

Questions?



May 2012, Berlin