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Peer review of Dissertation Thesis

Can the adverse complications of foot drop be prevented by an endoprosthesis: design and development of a prototype device

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Doctoral Study Programme Experimental Surgery

Field of the thesis: Orthopaedics

Dissertation thesis of Dr. Bassel El-Osta it is adequate in its scope and documentation, it contains a total of 68 pages, i tis appropiately supplemented with 22 figures, 4 tables and 3 graphs. The work is adequately divided into six parts.

In the first, introductary part, the author summarizes the current theoretical knowledge of the given issue, where, in addition to the anatomy and biomechanics of foot drop, he deals with the clinical picture, epidemiology.

In the following four parts in detail and comprihensively, in particular, he describes characteristics of prototype device as well as methods and protocols for implanting the prototype into a cadaver. An official request for patent has been made and seek from the US patent deparment and this has been achieved and the Grant Number is US9788936B2.

In sixth and seventh chapter, the results and the first attempt on a real patient are presented.

In the final parts, the author compares the treatment methods recorded in the literature in the discussion and reflects about the possible outcome of the prototype in the future.

Furthemore, the author presents a list of the literature used, the scope and breakdown of which corresponds to the needs of the dissertation thesis, the cited sources are adequate and up-to date.

The final part consists of a list of own publication in which Dr. Bassel El-Osta author or co-author of eleven publications in journals with an impact factor and five works in peer-reviewed journals. The set of these publiacations is dominated by the author´s work dedicated to the issue if this dissertation thesis, it can be clearly stated that these are up-to-date and very beneficial publications for clinical practice.

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The chosen topic of the dissertation thesis is very current, because it deal with a very common pathology and the possibilities of surgical therapy of drop foot and which offers patients a return to a well-movable ankle joint and therapy undoubtedly increases their quality of life.

The scope of the dissertation work is adequate to the given topic, the work is very carefully prepared, suitable clinical and imaging methods were used in the work to monitor the results, correct statistical evaluation and it brings clear conclusions of the author´s own research beneficial for clinical practice. The dissertion work of dr. Bassel El-Osti clearly brings significant new scintific knowledge in the field of orthopaedics. It presents, among other things, the development and results of completely new implant for treatment of drop foot.

Conclusion: The student has demonstrated creative abilities in the given are and the submited work meets criteria of disertation.

In Prague 13th November

ass. Prof. Filip Burget, M.D., Ph.D.

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