

About: Dissertation to acquire a scientific degree "Doctor" in the area of higher education 7. "Healthcare and Sport" professional field 7.1 Medicine, scientific specialty "Neurosurgery", Acibadem City Clinic MBAL Tokuda Sofia on the subject of "Current Trends and Opportunities in Diagnosis and Treatment Tethered-cord syndrome" from Dr. Asen Cekov

With Order No 172 / 09.04.2019 of the Executive director of Acibadem City Clinic MBAL Tokuda AED I am appointed as a member for the Scientific Jury and responsible for preparation of an opinion for conducting public defence of a dissertation of Dr. Asen Hristov Cekov on the subject mentioned above.

All necessary materials required by law I have received on time and in optimal way in order to make my opinion.

The subject of the dissertation is well formulated and is based on current problem in the area of spinal surgery.

The dissertation is presented on 138 pages(including bibliography) and based on the expectations include: introduction and definitions - 2 pages, literature review - 42 pages, goal and tasks - 1 page, materials and methods - 4 pages, results - 31 pages, discussion - 31 pages, conclusion 1 pages, visualised with 46 figures, sufficient number of tables. The bibliography includes 308 titles, from which 13 are in Cyrillic and ordered alphabetically.

In the beginning after the introduction of the problem, a wide literature review is made, which includes historical notes, normal development of the spinal cord and some paraspinal structures as well as detailed description of pathomorphology, pathogenesis and classification of different dysraphic malformations.

The presented review is exhaustive and clearly points to the problem with the spinal dysraphism and the syndrom strained terminal filum or myelon. The analysis of the bibliographic sources is consistent and in-depth.

The goals and tasks defined by the author are clearly formulated as well as the used materials and methods for achieving them.

In chapter "Results" are shown 84 patients included in the study and treated in Tokuda hospital for the period 2016-2018, which are split into 11 groups and each group presents a specific case. The number of cases is impressive and are presented wonderfully with images.

After discussion with the presented observations the author comes with proposition of its own classification and achieves 12 conclusions from which a big portion are with practical character.

Dr. Cekov presents 2 publications in Bulgarian journals and 3 scientific notices presented in international conferences, whose summaries are published. The presented publications meet the criteria of the Rules for Application of ZRASRB.

As a summary I would like to say that the major advantage of the presented dissertation is that it researches a current problem with diseases which is often neglected or is not well known in the clinical practice and can lead to catastrophic consequences. In this sense every event for accentuation and knowledge about this condition can only be welcomed and rated as valuable.

The dissertation is well formed and consistent. Visualised wonderfully and logically leading to achieve the presented conclusions and creating own classification.

Moreover, the creation of practical classification system can lead to achieving a better choice when deciding for time of operation and choosing a suitable technique, which I can rated as a substantial contribution.

I won't hide some criticism that I have about the dissertation.

The term "tethered-cord" is a foreign word coming from english language and using another term in Bulgarian or Latin could have a substantial contribution. However using it is understandable because it is in fact in the clinical practice.

Major oversight is the missing statistical and comparative analysis with goal of achieving the proposed goal and tasks. The study has mainly descriptive character and present own experience. This might lead to put under suspicion the main part of the proposed goal, and more precisely the creation of algorithm for treatment, even though less convincing this can be achieved only through self experience, but with less scientific value.

The present number of patients is astonishing, but the tracking (the least 6 months) is disappointing, especially knowing the period from 2016-18 in which patients are found. In some cases the result from 6 months of treating the tethered cord syndrome is not enough and elongating it could only lead to more definitive observations.

The accent when presenting the clinical cases is quite strong and this creates the feeling that this is the main goal instead of the tool to visualise the specific groups which the author discuss.

From technical point of view I would like to remark that event the thought there are many figures which describes the cases, they do not have titles and many of them are actually photos. On some the figures that source is not shown (e.g. Fig. 1).

The bibliography is ordered alphabetically and on citation of the source a number is not added which makes the tracking and valuation if all sources has been used very difficult.

Although all the criticism done from me, I believe the dissertation of Dr. Asen Hristov Cekov is dedicated on a currently important problem and meets the criteria and undoubtedly contributes on the knowledge and clinical practice for treating this challenging condition.

Because if this I suggest to the members of the scientific jury to vote "Yes" to award Educational and Scientific Degree "Doctor" to Dr. Asen Cekov in the area of higher

education 7. Healthcare and Sport, professional field 7.1 Medicine, scientific specialty  
“Neurosurgery”.