

## REVIEWS

By Prof. Dr. Radoslav Nenkov Gaidarski D.N. for a scientific work on the topic  
"ANATOMIC AND ATYPICAL HEPROBUS RESECTIONS-RESULTS AND  
COMPARATIVE ANALYSIS" by the dissertation Dr. Dimitar Delchev Rusenov Chief  
Assistant to the Clinic of HEPROCHNA PLEASE

Dr. Rusenov was born on 11-05-1972. education in 2000 at the Medical University of Sofia. Since 2003 he has been a clinical resident at the Department of General and Operative Surgery, since 2006 he has been selected as an assistant at the same department. In 2010, he was appointed a second-rate research associate at the Clinic of Liver, Pancreatic and General Surgery. She has a specialty in Surgery. He takes an active part in the daily activities of the clinic and the scientific forums held in Bulgaria and abroad. His personal contributions are presented and arranged in a separate list in the documents for this review.

The scientific paper submitted for review contains 150 standard pages with 11 sections, is approved by an internal clinical college and accepted for external protection by a full majority of the participants in the college.

### First Section: REFERENCES

Covers about 40 pages of specialized surgical journals in the last 30 years. The total number of journals, monographs, textbooks, dissertations on the topic, reports from scientific forums and conferences according to the dissertation were 981. the latter stopped and introduced 389 of them.

Of particular note is the historical literary review of liver surgery that could not have developed without the exclusive development of liver structure by the anatomical scientists Francis Gleeson, Hugo Rex, James Cantley et al. The contributions of Karl Langenbuch, Hogarth Pringle, Lorta Jacob, and especially Claude Quino's contribution to the segmental structure of the liver, have been noted in the development of liver surgery.

Trends in liver resection, depending on the nature of the disease, are monitored in separate subdivisions - benign and malignant formations, size, number and distribution in the individual segments.

Noteworthy is the subsection: METASTATIC LIVER TUMORS, due to the fact that in the surgical literature there are still unspecified and not accepted by individual schools and authors uniform criteria for the treatment of tumors in the liver of metastatic character. several groups have been formed requiring a different approach to their elimination from the healthy parenchyma of the liver:

The first group of colorectal cancer metastases.

Second group - neuro-endocrine metastases.

A third group of non-colo-rectal and non-neuro-endocrine metastases.

The subdivision of the metastatic liver tumors makes it possible to evaluate the postoperative results obtained and the possibility of preliminary decisions for possible surgery on the liver. In the next subsection of lit. overview traces the concept of ANATOMIC AND ATYPICAL RESERVATIONS OF THE LIVER, detailing the operative techniques of Bismuth, Ta-Tung, and Lorta Jacob. the rest of the world and CONCLUSION which in a conspicuous form discusses individual issues such as: "What is the most appropriate method — Anatomical or atypical liver resections," Methods of resection for liver metastases. my method of parenchymal dissection and "Early late postoperative results."

### In the next section: PURPOSE AND TASKS

The dissertation formulates one main goal: "Determination of a possible prognostic role of the type of hepatic resection / anatomic or atypical / in combination with other intraoperative characteristics / method of parenchyma dissection, use of the clamp technique resection

surface area / for the risk of occurrence and frequency the severity of the manifestation of early postoperative specific complications. To accomplish the main goal and formulated 10 tasks. To accomplish the main goal and tasks the section is used:

#### MATERIAL AND METHODS

In the period March 2007 to March 2018, the clinic performed 1021 operations on the liver. Of these, the dissertation includes 852 cases with hepatic resections - 230 anatomical and 622 atypical. The methods used are presented in separate subsections:

1. Diagnostic methods in three stages - pre, intra and postoperative: clinical, laboratory and instrumental, characteristic for making the appropriate diagnosis.
2. Surgical methods - described are the surgical techniques applied during surgery on the liver depending on the findings found in the various segments and lobes of the liver - primary or metastatic, single or multiple tumors, respectively small or large in size for the evaluation of the remaining healthy parenchyma of the liver.

In the "OWN RESULTS" section of the clinic, the results of the operated patients were placed in two groups: 465 patients with benign diseases and the second group 387 / 45.4% / with malignant ones, but with resections of at least 3 segments or less difficult-to-access segments such as first, eighth, or fourth. The last group of -387 cases was placed in the RISK group due to the risk of unpredictable postoperative complications. In the RISK group, the most common indications for surgery were colorectal cancer metastases — 181 cases followed by primary liver cancers — 63 cases, etc. 116 patients with primary malignancies of the stomach, pancreatic gland, and mammary gland. Of note is the fact that the median age of the operated patients is between 50-70 years and is in line with the published data from most foreign authors. This age implies the "typical" accompanying diseases such as being overweight, liver steatosis, arterial hypertension, ischemic heart disease, diabetes, kidney and respiratory disorders. Not many concomitant diseases were contraindications for surgery. On page 73 of D. Tr. Contraindications for surgery are described in detail. There were 188 patients who underwent radical surgery in which more than two segments of resections were performed regardless of the type of intervention - anatomical or atypical resection. The average duration of the surgery was about 200 minutes, using all Pringle primes without his compulsory attachment. The reported blood loss averages about 100 cc. Of note is the fact that close

2/3 of liver resections /60.7% were performed as a stage of multivisceral surgery for synchronous metastases or direct carcinoma invasion from a primary tumor of a neighboring organ. Comparative analysis by four criteria: age, duration, blood loss, and hospital stay showed that atypical resections as a stand-alone procedure or stage of multiviscer intervention were characterized by a shorter duration, less blood loss, and a shorter hospital stay. 16, p.77 /.

The postoperative results presented in Table 17, p.78 show 2.2% early postoperative mortality regardless of the type of procedure - anatomical or atypical liver resection, the main cause of lethal outcome were: liver failure, hepatorenal syndrome, biliary disease peritonitis, sepsis, etc. In the dissertation work were analyzed in detail-GENERAL NON-SPECIFIC MORBIDITY in 13.9% of cases of adequacy and hepato-renal syndrome. The clamping technique with a conclusion is discussed in detail - it is used intermittently for about 12 minutes. The total duration does not exceed 25-30 minutes. In the penultimate part of D.T. "DISCUSSION" on 14 pages the previous sections are discussed and the conclusions and statements made according to the criteria and definitions of 2011 and 2012 for 1. Methods for liver transection, 2. Campage techniques have been repeated. - Benefits and risks, 3. Postresection hemorrhage, 4. Postresection hemorrhage. 5. Specific complications and mortality following hepatic resection according to

In the "CONCLUSION", the dissertation proposes / shares / the following basic principles:

1. A number of factors are important in determining the type of resection - anatomical or atypical:

A. number, size, location and type of pathological lesion.

B. Volume of healthy parenchyma to be removed due to impaired blood supply and biliary drainage for radical surgery.

C. Presence and degree of compensatory hypertrophy of the residual parenchyma.

2. Surgical equipment should achieve:

A. Thorough chemo and biostasis.

B. Intraoperative blood loss minimized.

3. There is no universal method for hepatic resection, intraoperative resectability assessment is a key determinant of the surgical approach and the patient's prognosis.

Based on the presented material in the separate sections of D. Tr. 17 CONCLUSIONS have been derived, each of which has been further clarified with data, figures and statements that enable the text to be better understood in the relevant conclusion.

I consider the presented 6 "CONTRIBUTIONS" to be too modest as the material exported is huge for the scale of our country and perhaps the largest shown so far. I accept the contributions without comment, underlining the great efforts made in the selection of the LITERATURE section, which lists 389 authors of worldwide renown who contribute to the thesis being considered as valuable scientific work.

The author's abstract covers 70 pages, where the main sections and problems of the dissertation are briefly analyzed.

#### CONCLUSION

The dissertation paper submitted for review by Dr. Dimitar Delchev Rusinov covers 149 standard pages and 11 sections. D. Tr. "Anatomical and atypical hepatic resection results and comparative analysis" is relevant as liver surgery is a relatively "young" surgery compared to the other surgery of the gingiva, bladder, stomach and intestinal tract. Interventions on the liver parenchyma became possible after studies by a number of scientists on the segmental structure of the liver, its blood supply, bile ducts and the possibilities of the residual parenchyma. Despite the successes achieved in the last 2, 3 decades, there are still differing views on the approach and decisions taken to carry out an operational intervention by individual schools and authors. Macer and humble present N. Tr. contributes to the clarification of a number of controversial issues, such as the type of surgery-anatomical or atypical resection, the problem of clamping intake, blood loss during surgery and the postoperative period, the postoperative biliary surgery - all are analyzed and evaluated on the basis of comparative data of world-renowned authors and schools, which contributes to the objectivity and reliability of the data presented in the thesis. I know Dr. Rusinov from his election as a clinical resident at the Clinic of Liver and Pancreatic Surgery - Alexandrovska Hospital and I follow his path of development and claim that he is a humble and positive doctor, scientist and human. His dissertation has all the qualities of a scientific paper and is highly appreciated

and as such, I propose to the Honorable Jury to award Dr. Dimitar Delchev Rusinov a Doctorate in Surgery degree in Area 7. Health and Sports-Professional Section 7.1- Medicine-

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