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Paper Accepted*

ISSN Online 2406-0895

Case Report / Приказ болесника

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Лапароскопска енуклеација неуроендокриног тумора на задњем зиду панкреаса – приказ болесника и преглед литературе

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Received: August 21, 2020

Accepted: December 21, 2020

Online First: December 25, 2020

DOI: <https://doi.org/10.2298/SARH200821115E>

***Accepted papers** are articles in press that have gone through due peer review process and have been accepted for publication by the Editorial Board of the *Serbian Archives of Medicine*. They have not yet been copy-edited and/or formatted in the publication house style, and the text may be changed before the final publication.

Although accepted papers do not yet have all the accompanying bibliographic details available, they can already be cited using the year of online publication and the DOI, as follows: the author's last name and initial of the first name, article title, journal title, online first publication month and year, and the DOI; e.g.: Petrović P, Jovanović J. The title of the article. *Srp Arh Celok Lek*. Online First, February 2017.

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Лапароскопска енуклеација неуроендокриног тумора на задњем зиду панкреаса – приказ болесника и преглед литературе

SUMMARY

Introduction Neuroendocrine tumors of the pancreas are rare neoplasms. They are divided into two groups: functional and non-functional. Non-functional tumors represent a diagnostic challenge, given that they often remain asymptomatic and are diagnosed as an incidental finding.

Case outline We present a patient in whom the tumor was discovered at the junction of the body and the tail of the pancreas on the dorsal side. The patient had no specific symptomatology, with no loss in body weight. Considering the conducted diagnostics and the condition of the patient, we decided to perform a laparoscopic enucleation. This procedure has been applied in a safe and efficient manner, so the operative and postoperative course passed without complications. The definitive histopathological examination confirmed the finding that it was a non-functional pancreatic neuroendocrine tumor.

Conclusion Laparoscopic enucleation is an effective and safe treatment modality of these tumors with well-known advantages compared to open surgery, but there is always a tendency to improve already existing results and thus to contribute not only to treatment but to greater and better comfort of the patient

Keywords: pancreas; neuroendocrine tumor; laparoscopy; laparoscopic enucleation

САЖЕТАК

Увод Неуроендокрини тумори панкреаса су ретке неоплазме. Деле се у две групе: на функционалне и нефункционалне. Нефункционални тумори представљају дијагностички изазов, обзиром да често остају асимптоматски и дијагностикују се случајно или као узгредни налаз.

Приказ болесника Представљамо пацијента код кога је тумор откривен на месту спајања тела и репа панкреаса на дорзалној страни. Пацијент није имао специфичну симптоматологију, био је без губитка телесне масе. С обзиром на спроведену дијагностику и опште стање пацијента, одлучили смо се за лапароскопску енуклеацију. Овај поступак је примењен на сигуран и ефикасан начин, тако да је оперативни и постоперативни ток прошао без компликација. Дефинитивним хистопатолошким прегледом потврђено је да је реч о нефункционалном неуроендокриној тумору панкреаса.

Закључак Лапароскопска енуклеација је ефикасан и сигуран начин лечења ових тумора са добро познатим предностима у односу на отворену хирургију, али увек постоји тежња ка побољшању већ постојећих резултата и на тај начин се може допринети не само лечењу, већ и бољем комфору пацијента.

Кључне речи: панкреас; неуроендокрини тумор; лапароскопија; лапароскопска енуклеација

INTRODUCTION

Neuroendocrine tumors of the pancreas (pNETs) represent rare neoplasms. They are divided into two basic groups: functional (F- pNETs) and non-functional (NF-pNETs). NF-pNETs can often secrete Chromogranin A, neuron-specific enolase, calcitonin, or other peptides, but they are mainly with no characteristic symptomatology [1, 2].

Pre-operative imaging diagnostic is needed for the evaluation and detection of the location of the tumor, and in this sense computerized tomography of the abdomen (CT), endoscopic ultrasonography (EUS), and nuclear magnetic resonance (NMR) are used. The

octreotide scanner is particularly useful to determine the relevancy or the affinity of the tumor for somatostatin, as well as for the detection of possible tumor foci that were not seen in the prior mentioned radiological diagnostics [3].

Modalities of the NF-pNETs surgical treatments, depending on the size and the localization of tumors, ranging from enucleation, atypical pancreatectomy, typical pancreatectomy with lymphadenectomy, including splenectomy in the case of tumors localized in the distal part of the pancreas [4, 5].

CASE REPORT

The patient age 56 years, male, was admitted to the clinic for further diagnosis and further treatment. At the reception, he was with no symptoms, negating the previous loss in the body weight. Three months before hospitalization in our clinic, a focal mass on the pancreas was detected, first on CT, then the diagnostic was completed by positron emission tomography (PET CT) (Figure 1) which showed the radioactive focus in the part of the body facing the tail of the pancreas. Tumor lesion was 18 mm of size and does not invade the intrahepatic duct nor disrupt the contour of the pancreas.

Taking into account the patient's general condition and previously conducted diagnostic and clinical examination, it was decided that the patient undergo laparoscopic enucleation of pancreatic tumor.

In terms of general endotracheal anesthesia, pneumoperitoneum was created and then placed working ports on the typical places. Exploration of the abdomen verified normal findings. Bursa omentalis was first opened via intercoloepiploic access, the posterior wall of the stomach was freed and the upper edge of the pancreas was free to be accessed. The body and the tail of the pancreas were completely mobilized from the retroperitoneum, wherein the splenic arteries and veins were identified. Enclosed tumor with the capsule was verified at the transition from the body to the tail of the pancreas on the back wall of the pancreas, 2 cm in diameter, in the vicinity of the splenic artery (Figure 2). The tumor did not give the impression of breaking the pancreatic tissue toward the front nor having contact with the Wirsung channel.

The enucleation of the tumor was performed in fully with the use of the LigaSure device (SurgRx, Redwood City, CA), without the damaging of the capsule (Figure 3). Re-exploration did not verify lesions of the Wirsung channel. The pars Libera of the great omentum was placed into the cavum of the removed tumor, wherein the cavum was completely obliterated, as well as two contact Foley catheters. The sample of the tumor has been sent to a definitive histopathological analysis.

The postoperative course passed with no complications. Drains were removed on the third postoperative day, the patient was discharged from the hospital four days after surgery. A month after the surgery, abdominal ultrasound control was performed and findings were normal. Six months after the surgery, MR examination was performed and findings in the abdomen were normal. The patient is still in the process of regular monitoring and medical control.

Definitive PH: Histological organization of neuroendocrine tumors of the pancreas is predominantly pseudo glandular, and insular and trabecular in focuses, but certainly well differentiated. The tumor was immunohistochemically verified, did not demonstrate any production of the hormone, and was assessed as the NET-G2 based on the proliferative potential (Figure 4).

The aim of our study was to review laparoscopic enucleation, as an efficient, safe, and secure surgical approach in the treatment of non-functioning neuroendocrine tumors, localized on the dorsal side of the pancreas.

DISCUSSION

pNETs originate from cells of pancreatic islets and represent a heterogeneous group of pancreatic neoplasms. Depending on the ability to secrete the biologically active hormones and whether they show typical clinical symptoms, neuroendocrine tumors of the pancreas are divided into pNETs and NF-pNETs [6].

NF-pNETs are generally asymptomatic. Their symptomatology is mostly related to the effect of the massive tumor itself on the pancreas or on the surrounding structures, as well as to the correlation with the meta changes [7]. When the symptomatology is present, it is shown as abdominal pain, weight loss, jaundice, more rarely there can also be present anorexia, nausea, fatigue, palpable masses in the abdomen, and the other [8]. Mainly, NF-pNETs are presented as asymptomatic and are accidentally discovered, the most commonly as incidental findings within the diagnostics of other diseases [7, 8].

CT represents an initial diagnostic examination in detecting pNETs. These tumors are usually clearly defined lesions. The presence of the hypoagenation in the arterial phase of the tomography and the presence of calcifications in the interior of change is generally associated with a more aggressive form of the tumor, and therefore with a poorer prognosis [9]. NMR has a higher sensitivity and specificity comparing to the CT scan. PETCT and oktreoid scanner are the methods used to confirm the diagnosis, as well as to detect the possible presence of meta changes or other tumor foci in the body, which were not detected in the previous imaging diagnostic. EUS and fine-needle aspiration may be of great importance in determining the nature and localization of the tumor preoperatively [4, 9].

In the patient that we presented, preoperative diagnostics that was equivalent to the guidelines of the current literature were performed, and after completion of preoperative evaluation, we were able to conclude with great certainty that it was an NF-pNETs, and we accordingly decided on the modality of treatment.

Surgical treatment is the only curative treatment modality of these tumors and, depending on the size of the tumor and its location, it ranges from organ preservation procedures, through atypical, to typical resections of the pancreas and accompanying lymphadenectomy [5, 10]. According to the literature at pNETs whose diameter is < 3 cm, enucleation of the tumor can be safely administered. In the nineties, Gagner performed the first successful laparoscopic procedure on the pancreas and presented his initial experiences and results [10]. From that time until our days, there have been numerous studies and papers which, through their results, indicate the advantages of minimally invasive surgical approaches to the treatment of these tumors with special emphasis on the enucleation of these lesions, which remains limited by the size of the tumor [11, 12].

Due to uncharacteristic clinical presentation, especially with NF-pNETs who generally remain asymptomatic and usually are discovered as an incidental finding in the framework of other diagnostic targets, it should be kept in mind that early detection and surgical treatment have good immediate and postponed results in the treatment of this disease. Therefore, it is very important to apply a careful and multidisciplinary approach for each patient. Laparoscopic enucleation, although limited by the size of the tumor, is an effective, safe, and secure access, regardless of the tumor location. By improving operational techniques and by the introduction of new instruments and equipment, there is a tendency for current results to get better and to improve.

Ethical standards: All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards. Written consent to publish all shown material was obtained from the patient.

Conflict of interest: None declared.

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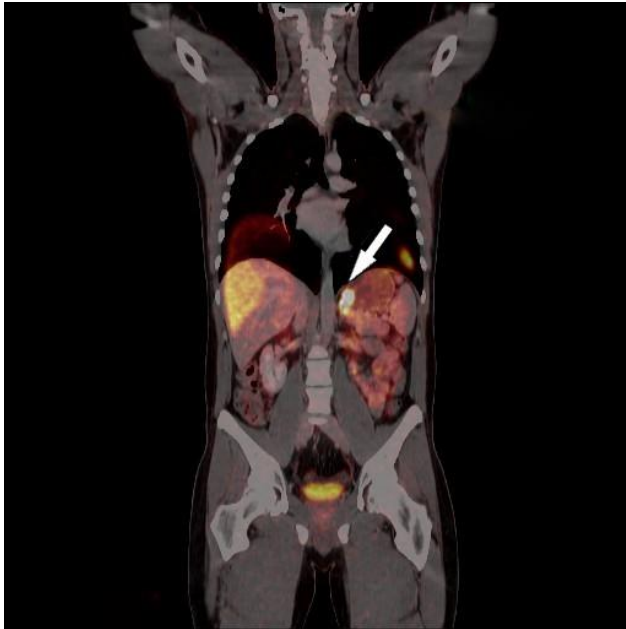


Figure 1. Gallium-68 PET/CT DOTATATE scan – with the presented radioactive focus in the part of the body towards the tail of the pancreas

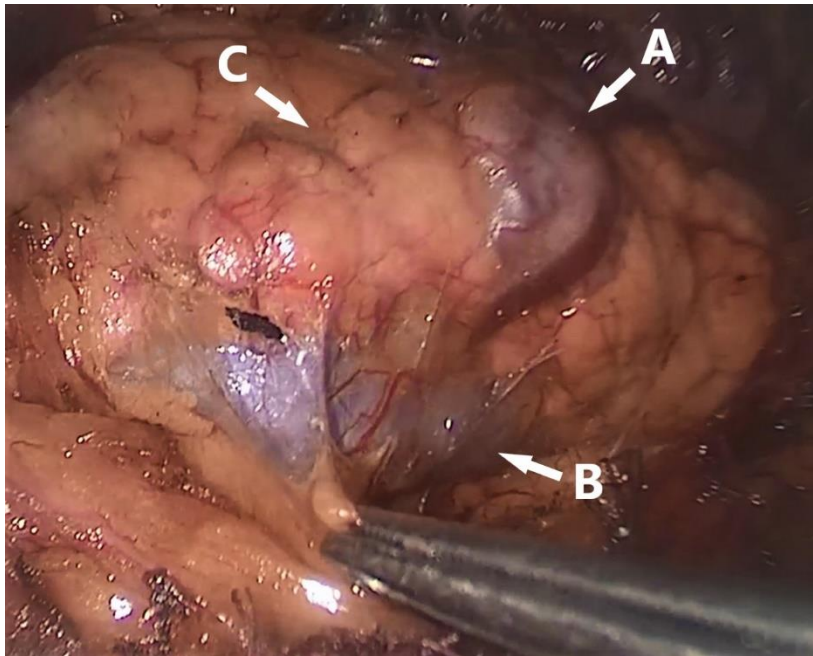


Figure 2. Intraoperative finding - the relationship of the tumor to the splenic artery; (A) tumor; (B) splenic artery; (C) posterior wall of the pancreas

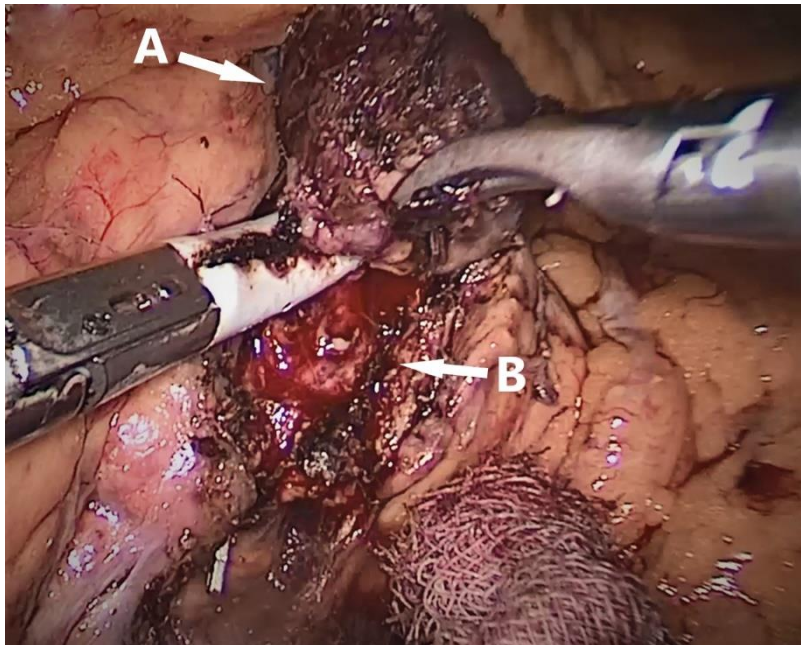


Figure 3. Intraoperative photo: tumor enucleated using LigaSure device; (A) tumor of the pancreas; (B) the cavum of the removed tumor

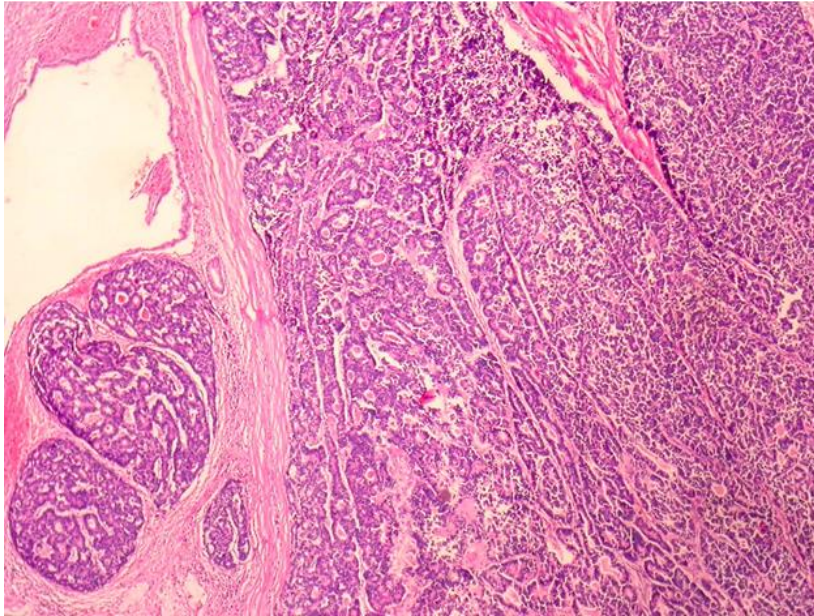


Figure 4. Total histomorphological and immunohistochemical findings correspond to well differentiated neuroendocrine tumor of the pancreas, category (NET – G2)