

# Laparoscopic Distal Pancreatectomy for Intrapancreatic Accessory Spleen: Case Report

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## SUMMARY

**Introduction** Accessory spleens can be found in up to 10% of the population, and their intrapancreatic occurrence is considered uncommon. When present, the intrapancreatic accessory spleen is usually found in the tail of the pancreas in about 1.7% of adult individuals. The infrequent presence of the accessory spleen in the pancreatic tissue could lead to inappropriate diagnosis and hence therapeutic approach, as they are commonly presented as a hypervascular node in the tail of the pancreas on abdominal CT and MRI, mimicking a well differentiated tumor of the pancreas or non-functioning pancreatic neuroendocrine tumor.

**Case Outline** We present a 70-year-old female in whom a preoperative evaluation finding was highly suggestive of a non-functioning neuroendocrine tumor of the pancreatic tail. We performed spleen preserving laparoscopic distal pancreatectomy, and histopathological examination revealed the intrapancreatic accessory spleen.

**Conclusion** Although infrequent, the presence of the intrapancreatic accessory spleen must be considered in the differential diagnosis of pancreatic tail tumors.

**Keywords:** intrapancreatic spleen; accessory spleen; pancreas; pancreatic neuroendocrine tumor; laparoscopic distal pancreatectomy

## INTRODUCTION

Accessory spleen is a congenital anomaly in which splenic tissue is found outside the spleen. This anomaly usually occurs in the fifth week of intrauterine fetal development [1]. Accessory spleens occur in about 10% of normal population and can be found practically anywhere in the abdominal cavity. In the majority of cases they are localized in the splenic hilum, gastro-splenic ligament and greater omentum [2]. Less frequent localizations include gastric wall, small intestine, mesenterium, pancreas, even ovary and testicle [3]. Accessory spleens are in fact ectopic splenic tissue. They are usually asymptomatic and almost never require specific treatment, except in some hematologic disorders such as idiopathic thrombocytopenic purpura (ITP). Intrapancreatic accessory spleens (IPAS) are found in about 1,7% of the population and their intrapancreatic localization can be misleading in diagnostic procedures as well as in choosing the proper therapeutic approach. These lesions are usually present in CT/MRI findings as hypervascular, well-delimited lesions which can be easily misdiagnosed for a well differentiated pancreatic tumor, pancreatic neuroendocrine tumor (PNET), solid pseudo-papillary pancreatic neoplasm or even metastatic pancreatic tumor [4]. Therefore, the diagnosis is usually obtained only after histopathologic examination of the resected specimen since these pa-

tients frequently undergo pancreatic resection due to impossibility of excluding pancreatic neoplasm [5]. Although uncommon, intrapancreatic accessory spleen should be taken into consideration in the diagnostic algorithm for pancreatic lesions, especially since new and adequate diagnostic procedures can be of use in obtaining the right diagnosis and avoiding the unnecessary surgical intervention with all potential complications [6].

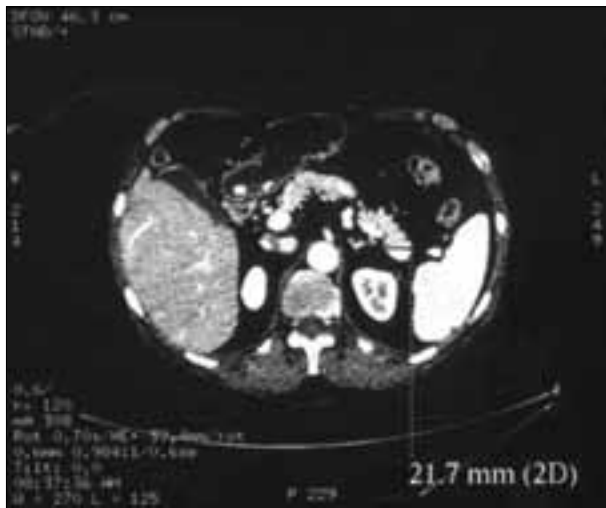
## CASE REPORT

A 70-year-old female was admitted to hospital for non-specific, dull epigastric pain and upper abdominal discomfort. Laboratory findings and tumor-marker serum levels (CA 19-9, CEA, CA 72-4) were within the reference range. Chromogranin A (CgA) serum level was slightly elevated. Abdominal ultrasound and multi-detector computed tomography (MDCT) revealed a well-delimited, hypervascular tumor-like lesion, 20×18 mm in size, located in the tail of the pancreas (Figures 1, 2 and 3). According to the imaging characteristics of the lesion and elevated serum CgA level, the lesion was interpreted as a non-functioning PNET and the decision for surgical procedure was made.

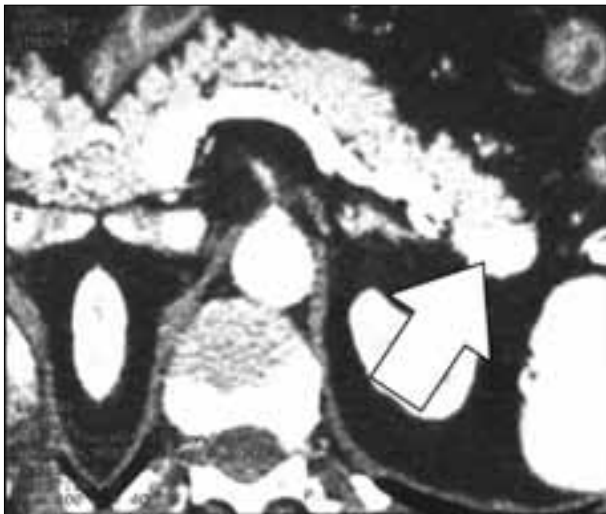
The patient was operated by the laparoscopic approach in the right lateral supine position (hanging spleen technique) which eases

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**Figure 1.** Upper abdominal MDCT showing pancreatic tail tumor



**Figure 2.** Enlarged view of the pancreatic tail; IPAS marked by an arrow

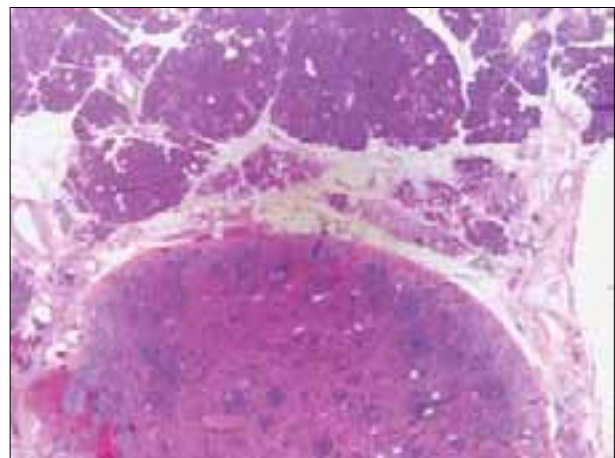


**Figure 3.** MDCT showing hypervascular pancreatic tail node

the access to the colon splenic flexure, spleen and tail of the pancreas. After complete mobilization of the colon, splenic flexure and entering the greater sac (omental bursa) through the gastro-colic ligament, anterior surface of the



**Figure 4.** Operative specimen of resected pancreas



**Figure 5.** Histopathology showing the typical encapsulated splenic parenchyma as an accessory spleen surrounded by pancreatic tissue (HE, 2.5x)

pancreatic body and tail was completely exposed. A dark reddish-brown in color tumorous lesion on the posterior side of the pancreatic tail was detected. The pancreatic tail was divided from blood vessels for splenic inferior pole and from splenic vein by cutting short pancreatic vein branches with an ultrasound harmonic knife. The tail of the pancreas was further mobilized toward the medial axis to the left lateral side of the superior mesenteric vein. Pancreatic transection was then performed at the level of the neck of the pancreas using an endoscopic stapling device (Endo GIA). No major bleeding from the resected surface of the pancreas or pancreatic juice leakage was observed. Laparoscopic distal pancreatectomy with preservation of the spleen was then completed. This was, in fact, the first ever laparoscopic pancreatic resection performed in the Clinical Centre of Serbia. The resected pancreas was placed in the endoscopic bag and removed through one of the ports on the anterior abdominal wall. The specimen was then sent to the pathologist for histopathologic examination (Figure 4).

Macroscopically, the lesion was oval, encapsulated, node-like, dark reddish-brown in color, 20 mm in size and resembling that of splenic tissue. Histopathologic analysis revealed the true nature of the lesion and the diagnosis of intrapancreatic accessory spleen was established (Figure 5). Postoperative course was uneventful and the patient was discharged from hospital after six days. One year after surgery, the patient is well and disease-free.

## DISCUSSION

Although the intrapancreatic accessory spleen is considered as uncommon, Halpert and Gyorkey [3] have found 364 cases on 3,000 autopsies with 17% of them localized in the tail of the pancreas. Considering the benign nature of the lesion and frequent performance of unnecessary surgical procedures, it is important to obtain the correct diagnosis [7].

There are less than 40 cases of IPAS published in the English literature to date. Vast majority of these patients underwent pancreatic resection as IPAS were misdiagnosed for pancreatic tumor, or PNET as in our case. Uchiyama et al. [8] published a case report and review of the literature in 2008 showing 11 patients with IPAS treated with pancreatic resections. In 9 cases IPAS was interpreted as non-functioning PNET, in 1 case as exocrine pancreatic tumor while only 1 patient had indication for surgery since the ITP was present along with IPAS. Lehtinen et al. [9] found, analyzed and published a report on 25 patients with IPAS in 2013 including those who were not treated with surgery. Beside the ITP, other spleen conditions and disorders may rise as well in the accessory spleen. There are several published cases of epidermoid cysts in resected IPAS and they were interpreted preoperatively as pancreatic cystadenomas [10, 11].

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## Лапароскопска дистална панкреатектомија због интрапанкреасне акцесорне слезине – приказ болесника

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### КРАТАК САДРЖАЈ

**Увод** Акцесорне слезине се јављају код око 10% популације, а једно од ређих места њихове појаве је ткиво панкреаса. Интрапанкреасне акцесорне слезине најчешће настају у пределу репа панкреаса, а срећу се код 1,7% здравих људи. Постојање акцесорне слезине на овом нетипичном месту може довести до дијагностичке и терапијске недоумице с обзиром на то да је промена најчешће хиперваскуларна и стога, на основу налаза компјутеризоване томографије и магнетне резонанције абдомена, може бити протумачена као тумор панкреаса.

**Приказ болесника** Код жене старе 70 година је након

свеобухватне дијагностике постављена дијагноза нефункционалног неуроендокриног тумора репа панкреаса. Болесница је оперисана применом лапароскопске дисталне панкреатектомије с очувањем слезине, а хистопатолошким анализом је утврђено да је туморска промена интрапанкреасна акцесорна слезина.

**Закључак** Иако је ово изузетно ретка аномалија, треба је узети у обзир у диференцијалној дијагнози тумора репа панкреаса.

**Кључне речи:** интрапанкреасна слезина; акцесорна слезина; панкреас; панкреасни неуроендокрини тумор; лапароскопска дистална панкреатектомија

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