

## Left Pancreatectomy with Preservation of the Spleen: A Case Report

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DOI: [10.36347/sjmcr.2024.v12i04.021](https://doi.org/10.36347/sjmcr.2024.v12i04.021)

Received: 18.02.2023 | Accepted: 26.03.2024 | Published: 16.04.2024

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### Abstract

### Case Report

Left pancreatectomies are, among pancreatic resections, the simplest and best-tolerated. Their main short and long term complications are pancreatic fistula and diabetes, respectively. If the indication for pancreatectomy is a presumably benign lesion, splenic conservation is the general rule to avoid post-splenectomy infectious complications. There are two alternative techniques; sparing of the splenic artery and vein (Kimura procedur), or splenic preservation with sacrifice of the splenic artery and vein (Warshaw procedure) [1]. We report the case of a 41-year-old patient, admitted to our department for the management of a cystic lesion located at the tail of the pancreas, the patient underwent a caudal pancreatectomy with preservation of the spleen by laparotomy.

**Keywords:** Left pancreatectomy, splenectomy, spleen preservation, benign pancreatic tumor, pancreatic cancer.

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## INTRODUCTION

Left pancreatectomies (LP) involve en bloc removal of all or part of the body and tail of the pancreas located to the left of the gastroduodenal artery. They are indicated for malignant or benign tumors, as well as non-tumoral pathologies of the left pancreas.

These resections are technically simpler and better tolerated than cephalic resections, with lower mortality [1]. When indicated for malignant tumors or advanced inflammatory lesions (complicated chronic pancreatitis), they typically involve the resection of the spleen and its vessels (left splenopancreatectomy [LSP]) [2]. Rarely, in the case of malignant tumors, they can be technically challenging and may require the resection of adjacent organs [3]. However, the majority of left pancreatectomies (LP) are currently performed for benign tumors (or those with low malignant potential), allowing for more conservative surgery: spleen preservation with (kimura intervention) or without (Warshaw intervention), preservation of splenic vessels or preservation of the body parenchyma for benign caudal lesions) [2]. A significant portion of LP can now be performed laparoscopically, with clinical benefits [4]. Therefore, it is important to first specify the extent of the resection and then choose the approach.

## CASE PRESENTATION

A 41-year-old patient, with a history of cholecystectomy 15 years ago and a pancreatitis A four months prior to admission, presents with epigastric pain radiating to the back for the past 4 months. There are no other associated symptoms, and the overall condition is characterized by apyrexia and the preservation of general health.

Clinical examination finds a patient hemodynamically and respiratory stable, afebrile, anicteric with epigastric abdominal tenderness;

The laboratory tests showed no abnormalities;

The patient underwent an abdominal CT scan, which revealed a pancreatic cystic lesion at the body of the pancreas, measuring 20 x 12 mm, seemingly communicating with the main pancreatic duct (Wirsung), with no pejorative signs, suggestive of IPTMP (Figure 1).

The assessment was complemented by an abdominal MRI, which identified a lesion in the body portion of the pancreas measuring 16x10 mm, appearing to communicate with the Wirsung duct measuring 20x12 mm, without any tissue budding, suggesting an intraductal papillary mucinous neoplasm (IPMN) of the Wirsung duct without signs of degeneration (Figure 2).

The patient was discussed in a multidisciplinary team meeting, and the decision was to proceed with surgery.

The patient underwent a left pancreatectomy with preservation of the spleen and the splenic vein (Kimura intervention) by laparotomy (Figures 3 & 4).

The post-operative outcomes were favorable, the patient was discharged after three days, and the anatomopathological results are in progress.

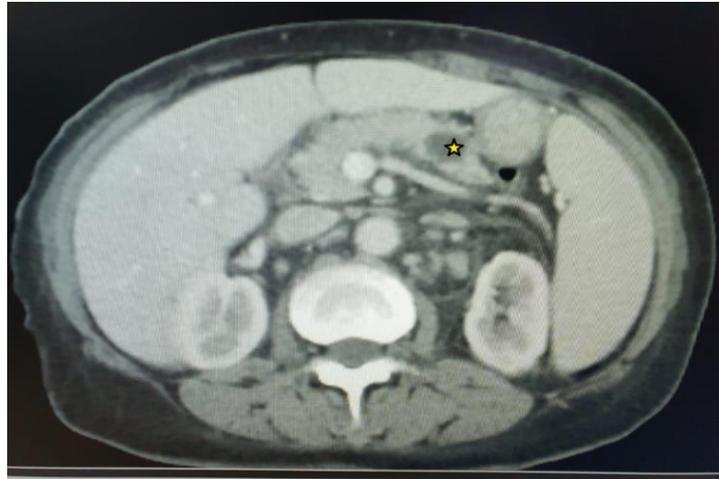


Figure 1: Abdominal CT scan showing the lesion in the pancreatic tail (asterisk)



Figure 2: Abdominal MRI image showing the lesion in the pancreatic body (asterisk)

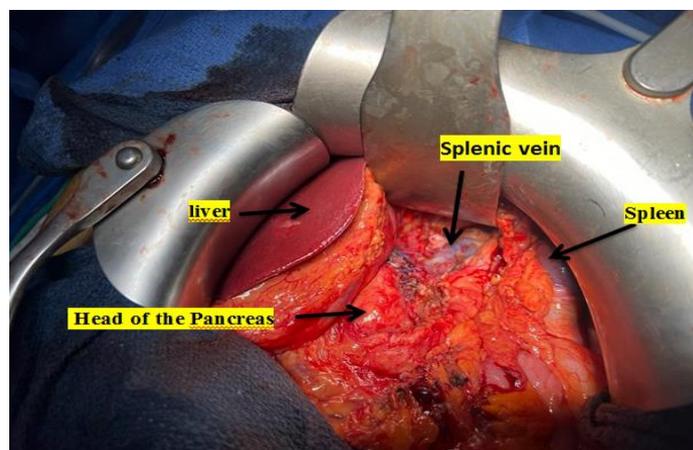
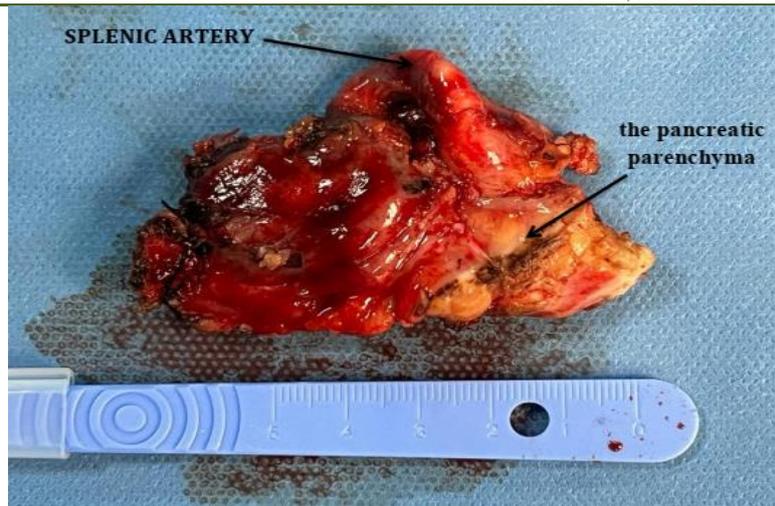


Figure 3: Intraoperative photo showing left pancreatectomy with preservation of the spleen and splenic vein



**Figure 4: Photo of left pancreatectomy surgical specime**

## DISCUSSION

Splenectomy has long been systematically associated with left pancreatectomy for technical reasons (simplicity and speed, especially in cases of inflammation) and oncological reasons (more radical excision, more extensive lymph node dissection). Currently, left pancreatectomy is frequently performed for benign lesions [5]. Splenic preservation has the advantage of maintaining hematological functions (platelet elimination) and, more importantly, the immunological functions of the spleen, avoiding the risk of infection by encapsulated germs, as well as the need for long-term vaccinations and antibiotics [5]. Retrospective studies have shown that splenic preservation reduces the risk of severe postoperative fistula or collections by filling the subphrenic space [6, 7]. It has even been suggested that splenectomy diminishes antitumor immunity and is associated with a decrease in distant survival in cases of pancreatectomy for cancer [8].

A 2014 meta-analysis [9] compared outcomes after spleen-preserving distal pancreatectomy and distal pancreatectomy with splenectomy in 879 patients for all indications, and concluded that spleen-preserving distal pancreatectomy was associated with a shorter hospital stay fewer intra-abdominal abscesses. A more recent study [10] reported high success rates (80%) for laparoscopic spleen-preserving distal pancreatectomy patients with benign and low-grade malignant disease, with no differences in postoperative morbidity in propensity score-matched patients, compared with patients who underwent distal pancreatectomy with splenectomy. The authors concluded that spleen-preserving distal pancreatectomy is preferred for benign or low-grade malignant lesions owing to the increased risk of long-term complications after distal pancreatectomy with splenectomy.

Another recent study [11] of propensity score-matched patients (35 in each group) undergoing distal

pancreatectomy for all indications found that the operating time was shorter for laparoscopic spleen-preserving distal pancreatectomy than for laparoscopic distal pancreatectomy with splenectomy. Furthermore, the authors noted higher quality-of-life (QoL) scores after spleen-preserving distal pancreatectomy. A follow-up study [12] of 160 patients with benign or low-grade malignant disease reported improved QoL (less fatigue, symptoms of flu and cold, and better health condition) after spleen-preserving distal pancreatectomy *versus* distal pancreatectomy with splenectomy.

However, the benefits of splenic preservation must be weighed against the disadvantages of incomplete resection in the case of a malignant tumor. This underscores the importance of precise characterization of the pancreatic lesion before the intervention using necessary diagnostic tools [13] to propose the most suitable excision. If splenectomy seems likely, vaccinations (antipneumococcal, antimeningococcal, and anti-Haemophilus) should be recommended 2 to 3 weeks before the non-urgent procedure [14].

## CONCLUSION

Left pancreatectomies by laparotomy can be performed with or without splenectomy, using a dissection technique that can be 'centrifugal' or 'centripetal.' The choice of technique depends on the presumed diagnosis (cancer, benign tumor, inflammatory lesion), the location of the lesion (body or tail), and local conditions (inflammation, segmental portal hypertension).

In the case of a presumed benign tumor, efforts should be made to preserve the spleen (with or without its vessels).

A 'centrifugal' approach, with initial isthmic section, is often feasible and constitutes the first step of left pancreatectomy with splenic preservation (with or without vessel resection).

The specific risk of left pancreatectomy with splenic preservation and resection of splenic vessels (Warshaw's procedure) is splenic devascularization, leading to secondary splenectomy in less than 5% of cases.

#### Consent:

Written informed consent was obtained from the patient for publication of this case report and any accompanying images.

**Competing Interests:** All authors declare no competing interest

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