



FROM SILENT CYST TO SURGICAL SPECIMEN: A RARE LONG-TERM FOLLOW-UP OF A MUCINOUS PANCREATIC NEOPLASM

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ABSTRACT

Pancreatic cystic lesions are often discovered incidentally. Distinguishing benign from pre-malignant lesions such as mucinous cystic neoplasms (MCNs) is crucial for timely intervention. We present a rare 14-year radiologic and clinical follow-up of a mucinous pancreatic cystic lesion. A 47-year-old hypertensive and diabetic woman presented with persistent left upper abdominal discomfort for 14 years. Initial imaging in 2012 revealed a small pancreatic tail cyst. Serial imaging demonstrated gradual cyst enlargement, with the lesion becoming complex and involving the spleen by 2025. Surgical intervention with distal pancreatectomy and splenectomy was performed. Histopathology confirmed a mucinous cystic neoplasm without dysplasia. This case emphasizes the importance of long-term imaging surveillance, early multidisciplinary evaluation, and timely surgical management of pancreatic cystic lesions, even when tumor markers and cytology remain inconclusive.

KEYWORDS : Pancreatic Cyst, Mucinous Cystic Neoplasm, Long-Term Follow-Up, EUS, Distal Pancreatectomy

INTRODUCTION

Pancreatic cystic lesions are increasingly detected due to the widespread use of cross-sectional imaging. While many are benign and asymptomatic, certain subtypes—particularly mucinous cystic neoplasms (MCNs) and intraductal papillary mucinous neoplasms (IPMNs)—carry malignant potential and require individualized management strategies[1,2].

MCNs are more common in middle-aged women and typically arise in the pancreatic body or tail, with characteristic ovarian-type stroma histologically [1].

The decision to proceed with surgical intervention is guided by lesion size, internal morphology, patient symptoms, biomarker levels (CEA and CA 19-9), and cytological findings [3,4]. Although cyst enlargement over time is significant, lesions without overt malignant indicators pose a management challenge. This case illustrates this diagnostic and therapeutic dilemma.

Case Study

A 47-year-old hypertensive and diabetic female presented with intermittent left upper abdominal discomfort for 14 years. She had no history of pancreatitis or significant weight loss. Surgical history included laparoscopic tubal ligation (2009).

Initial imaging - contrast-enhanced CT (CECT) in 2012 identified a 1.9×1.5 cm non-enhancing cystic lesion in the pancreatic tail near the splenic hilum, along with an incidental left adrenal adenoma. Conservative monitoring was advised due to stable imaging features.

In July 2023, repeat CECT revealed the lesion grew to 4.3×4.6 cm, became exophytic, exhibited septations, and began indenting the left kidney and splenic hilum.

Endoscopic ultrasound (EUS) revealed heterogeneous material within a 4×4 cm pancreatic tail cyst and a smaller 1×1 cm body lesion. EUS-guided fine needle aspiration (FNA) yielded benign cytology, prompting provisional diagnosis as MCN [5].

In March 2025, abdominal ultrasound showed further enlargement (5.5×4.2 cm), increased internal septations,

and debris. Tumor markers (CEA, CA 19-9) remained within normal range.

Subsequent CECT (March 2025) reported growth to $5.6 \times 5.5 \times 4.8$ cm, abutment with splenic vessels, and a new cyst in the uncinate process (12.8×9.8 mm). Bilateral adrenal lesions were also observed; pheochromocytoma was excluded (normetanephrine: 21.3 pg/ml; normal: 0–216).

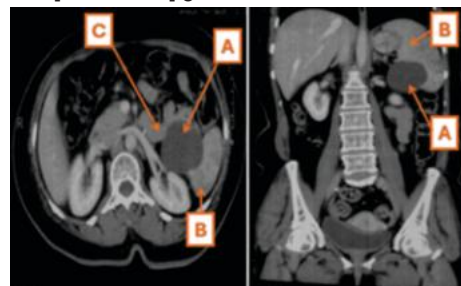


Figure 5: Axial & Coronal images of Venous Phase CECT March 2025 Showing: A – Large Pancreatic Tail Cyst with Abutting Splenic Vessels; B – Spleen; C: Pancreas

MRI March 2025 Confirming the Previous CT Findings Demonstrated Diffusion Restriction and Chronic Splenic Infarcts, Complicating Surgical Planning.



Figure 5: Axial T2-weighted MRI March 2025 Showing: A – Small Cyst in Uncinate Process of Pancreas; B – Large Septated Pancreatic Tail Cyst with Internal Debris & Abutting Spleen; C: Spleen

Considering lesion complexity, size, and possible neoplastic transformation, elective distal pancreatectomy with splenectomy was performed on June 5, 2025.

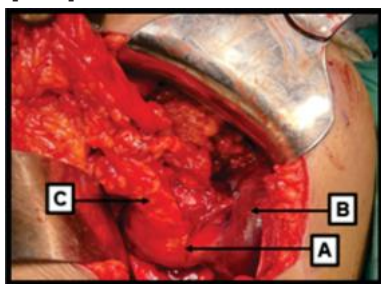


Figure 6: Intraoperative Picture of Lesion: A: Cystic Lesion; B: Spleen, C: Distal Part of Pancreas & Cystic Lesion

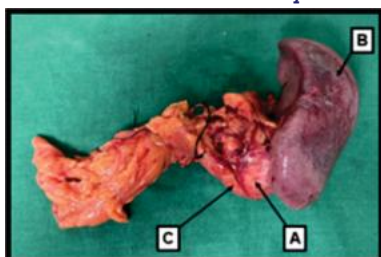


Fig. 6 – Resected Specimen with Labelled Adjacent Structures: A: Cystic Lesion; B: Spleen, C: Distal Part of Pancreas & Cystic Lesion

Histopathology confirmed a mucinous cystic neoplasm without dysplasia, fibrocongestive splenic changes, and reactive lymphadenitis.



Fig. 6 – Gross Specimen with Labelled Adjacent Structures: A: Cystic Lesion; B: Spleen, C: Distal Part of Pancreas & Cystic Lesion

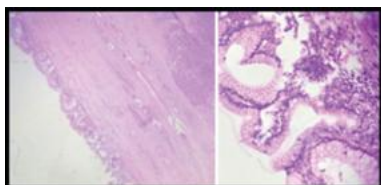


Figure 7: Histopathology Image Showing MCN without Dysplasia

Pancreatic Cyst Timeline

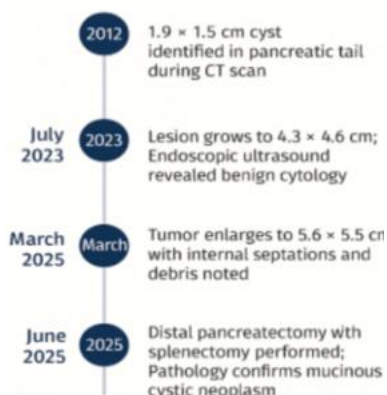


Figure 1: Timeline Summarizing 14-year Follow-up of Pancreatic Cyst from 2012 to 2025

DISCUSSION

This case underscores the critical impact of lesion growth and imaging features in surgical decision-making for pancreatic cysts. Despite negative cytology and normal tumor markers, the progressive size and morphological complexity warranted definitive management [3].

By 2025, the cyst was intimately related to splenic vessels and adjacent structures, complicating surgical planning and necessitating splenectomy. Earlier surgical consideration (circa 2023), when lesion margins were distinct, might have allowed organ preservation.

Patient hesitancy, possibly influenced by longstanding clinical stability and reassuring cytological and biochemical findings, potentially contributed to delayed intervention.

Furthermore, lesion growth created diagnostic uncertainty between pancreatic and splenic origin, emphasizing early multidisciplinary collaboration.

This case reinforces incorporating radiological markers—such as cyst size exceeding 3 cm, septations, and interval enlargement—in surgical timing decisions, even without overt biochemical or cytological malignancy indicators [1,2].

CONCLUSION

This case highlights the significance of timely intervention in pancreatic cysts demonstrating progressive radiologic complexity, even when tumor markers and cytology remain reassuring. Delay can result in anatomical distortion, complicating surgical planning and limiting organ preservation.

Multidisciplinary input and patient-centered discussions remain essential for optimal clinical outcomes.

Key Learning Points

- Progressive growth and imaging complexity, even with normal tumor markers, warrant early surgical consideration.
- Cyst size >3 cm, internal septations, and anatomical proximity to vessels are significant radiological red flags.
- Early intervention may allow organ-preserving procedures; delays increase surgical complexity.
- Advanced lesions may radiologically simulate splenic origin, complicating pre-operative diagnosis.
- Integrated multidisciplinary evaluation is critical in surgical decision-making.

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