



Case Report

Unusual case report: Nodule of heterotopic pancreatic tissue found attached to the gall bladder wall

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ABSTRACT

The occurrence of heterotopic pancreas, an uncommon developmental abnormality, is frequently detected as an incidental finding. In a histopathological study, a 35-year-old woman with cholecystitis was unexpectedly found to have a 5 mm diameter heterotopic pancreatic tissue attached to the gallbladder wall, presenting as a nodule. Following the surgical removal of the gallbladder (cholecystectomy), the patient experienced a smooth recovery. Identifying this condition may offer valuable insights into its clinical significance.

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1. Introduction

Heterotopic Pancreas (HP) is defined as the congenital existence of pancreatic tissue outside its normal place without any anatomical or circulatory connections to the main pancreas.¹ Despite being a congenital anomaly, it is diagnosed later in adults as it exhibits no symptoms. Though suggestions have been put out to explain it, there is no agreement on the precise genesis of HP. One embraced the theory that pancreatic tissue separation occurs during embryonic rotation, leading to the formation of HP.² Another idea contends that the migration of some cells from pancreatic buds, which results in HP in various locations, is caused by the intestines' longitudinal expansion.² The notch signalling system's irregularity is system is a recently accepted theory, which believes that irregularity in the signalling system that decides the destiny of pancreatic cells, specifically abnormalities in Hes-1 (Hairy/enhancer of split), might be a contributor to the formation of HP in the gallbladder.³ The ectopic pancreas can be seen anywhere

along the gastrointestinal tract, and it is mainly encountered in the stomach, duodenum, and colon with percentages of 27.5%, 25.5%, and 15.9%, respectively.⁴ The gall bladder is an extremely rare localisation of ectopic pancreatic tissue, and only 38 cases have been reported till 2020.

In this case report, we present a case of heterotopic pancreatic tissue in a 35-year-old female, and the current literature has been reviewed.

2. Case Report

2.1. Patient details and medical data

A 35-year-old female patient presented with a history of mild yellowish discoloration of the sclera and skin, along with fatty dyspepsia aggravated by meals. Physical examination showed tenderness in the right upper abdomen, without protective or rebound tenderness, and no significant medical or surgical history.

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2.2. Laboratory results and radiological findings

Laboratory tests revealed elevated alkaline phosphatase (106 U/L), gamma-glutamyl transferase (79 U/L), total bilirubin (20.9 $\mu\text{mol/L}$), and conjugated bilirubin (10 $\mu\text{mol/L}$) levels, indicating obstructive jaundice. Serum amylase and lipase levels were also slightly elevated. Ultrasound showed gallbladder stones, bile sludge, and minimal wall oedema, leading to a preoperative diagnosis of chronic cholecystitis with obstructive jaundice.

2.3. Treatment approach

Conservative medical therapy was used to manage pain and jaundice, followed by laparoscopic cholecystectomy to prevent recurrence.

2.4. Histopathological examination

During gross examination, a gallbladder measuring 70x25 mm was identified, with an average wall thickness of 3.5 mm. On the cut section, notable findings included focal ulcerations of the mucosa, a hard intramural nodule measuring 5 mm in the neck area, thick bile sludge, and small stones in the lumen. Microscopic examination of H and E sections analysis revealed abnormal pancreatic tissue in the gallbladder neck, with both exocrine and endocrine pancreatic tissue present. Chronic inflammatory reactions consistent with chronic cholecystitis were noted in the remaining sections, with no dysplasia or malignancy detected.

2.5. Follow up

Recovery after surgery was smooth and uneventful, and none of the symptoms persisted. No complications have been reported so far.

3. Discussion

HP is an infrequent congenital entity. HP can occur anywhere in the gastrointestinal tract. The most frequent locations are the stomach, duodenum and jejunum.^{5,6} By contrast, ectopic pancreas in the oesophagus, gallbladder, mesentery, spleen, mediastinum or fallopian tubes is rare.^{5,6} However, the gallbladder is an extremely rare site for the HP.⁶ The first reported case of HP in the gallbladder dates back to 1916.⁷ Until the present study, only >40 cases of HP in the gallbladder have been reported worldwide.⁸ A case series of 212 cases of HP performed by the Mayo Clinic revealed only one case of HP in the gallbladder.⁹ Pancreatic heterotopia can occur at any age but is most often found in the 4th–6th decade of life. Meanwhile, the male-to-female ratio of HP in the gastrointestinal system is 3:1.¹⁰ In our case, the patient is a female in her 3rd decade.

Our literature review showed that HP in the gallbladder is probably due to the higher number of cholecystectomies

in female patients. Most cases are asymptomatic, and histologically discovered tissue is usually benign. However, heterotopic tissue can cause symptoms related to its location, including jaundice due to obstruction of the bile duct, cholelithiasis, cholecystitis, intussusception and gastrointestinal haemorrhage.¹¹ Although ectopic pancreas is usually found incidentally, it nonetheless has the potential to develop all of the metaplastic and neoplastic changes that occur in the normally located pancreas, including acute or chronic pancreatitis, cyst formation, calcification, pancreatic cancers, and endocrine tumours.^{11,12} Therefore, complete excision of incidentally found pancreatic tissue is the treatment of choice. Cholecystectomy is adequate in cases of heterotopic pancreatic rests in the gallbladder.¹³ Only a few reported cases exist, but the clinical and radiological features are poorly defined.¹⁴ Preoperative diagnosis of this rare finding is impossible due to nonspecific features, and definitive diagnosis is only possible by histopathological examination.^{12,15}

4. Conclusion

The gallbladder Heterotopic Pancreas is an extremely uncommon finding typically discovered during pathological examinations. Because of its non-specific clinical features, diagnosing this condition before surgery is difficult. Surgical intervention is the only effective treatment. Improved awareness of this condition can help its timely recognition and provide further insights into its clinical significance.

5. Abbreviations

Heterotopic Pancreas (HP).

6. Source of Funding

None.

7. Conflict of Interest

None.

References

1. Shiwani MH, Gosling J. Heterotopic pancreas of the gallbladder associated with chronic cholecystitis. *J Pancreas*. 2008;9(1):30–2.
2. Hlavaty T, Lukac L, Vyskocil M, Galbavy S. Heterotopic pancreas in gastric antrum with macroscopic appearance of gastric polyp. *Bratisl Lek Listy*. 2002;103(3):117–20.
3. Weppner JL, Wilson MR, Ricca R, Lucha PA. Heterotopic pancreatic tissue obstructing the gallbladder neck: a case report. *J Pancreas*. 2009;10(5):532–4.
4. Wlaz J, Mądro A, Kaźmierak W, Celiński K, Słomka M. Pancreatic and gastric heterotopy in the gastrointestinal tract. *Postepy Hig Med Dosw*. 2014;68:1069–75.
5. Murayama H, Kikuchi M, Imai T, Yamamoto Y, Iwata Y. A case of heterotopic pancreas in lymph node. *Virchows Arch Pathol Anat Histol*. 1978;377(2):175–9.

6. Al-Shraim M, Rabie ME, Elhakeem H, Kandeel A, Shah MT, Jamil S, et al. Pancreatic heterotopia in the gallbladder associated with chronic cholecystitis: a rare combination. *J Pancreas*. 2010;11(5):464–6.
7. Marcano AL, Gonzales JD, Ramia JM, Alonso S, Kuhnhardt A, Perna C, et al. Heterotopic pancreatic tissue in the gallbladder. *Arch Clin Exp Surg*. 2015;5(4). doi:10.5455/aces.20151012123519.
8. Sharma SP, Sohail SK, Makkawi S, Abdalla E. Heterotopic pancreatic tissue in the gallbladder. *Saudi Med J*. 2018;39(8):834–7.
9. Klimis T, Roukounakis N, Kafetzis I, Mouziouras V, Karantonis I, Andromanakos N, et al. Heterotopic pancreas of the gallbladder associated with chronic cholecystitis and high levels of amylasuria. *J Pancreas*. 2011;12(5):458–60.
10. Yuan Z, Chen J, Zheng Q, Huang XY, Yang Z, Tang J, et al. Heterotopic pancreas in the gastrointestinal tract. *World J Gastroenterol*. 2009;15(29):3701–3.
11. Filip R, Walczak E, Huk J, Radzki RP, Bieńko M. Heterotopic pancreatic tissue in the gastric cardia: a case report and literature review. *World J Gastroenterol*. 2014;20(44):16779–81.
12. Bau PC, Lucchese A, Hohmann FB, Silva VD, Marcal JMB. Ectopic pancreatic tissue in a gallbladder. *SOJ Surg*. 2016;3(3):1–2.
13. Al-Shraim M, Rabie ME, Elhakeem H, Kandeel A, Shah MT, Jamil S. Pancreatic heterotopia in the gallbladder associated with chronic cholecystitis: a rare combination. *JOP*. 2010;11:464–466.
14. Basrur GB, Utture SK, Deshpande AA. Heterotopic pancreas in the gallbladder. *Indian J Surg*. 2016;78(5):429–30.
15. Cárdenas EMS, Humanes RS, Fernández AIL, Nieto RD, Muñoz MAS. Ectopic pancreas in gallbladder. Clinical significance, diagnostic and therapeutic implications. *Rev Esp Enferm Dig*. 2015;107(11):701–3.

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