

Ectopic Pancreas Presenting as Ileoileal Intussusception

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DOI: [10.36347/sjmcr.2022.v10i03.011](https://doi.org/10.36347/sjmcr.2022.v10i03.011)

| Received: 05.02.2022 | Accepted: 08.03.2022 | Published: 13.03.2022

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Abstract

Case Report

Introduction: Intussusception is defined as the telescoping of a segment of the gastrointestinal tract into an adjacent one. Pancreatic heterotopia is defined as the presence, outside its usual location, of pancreatic tissue which lacks anatomical and vascular continuity with the pancreas proper. Ectopic pancreatic tissue may be found throughout the entire gastrointestinal track and is often asymptomatic. Surgical excision is potentially curative for EP. **Case Report:** A 34 years old male presented with severe abdominal pain and distension, intermittent vomiting, not relieved with medications. The sign, symptoms and USG suggested intestinal obstruction. Exploratory laprotomy was done, intussusceptions was reduced. An ileal loop was found to be the cause of intussusceptions which was removed along with small segment of adjacent bowel and sent for the histological examination revealed a presence of pancreatic tissue within lipomatous polyp made up of pancreatic acini and dilated ducts. **Conclusion:** Ectopic pancreas is a rare condition that lead to ileal intussusception. Despite the development of modern diagnostic modalities, its diagnosis continues to be a challenging one. It is often diagnosed incidentally on histopathological examination and should be considered in differential diagnosis of intestinal mass lesions.

Keywords: Ectopic Pancreas, Ileum, Intussusception.

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INTRODUCTION

Intussusception is defined as the telescoping of a segment of the gastrointestinal tract into an adjacent one [1]. Pancreatic heterotopia is defined as the presence, outside its usual location, of pancreatic tissue which lacks anatomical and vascular continuity with the pancreas proper [2]. Ectopic pancreatic tissue may be found throughout the entire gastrointestinal track and is often asymptomatic [3, 4]. It is usually silent but it may become clinically evident when complicated by inflammation, bleeding, obstruction or malignant transformation [5]. Surgical excision is potentially curative for EP [6]. Surgical excision can provide tissue for histological diagnosis and can serve to rule out malignancy [7].

CASE REPORT

A 34-year-old male was referred to the gastroenterology clinic with acute onset of abdominal pain post meal which was not relieved by medication. No history of similar episode or any other symptoms in the past. Clinical examination was unremarkable. Initial blood tests included normal full blood count,

biochemistry and erythrocytes sedimentation rate (ESR). Ultra Sonography abdomen was suggestive of bowel within bowel appearance with internal echogenic area (short segment of intussusception in right para-umbilical position: ileo-ileal intussusception). CT Scan showed evidence of dense area measuring 2.7x2.3cm within lumen of intussusceptions. Emergency exploratory laparotomy was performed. Intra-operative findings were ileo ileal Intussusception 12-16cm proximal to ileo caecal junction, segment of around 5 cm of the ileum was resected and primary anastomosis was done. Resected segment was sent for histopathological examination. On gross examination, yellowish greasy nodule resembling lipomatous polyp measuring 2.5cm x1.5cm x1.4cm in size, was covered with normal ileal mucosa and no ulcer or erosion was seen on the mucosal surface (Fig 1). The histological examination revealed a presence of pancreatic tissue within lipomatous polyp made up of pancreatic acini and dilated ducts (Fig 2). The overlying mucosa showed congestion. Islets of Langerhans were not demonstrated. Patient was discharged on 7th postoperative day and was followed uneventfully.

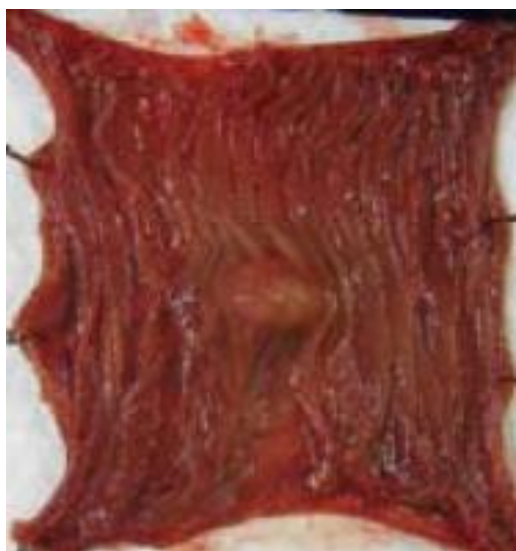


Fig 1: Yellowish greasy nodule

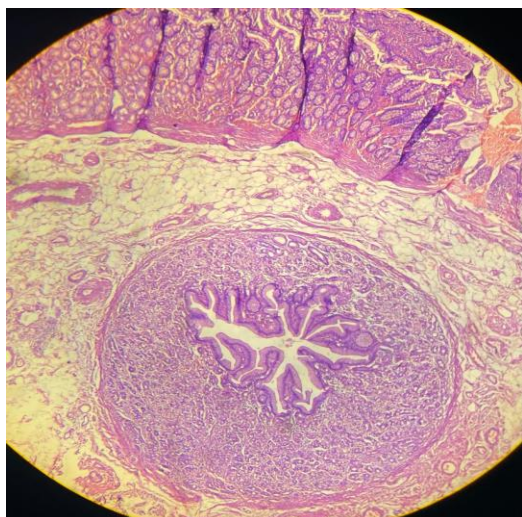


Fig 2: Pancreatic acini and dilated ducts

DISCUSSION

As stated by Hunt and Bonesteel [8] the first case of heterotopic pancreas was reported by Schultz in 1729, and Klob provided its histological confirmation in 1859 [9]. Ectopic pancreas occurs in 0.25%-13.7% of patients based on both autopsy and surgical series [10]. In adults it occurs preferentially in males between the fourth and sixth decades of life. It is found mainly in the stomach, duodenum, jejunum and in much smaller proportions in the ileum and Meckel's diverticulum, while it is rarely found in the esophagus, liver, gallbladder, omentum, lungs, mediastinum, fallopian tubes and umbilicus [11]. While the aetiology of HP

remains unknown, the sites in which HP can be found are partially explained by the most widely accepted embryological theory which is the "misplacement theory". According to this theory, along the path of embryologic development of the pancreas, as the ventral and dorsal parts of pancreas approximate and fuse, small deposits of pancreatic tissue are dropped in the foregut of the fetus. These tissues later on develop into mature HP in the gastrointestinal tract [12-14]. Other less favourable theories include the metaplasia theory and the totipotent cell theory. Most patients with ectopic pancreas are asymptomatic and diagnosis is usually performed during radiological examination or endoscopy of the digestive tract or during surgical explorations motivated by other diseases [11]. When symptomatic, about 30% of total mimic clinical symptoms similar to diseases that affect the organ in which the heterotopia is located [15]. Usually they present in the form of small yellowish nodules, ranging from 1mm to 5cm, typically covered by intact mucosa, and often exhibit a central hole representing exteriorization of the rudimentary pancreatic duct [16]. The ectopic pancreatic tissue is detected more frequently in the submucosa and muscularis propria layers of the gastrointestinal tract and may be observed in the sub-serosa or even in the serosa of the affected segment [11]. The histological morphology of EP tissue can be classified according to Heinrich's criteria, proposed in 1909 [17]. Type 1 EP tissue contains cells of exocrine glands, excretory ducts and islets of Langerhans; type 2 contains only excretory glands and excretory ducts; type 3 contains only excretory ducts [18]. In 1973, Gasper-Fuentes proposed a modified version of the Heinrich criteria, comprising of four types of EP tissue:

- Type I: typical pancreatic tissue composed of acini, ducts and islet cells;
- Type II: the canalicular variety composed of pancreatic ducts only;
- Type III: exocrine pancreas composed of acinar tissue only;
- Type IV: endocrine pancreas—islet cells only.

The patient reported herein is classified under type II & type III.

Intussusception is primarily a disease of children with only about 5% of cases occurring in adults [19]. The causes of intussusception are summarised in Table 1.

Table 1: Causes of small and large bowel intussusception in adults [20]

| Causes | Colonic Intussusception | Small Bowel Intussusception |
|---|-------------------------|-----------------------------|
| Malignant tumors (eg. carcinoid, adenocarcinoma, lymphoma) | 48% | 17% |
| Benign tumors (eg. leiomyomas, pancreatic heterotopia) | 21% | 40% |
| Other causes (eg. idiopathic, post-operative) | 31% | 43% |

The preoperative diagnosis of ectopic pancreas in the small bowel appears to be difficult. However, there are some recent reports describing ectopic pancreas in the small bowel discovered by double-balloon enteroscopy or capsule endoscopy [21]. This disease is treated in principle by surgical resection if bowel intussusception or ileus occurs [22]. Moreover, physicians should be aware that ectopic pancreas in the small bowel may associate with endocrine tumor or carcinoma [23].

CONCLUSION

Ectopic pancreas is a rare condition that lead to ileal intussusception. Despite the development of modern diagnostic modalities, its diagnosis continues to be a challenging one. It is often diagnosed incidentally on histopathological examination and should be considered in differential diagnosis of intestinal mass lesions. Surgical excision provides symptomatic relief. The possibility of complications like pancreatitis, pseudocyst formation, and malignant transformation of EP tissue supports the surgical excision of EP tissue that is found incidentally.

REFERENCES

- Chandra, N., Campbell, S., Gibson, M., Reece-Smith, H., & Mee, A. (2004). Intussusception caused by a heterotopic pancreas. Case report and literature review. *JOP*, 5(6), 476-479.
- Martinez, N. S., Morlock, C. G., Dockerty, M. B., Waugh, J. M., & Weber, H. M. (1958). Heterotopic pancreatic tissue involving the stomach. *Annals of Surgery*, 147(1), 1-12.
- Rezvani, M., Menias, C., Sandrasegaran, K., Olpin, J. D., Elsayes, K. M., & Shaaban, A. M. (2017). Heterotopic pancreas: histopathologic features, imaging findings, and complications. *Radiographics*, 37(2), 484-499.
- So, H. F., Cross, T. J., & Zonta, M. (2018). A case report of incidental ectopic pancreatic tissue during laparoscopic appendectomy. *International journal of surgery case reports*, 45, 77-78.
- Gokhale, U. A., Annu, N., Pillai, R., & Al-Layla, D. (2010). Heterotopic pancreas in the stomach: a case report and a brief review of the literature. *Journal of the Pancreas*, 11(3), 255-257.
- Erkan, N., Vardar, E., & Vardar, R. (2007). Heterotopic pancreas: report of two cases. *JoP*, 8(5), 588-591.
- Sathyanarayana, S. A., Deutsch, G. B., Bajaj, J., Friedman, B., Bansal, R., Molmenti, E., ... & Coppa, G. F. (2012). Ectopic pancreas: a diagnostic dilemma. *International Journal of Angiology*, 21(03), 177-180.
- HUNT, V. C., & Bonesteel, H. T. S. (1934). Meckel's diverticulum containing aberrant pancreas. *Archives of Surgery*, 28(3), 425-439.
- Klob, J. (1859). Pancreas accessorium. *Zeitschrift der Kaiserl. Königl. Gesellschaft der Aerzte zu Wien*, 15, 732.
- Tanaka, K., Tsunoda, T., Eto, T., Yamada, M., Tajima, Y., Shimogama, H., ... & Izawa, K. (1993). Diagnosis and management of heterotopic pancreas. *International surgery*, 78(1), 32-35.
- Bromberg, S. H., Camilo Neto, C., Borges, A. F. A., Franco, M. I. F., França, L. C. M., & Yamaguchi, N. (2010). Pancreatic heterotopias: clinicopathological analysis of 18 patients. *Revista do Colégio Brasileiro de Cirurgiões*, 37, 413-419.
- Rezvani, M., Menias, C., Sandrasegaran, K., Olpin, J. D., Elsayes, K. M., & Shaaban, A. M. (2017). Heterotopic pancreas: histopathologic features, imaging findings, and complications. *Radiographics*, 37(2), 484-499.
- Sathyanarayana, S. A., Deutsch, G. B., Bajaj, J., Friedman, B., Bansal, R., Molmenti, E., ... & Coppa, G. F. (2012). Ectopic pancreas: a diagnostic dilemma. *International Journal of Angiology*, 21(03), 177-180.
- Uslu, N. (2013). Ectopic (heterotopic) pancreas in the mesentery of the jejunum: Imaging findings. *CRCM*, 2, 277-280.
- Gokhale, U. A., Annu, N., Pillai, R., & Al-Layla, D. (2010). Heterotopic pancreas in the stomach: a case report and a brief review of the literature. *Journal of the Pancreas*, 11(3), 255-257.
- Heinrich, H. (1909). The histology of a contributory tissue. Accessory pancreas. *Virchows Arch Pathol Anat*, 198, 392-401.
- Christodoulidis, G., Zacharoulis, D., Barbanis, S., Katsogridakis, E., & Hatzitheofilou, K. (2007). Heterotopic pancreas in the stomach: a case report and literature review. *World journal of gastroenterology: WJG*, 13(45), 6098-6100.
- Kilius, A., Samalavicius, N. E., Danys, D., Zaldokas, G., & Seinis, D. (2015). Asymptomatic heterotopic pancreas in Meckel's diverticulum: a case report and review of the literature. *Journal of Medical Case Reports*, 9(1), 1-4.
- Ponka, J. L. (1967). Intussusception in infants and adults. *Surgery, Gynecology & Obstetrics*, 124(1), 99-105.
- Felix, E. L., Cohen, M. H., Bernstein, A. D., & Schwartz, J. H. (1976). Adult intussusception: case report of recurrent intussusception and review of the literature. *The American journal of surgery*, 131(6), 758-761.
- Tsurumaru, D., Utsunomiya, T., Kayashima, K., Matsuura, S., Nishihara, Y., Yao, T., ... & Honda, H. (2007). Heterotopic pancreas of the jejunum diagnosed by double-balloon enteroscopy. *Gastrointestinal endoscopy*, 66(5), 1026-1027.
- Tekin, A., Aksoy, F., Vatanssev, C., Kücükkartallar, T., Belviranlı, M., & Toy, H. (2008). A rare cause of ileus: invagination due to ectopic pancreas. *Acta Chirurgica Belgica*, 108(3), 343-345.
- Ogata, M., Chihara, N., Matsunobu, T., Koizumi, M., Yoshino, M., Shioya, T., ... & Matsumoto, K. (2007). A case of intra-abdominal endocrine tumor possibly arising from an ectopic pancreas. *Journal of Nippon Medical School*, 74(2), 168-172.