

# CT features of asymptomatic heterotopic pancreas in jejunal mesentery

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## ABSTRACT

Heterotopic pancreas (HP) is localized pancreatic tissue that has no relation to orthotopic pancreas and has its own channel and vascular structures. Usually, the submucosa is located in the upper gastrointestinal tract; mesenteric placement is rarely reported. It is frequently asymptomatic and is detected incidentally in imaging, laparotomies, or autopsies. Rarely, pancreatitis may be the cause of small bowel obstruction, massive gastrointestinal bleeding, and malignant transformation. However, this has usually been reported in localized submucosal HP cases. The imaging findings are typical, and the diagnosis can be verified without the need for a histopathological diagnosis. In this case report, we aimed to present the imaging findings of asymptomatic HP located in the proximal jejunum mesentery of a 44-year-old woman. To avoid unnecessary surgical procedures, the characteristic imaging findings of HP are understood and should be considered in the differential diagnosis of masses seen in the mesentery.

**Keywords:** Heterotopic pancreas, jejunal mesentery, computerized tomography, asymptomatic

## INTRODUCTION

Heterotopic pancreas (HP) is defined as the pancreatic tissue located in the anatomical and vascular continuity of the orthotopic pancreas, which has its own channel and vascular structure and is located in abnormal localizations (1). These anomalies are frequently reported to be located in the upper gastrointestinal tract and more rarely in the Meckel's diverticulum, bile duct, and mediastinum (2,3). The mesenteric site is very rare and has been reported in the literature in only a few cases (4-6). HP sizes are often small, ranging from a few millimeters to a few centimeters. It is often asymptomatic and is incidentally detected in imaging, laparotomy, or autopsies. Little information is available about HP imaging findings, and it is often described as a round and lobulated mass in the upper gastrointestinal tract (7-9). In this case report, we aimed to present the imaging findings of asymptomatic HP located in the jejunal mesentery.

## CASE PRESENTATION

A 44-year-old female patient was admitted to our emergency room with complaints of abdominal pain. A physical examination revealed extensive abdominal tenderness, no defenses, and rebound. No features were found in her medical history, indicating that she had no similar pain

before. Laboratory findings were unremarkable. There was no evidence to reveal the symptoms of ultrasonography (USG). Contrast-enhanced computed tomography (CT) (Discovery CT750 HD; GE Healthcare) revealed soft tissue that was located in the proximal jejunum mesentery, in contact with the jejunum wall, in the anterior vicinity of the pancreatic tail and not in relation to the normal pancreas (Figure 1). It was seen that this soft tissue had similar lobulation and contour features as the pancreas, similar contrast enhancement, and thin tract compatible with the duct (Figure 2). In addition, this soft tissue had its own vascular structures (Figure 3). There was no evidence to suggest small bowel obstruction. The patient complained of spontaneous regression of abdominal pain within a few hours, and the symptoms were thought to be independent of the soft tissue observed in the CT. It was concluded that the soft tissue seen in the CT with typical imaging findings is HP located in the jejunum mesentery. The risk of developing malignancy in this case was considered in the follow-up program. This program was planned as an annual contrast-enhanced CT scan. The follow-up examination demonstrates that no symptom of malignancy was detected for two years from HP. Written informed consent was obtained from the patient for publishing this case.

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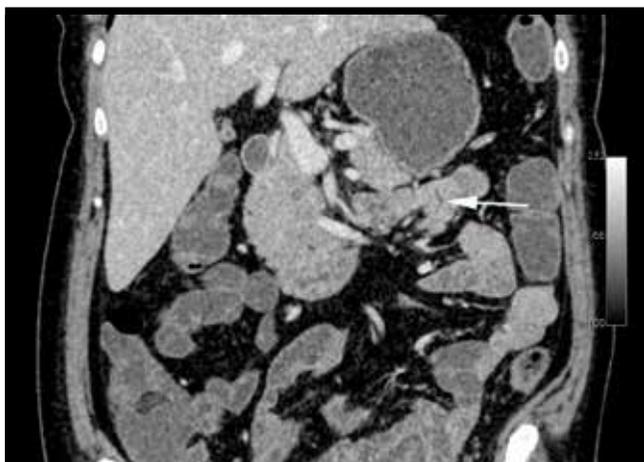
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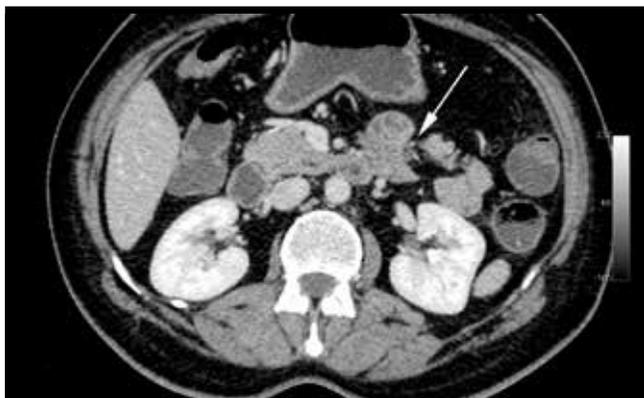
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**Figure 1.** Axial contrast-enhanced CT image shows soft tissues of the proximal jejunal mesentery that are not related to the orthotopic pancreas and have similar morphological features (arrow)



**Figure 2.** Coronal contrast-enhanced CT image shows a thin duct-like structure in the soft tissue (arrow)



**Figure 3.** Axial contrast-enhanced CT image shows the soft tissue's own vascular structure (arrow)

## DISCUSSION

Heterotopic pancreas may be due to acquired abnormalities such as congenital or glandular metaplasia that develop in the bowel submucosa (10). It is found in 2-15% of the autopsies, 30% in the stomach wall of the antrum, 30% in the duodenum, and 20% in the jejunum (8,11). In the gastrointestinal tract, HP has been reported to be seen as a localized submucosal nodule or mass, usually less than 3 cm (9). There are several theories to explain the occurrence of HP. The most accepted theory is that the cases of HP located near the pancreas in the upper gastrointestinal tract are due to the incorrect placement of the dorsal and ventral pancreatic buds during the embryological period, resulting in tissue separation during fusion (8).

Three types of HP cases have been described in the first histological classification system (12). The first and most common type of HP tissue is composed of all the elements of the orthotopic pancreas, including acini, ducts, and islet cells. The second and third histologic types are dominated by either acini or ducts. In addition to this classification system, HP containing only islet cells is described as the fourth histological type (12). Multiple studies indicate that the contrast enhancement properties and homogeneity of HP correlate with its histologic composition (13,14).

The clinical significance of HP is controversial. Although severe complications such as pancreatitis, small intestinal obstruction, massive gastrointestinal bleeding, and malign transformation have been reported, HP is often incidentally detected (7-9). The described complications are also seen in HP cases with mucosal or submucosal localization. In our present case, HP was located in the jejunal mesentery, although it was observed in contact with the jejunum wall, it did not cause any clinical symptoms.

The imaging findings of HP are typical. Usually, the CT of the orthotopic pancreas creates a soft tissue-like appearance that mimics similar contours and lobulation features and similarly enhances the mesentery longitudinal axis (4,6). The contrast enhancement properties of HP may, in some cases, be different from orthotopic pancreas, which is due to the density of the contained acinus and islet cells. In these cases, it may be difficult to distinguish HP from lymphoma, gastrointestinal stromal tumor (GIST), leiomyoma, and accessory pathology (15). In HP, the orthotopic pancreas can mimic a thin duct-like structure, and this HP is a very helpful finding in distinguishing other diagnoses. Magnetic resonance cholangiopancreatography (MRCP)

can be used in cases where the canal structure cannot be demonstrated with CT. Lymphadenopathy, adjacent tissue, organ invasion in malignant conditions, and other organ metastases are not seen in HP and can be used in differential diagnoses (11). In our case, there was soft tissue with similar contrasting, lobulation, and contour features and a thin duct-like structure that was similar to the orthotopic pancreas. Typical imaging findings in CT were diagnosed without MRCP or interventional procedures. In our case report, although the absence of pathological confirmation was seen as a limitation, a typical CT image was recognized and the patient was followed-up.

Surgery is a controversial issue in mesenteric HP cases. In the literature, mesenteric HP cases greater than 1.5 cm in size are of clinical importance (16). In the case of asymptomatic mesenteric HP, there is no consensus regarding the size required for surgery.

In conclusion, HP is rarely seen in the mesentery, and it usually does not cause any clinical symptoms. It is seen as soft tissue with morphological features similar to the orthotopic pancreas. A diagnosis in the presence of typical findings is easy, and no pathological confirmation is required. Finally, reducing unnecessary surgeries should be considered as the characteristic imaging feature of HP and should be kept in mind in the mass of soft tissue observed in the mesentery. In addition, even if incidentally detected, the risk of malignancy in HP cases should be followed-up.

**Informed Consent:** Written informed consent was obtained from the patient who participated in this study.

**Peer-review:** Externally peer-reviewed.

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