

Incidental ectopic pancreas during upper gastrointestinal endoscopy

Durmus Ali Cetin¹, Huseyin Ciyiltepe², Ulas Aday³, Ebubekir Gundes⁴, Kamuran Cumhuri Deger⁵, Mustafa Duman⁵

¹Sanliurfa Education and Training Hospital, Department of Gastroenterological Surgery, Sanliurfa, Turkey

²Fatih Sultan Mehmet Education and Training Hospital, Department of Gastroenterological Surgery, Istanbul, Turkey

³Elazig Education and Training Hospital, Department of Gastroenterological Surgery, Elazig, Turkey

⁴Diyarbakir Gazi Yaşargil Education and Training Hospital, Department of Gastroenterological Surgery, Diyarbakir, Turkey

⁵Kartal Kosuyolu High Speciality Education and Training Hospital, Department of Gastroenterological Surgery, Istanbul, Turkey

Copyright © 2018 by authors and Annals of Medical Research Publishing Inc.

Abstract

Aim: Ectopic pancreas is a rare developmental anomaly which is detected incidentally in general. Frequently, it is an incidental finding and can be detected in various regions of gastrointestinal system. It can be readily recognized by its crater-like appearance at gastric antrum adjacent to pylori during upper gastrointestinal endoscopy. Here, we presented characteristics of cases with ectopic pancreas which was detected incidentally during upper gastrointestinal endoscopy performed for other reasons.

Material and Methods: We retrospectively reviewed upper gastrointestinal endoscopy evaluations performed in our endoscopy unit between January 2012 and December 2015. Age, gender, endoscopy indication, endoscopic findings, and histopathological findings, if available, were recorded in all patients with ectopic pancreas.

Results: Overall, 9850 patients underwent upper gastrointestinal endoscopy between January 2012 and December 2015; of these, findings compatible to ectopic pancreas were observed in 14 patients (0.14%). Those were 4 males (28.5%) and 10 females (71.5%). Mean age was 49 years (29-69 years) in these patients. Ectopic pancreas tissue was detected at gastric antrum of all patients. Mean size was 8.5 mm (5-15 mm) in lesions detected. Histopathological examination was performed in 9 patients (64.2%) and chronic gastritis was observed in all of these patients.

Conclusion: Ectopic pancreas should be kept in mind in the differential diagnosis of several gastrointestinal submucosal lesions although it is rarely seen.

Keywords: Ectopic Pancreas; Endoscopy; Upper Gastrointestinal System.

INTRODUCTION

Ectopic pancreas, where pancreas tissue has abnormal localization, is a rare developmental anomaly detected incidentally in general. Its incidence is 0.55-13.7% in autopsy series (1,2). It can be readily recognized by its small, crater-like appearance at gastric antrum adjacent to pylor during upper gastrointestinal endoscopy. Ectopic pancreas is generally asymptomatic.

It may present with dysphagia, gastrointestinal bleeding, gastric ulcer, pyloric stenosis, pancreatitis, and obstructive jaundice depending on localization (3). In addition, ectopic pancreas may be detected incidentally during surgical resection of gastrointestinal tumors. In a recent cases series, it was reported that approximately one-third of

ectopic pancreas cases are detected incidentally (4). Here, we presented characteristics of cases with ectopic pancreas which was detected incidentally during upper gastrointestinal endoscopy performed for other reasons.

MATERIAL and METHODS

We retrospectively reviewed data from patients who underwent upper gastrointestinal endoscopy evaluations performed at Endoscopy Unit of Gastroenterology Surgery Clinic of Kartal Koşuyolu Yüksek İhtisas Teaching and Research Hospital during January 2012 and December 2015. The study was conducted in accordance to Helsinki Declaration. Age, gender, endoscopy indication, endoscopic findings and histopathological findings, if available, were recorded in all patients with findings

Received: 16.05.2018 **Accepted:** 05.06.2018 **Available online:** 07.06.2018

Corresponding Author: Durmus Ali Cetin, Sanliurfa Education and Training Hospital, Department of Gastroenterological Surgery, Sanliurfa, Turkey, E-mail: drdurmusalicetin@gmail.com

compatible to ectopic pancreas. All patients gave written informed consent before intervention. Endoscopic procedures were performed at endoscopy unit by gastroenterologists, gastroenterology surgeons and general surgery specialists. Before endoscopy, 10% lidocaine was used as topical anesthetic while propofol (%1, Fresenius Kabi, Istanbul, Turkey) was used for premedication. All endoscopy procedures were performed by using Fujinon (Fujinon, Willich, Germany) and Olympus 160 (Olympus, Japan) video-endoscopy devices. During the endoscopy procedures, all stomach compartments including the fundus were examined in detail.

Statistical Analysis; Statistical Package for the Social Sciences (SPSS 21 Inc., Chicago, IL, USA) was used for statistical analyses. Data are presented as mean value \pm standard deviation or median (min-max).

RESULTS

Overall, 9850 patients underwent upper gastrointestinal endoscopy between January 2012 and December 2015; of these, findings compatible to ectopic pancreas were observed in 14 patients (0.14%) including 4 males (28.5%) and 10 females (71.5%). Mean age was 49 years (29-69 years) in these patients. The upper gastrointestinal endoscopy was performed due to dyspepsia in 8 (57.1%), epigastric pain in 2 (14.3%), history of gastric polyp in 2 (14.3%), anemia in one (7.1%) and gastric wall thickening

in one (7.1%) of the patients. Ectopic pancreas tissue was detected at gastric antrum in all patients. All patients showed central dimpling (central umbilication). (Figure 1a-b).



Figure 1a-b. Ectopic pancreas appearance at gastric antrum during endoscopy

Mean size was 8.5 mm (5-15 mm) in lesions detected. Histopathological examination was performed in 9 patients (64.2%) and chronic gastritis was observed in all of these patients. Since endoscopic sonography (EUS) was unavailable in our clinic, patients were referred to other facilities for EUS. Endoscopic or surgical resection was not performed on any patients. Table 1 summarizes demographic, clinical and endoscopic characteristics of the patients.

Table 1. Demographic, clinical and endoscopic characteristics of the patients

Patient No	Age	Gender	ASA score	Indication for procedure	Procedure	Localization of the lesion	Size of the lesion (mm)	Biopsy
1	57	F	2	Epigastric pain	Endoscopy	Antrum	5	-
2	44	F	1	Dyspepsia	Endoscopy	Antrum	10	Chronic gastritis
3	32	F	1	Dyspepsia	Endoscopy	Antrum	5	-
4	37	F	1	Dyspepsia	Endoscopy	Antrum	10	Chronic gastritis
5	54	F	2	Polyp control	Endoscopy	Antrum	15	Chronic gastritis
6	38	F	1	Dyspepsia	Endoscopy	Antrum	10	Chronic gastritis
7	69	F	2	Dyspepsia	Endoscopy	Antrum	10	Chronic gastritis
8	53	F	2	Polyp control	Endoscopy	Antrum	10	Chronic gastritis
9	57	F	2	Dyspepsia	Endoscopy	Antrum	10	Chronic gastritis
10	75	M	3	Stomach wall thickening	Endoscopy	Antrum	5	-
11	52	M	2	Epigastric pain	Endoscopy	Antrum	5	-
12	53	M	2	Anemia	Endoscopy	Antrum	10	-
13	60	M	2	Dyspepsia	Endoscopy	Antrum	5	-
14	29	F	1	Dyspepsia	Endoscopy	Antrum	10	Chronic gastritis

DISCUSSION

Ectopic pancreas is incidentally detected during endoscopy or surgery in general. It is a gastrointestinal malformation which usually has an asymptomatic course. Its incidence is 0.55-13.7% in autopsy series (1,2). Its incidence varies from 1% to 2% (1,2). In our study, ectopic pancreas was found to be 0.14%, which is lower than those in the literature. Although ectopic pancreas can be seen in all age groups, frequency is increased in decade six. In large series, mean age varied from 47.5 to 51 years (1,3). Ectopic pancreas can be observed in various regions of gastrointestinal system including spleen, gallbladder, biliary canals, omentum. It may also be seen in mediastinum and lungs. However, most common localizations have been reported as stomach, duodenum and proximal jejunum (5). Although pathogenesis is unclear in ectopic pancreas, pancreas buds separated during embryonic rotation is the most reasonable hypothesis (6). The potential symptoms and findings caused by ectopic pancreas are non-specific and include dysphagia, gastrointestinal bleeding, gastric ulcer, pyloric stenosis, pancreatitis and obstructive jaundice depending on localization (6). Ectopic pancreas with gastric localization is generally asymptomatic but it may become symptomatic based on size and pathological changes (acute or chronic pancreatitis, cyst formation or malignant degeneration) (7).

In ectopic pancreas, definitive diagnosis is still challenging despite advances in laboratory methods and imaging modalities. The diagnosis is made by histopathological examination of specimens obtained by endoscopic biopsy or surgical resection. However, it is difficult to establish diagnosis of ectopic pancreas from samples obtained by standard biopsy forceps during endoscopy (8). Histopathological examination was performed in 9 patients (64.2%) in our study and chronic gastritis was found in all of these cases. EUS is another modality that may aid diagnosis.

The EUS is considerably helpful in the diagnosis of submucosal lesion in gastrointestinal system. On EUS, ectopic pancreas appears as hypo-echoic, heterogeneous lesion with ill-defined margins. Anechoic areas are associated with ductal structures (9-11). Since EUS was unavailable in our clinic, patients were referred to other facilities for EUS.

In endoscopic procedures performed due to other reasons, ectopic pancreas should be kept in mind in submucosal lesion with central swelling and mucosal bulginess. Currently, there are no established guidelines in the management of small, asymptomatic ectopic pancreas in stomach. The recommended follow-up strategy is to monitor asymptomatic patients via serial endoscopic evaluations. Surgical resection is recommended in large,

symptomatic lesions where histopathological diagnosis couldn't be achieved. Eligible, symptomatic lesions with typical appearance and localization can be removed via laparoscopy or endoscopy-assistance using minimal invasive techniques (endoscopic submucosal dissection) (12).

CONCLUSION

Ectopic pancreas is detected incidentally during endoscopy or surgery. Ectopic pancreas should be kept in mind in submucosal lesion with central swelling and mucosal bulginess in endoscopic procedures performed due to other reasons.

Competing interests: The authors declare that they have no competing interest.

Financial Disclosure: There are no financial supports

Ethical approval: Since it is a retrospective study, we did not apply for ethical committee approval.

REFERENCES

1. Tanaka K, Tsunoda T, Eto T, et al. Diagnosis and management of heterotopic pancreas. *Int Surg* 1993;78:32-5.
2. Dolan RV, ReMine WH, Dockerty MB. The fate of heterotopic pancreatic tissue. A study of 212 cases. *Arch Surg* 1974;109(6):762-5.
3. Hsia CY, Wu CW, Lui WY. Heterotopic pancreas: a difficult diagnosis. *J Clin Gastroenterol* 1999;28:144-7.
4. Zhang Y, Sun X, Gold JS, et al. Heterotopic pancreas: a clinicopathological study of 184 cases from a single high-volume medical center in China. *Hum Pathol* 2016;55:135-42.
5. Jun SY, Son D, Kim MJ, et al. Heterotopic Pancreas of the Gastrointestinal Tract and Associated Precursor and Cancerous Lesions: Systematic Pathologic Studies of 165 Cases. *Am J Surg Pathol* 2017;41:833-48.
6. Armstrong CP, King PM, Dixon JM, et al. The clinical significance of heterotopic pancreas in the gastrointestinal tract. *Br J Surg* 1981;68:384-7.
7. Agale SV, Agale VG, Zode RR, et al. Heterotopic pancreas involving stomach and duodenum. *J Assoc Physicians India* 2009;57:653-4.
8. Ryu DY, Kim GH, Park DY, et al. Endoscopic removal of gastric ectopic pancreas: An initial experience with endoscopic submucosal dissection. *World J Gastroenterol* 2010;16:4589-93.
9. Rubbia-Brandt L, Huber O, Hadengue A, et al. An unusual case of gastric heterotopic pancreas. *JOP* 2004;5:484-7.
10. Bromberg SH, Neto C, Borges AF, et al. Pancreatic heterotopias: clinicopathological analysis of 18 patients. *Rev Col Bras Cir* 2010;37:413-9.
11. Yüksel M, Kacar S, Akpınar MY, Saygılı F, Kayhan MA, Dişibeyaz S, et al. Endosonographic features of lesions suggesting gastric ectopic pancreas: experience of a single tertiary center. *Turkish journal of medical sciences* 2017;47(1):313-7.
12. Zhang Y, Huang Q, Zhu LH, et al. Endoscopic excavation for gastric heterotopic pancreas: an analysis of 42 cases from a tertiary center. *Wien Klin Wochenschr* 2014;126:509-14.