Ectopic Pancreatic Tissue in Children

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Abstract

Introduction: Ectopic pancreatic tissue (EP) occurs in the gastrointestinal tract at a rate of 95%, usually detected incidentally. Pediatric cases have been reported rarely. Here, we present the patients who were detected during the endoscopic procedure.

Methods: Between 2015-2018, 485 patients who underwent esophagogastroduodenoscopy in two different centers were evaluated retrospectively in this study.

Results: During the procedure, the lesion was detected in 14 patients (eight boys and six girls), which could be macroscopically compatible with ectopic pancreatic tissue. The age range of the patients was 12.3±4.1 years. Eleven of the lesions were localized in the pre-pyloric antrum and one of them was located in the distal esophagus. Histopathological examination revealed ectopic pancreatic tissue in the esophagus biopsy specimen and in six of the antrum biopsy specimens.

Discussion and Conclusion: EP is usually asymptomatic, commonly detected in the gastrointestinal tract (esophagus, stomach, duodenum, jejunum, ileum, omentum, gallbladder, Meckel’s diverticulum) and can be seen in all age groups. The gold standard for diagnosis is histopathological evaluation. There are few case reports in the pediatric age group. In our series, we found the incidence of EP to be 1%.

Keywords: Children; ectopic pancreas; esophagogastroduodenoscopy.
Results

During the procedure, lesions that could be compatible with ectopic pancreatic tissue were detected in 14 patients (eight boys and six girls). The age range of the patients was 12.3±4.1 years. Upper gastrointestinal endoscopy was performed to investigate dyspeptic complaints that did not resolve despite appropriate treatment in 291, abdominal pain related to undetermined causes in 112, and gastrointestinal causes in growth and development retardation in 82 patients. Thirteen lesions detected during the procedure were localized at pre-pyloric antrum and one lesion was in the distal esophagus. Histopathological examination, H. Pylori was detected in 179 (39.1%) of the patients. In the histopathological evaluation, ectopic pancreatic tissue was detected in the esophageal biopsy specimen and in six of the lesions detected in the prepyloric antrum. H. Pylori was seen in the antrum and/or corpus biopsy specimens of eight (57.1%) of 14 patients whose EP was detected macroscopically (Figs. 1, 2).

Discussion

As a rare occurrence, EP is known as the abnormal location of pancreatic tissue. This formation has no relation with normal pancreatic tissue anatomically or vascularly [4, 9]. The gastrointestinal tract is the most common location, especially the stomach, duodenum and jejunum [2, 9]. However, esophagus, ileum, omentum, gall bladder, Meckel’s diverticulum, and even mediastinal location have been reported [5-8, 10-12]. In the literature, there are two case reports with an umbilical location in a 2-year-old patient and an intracranial location in an 11-year-old patient [6, 7]. Patients with EP-induced intussusception detected during laparotomy performed with the indication of acute abdomen in childhood or adulthood have been reported [13, 14]. It has been reported in the literature that though very rarely, EP tissue may undergo malignant transformation [15]. There is a case of malignancy originating from an EP tissue located in the Meckel’s diverticulum reported by Lai et al. [16].

EP in the majority of patients is detected by chance during gastrointestinal endoscopy or laparotomy and does not cause any symptoms. However, EP may cause nonspecific abdominal pain, nausea, vomiting, and may also emerge as a cause of anemia [11]. In our study, there was a significant difference between the frequency of ectopic pancreatic tissue detected in the endoscopic examination performed due to treatment-resistant dyspeptic complaints and the incidence of ectopic pancreatic tissue in patients who underwent endoscopy for abdominal pain of unknown etiology (n=12 and n=2, p=0.038, respectively).

EP can be seen in all age groups and the incidence in men is slightly higher [17]. In the upper gastrointestinal endoscopic examination, EP is generally observed as a localized lesion smaller than 3 cm, with a luminal crater bulging from subcutaneous to mucous layer, and then into lumen with a nodule in its middle portion [18, 19]. In one case, Ertem et al. detected a prepyloric ectopic pancreatic tissue associated with H. pylori that caused pyloric stenosis, detected and stated that pyloric stenosis was secondary to inflammation caused by H. pylori infection [19]. In our study, we did not find a significant difference between H. pylori positivity and negativity patients with EP tissue (n=8, n=6, p=0.08, respectively).
Computed tomography and magnetic resonance are used for diagnostic radiological evaluation. A biopsy can be taken with the aid of endoscopic ultrasonography. The gold standard for diagnosis in all conditions is histopathological evaluation. Histopathologically, pancreatic heterotopia is studied in four subgroups: Type 1: the presence of typical pancreatic tissue, including acini, ductus and islet cells similar to normal pancreatic tissue; Type 2: the presence of pancreatic ducts only; Type 3: presence of acinar tissue only, and Type 4: presence of pancreatic tissue containing only islet cells. This classification was first made by Heinrich in 1909 and was modified by Gasper-Fuentes in 1973[20]. The biopsy material taken should contain the submucosa; otherwise PE may be overlooked.

Few case reports have been reported in the pediatric age group in the literature. We found EP incidence as 1% in our series. The rate we found was compatible with the literature. Although a rare lesion in pediatric patients, ectopic pancreatic tissue should be kept in mind in patients with unexplained dyspeptic complaints.

Ethics Committee Approval: The Ethics Committee of Health Sciences University Umranıye Training and Research Hospital provided the ethics committee approval for this study (B.10.1TKH.4.34.H.GP.01/182).

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