[症例報告]Heterotopic Pancreatic Tissue of The Stomach : A Report of Two Cases

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Heterotopic Pancreatic Tissue of The Stomach : A Report of Two Cases

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Key words : heterotopic pancreatic tissue, stomach, immunoperoxidase method(PAP method), insulin.

Abstract

Two cases of heterotopic pancreatic tissue of the stomach are reported herein.

Case 1 was a 59 year-old woman with a complain of mild upper abdominal pain. Upper GI series and endoscopic study revealed a submucosal tumor which was located at the posterior wall of the body of the stomach. Postoperatively, the tumor was 3x1.5x0.5 cm in size and patholohgically reported to be a heterotopic pancreatic tissue.

Case 2 was a 62 year-old woman who was admitted to our hospital for a simple cholecystectomy. Routine upper GI series and endoscopic examination showed a mild swelling at the antrum of the stomach. During the cholecystectomy, a submucosal like mass was excised. The mass was 8x8x5 mm in size and pathologically dignosed to be a heterotopic pancheatic tissue.

The literature relating to aberrant pancreas, its origin and diverse locations are reviewed. Also, a comparative study was done regrading Heinrich's criteria for heterotopia of pancreatic tissue and the indirect immunoperoxidase method. It may be thought that only by an immunohistochemical method a true classification of the heterotopic pancreatic tissue can be obtained.

Introduction

The heterotopic pancreatic tissue of the stomach are being classified by the presence or absence of endocrine and exorine cells of the pancreatic tissue. Heinrich's criteria has been widely accepted for this purpose. However, with routine histological study the extra-islet endocrine cells and the single endocrine cells are seldom detected.

Immunohistochemistry has been recently advanced and extensively used in the study of normal and diseased pancreatic tissue as well as the mocosa of the gastrointestinal tract. By using the indirect immunoperoxydase method for insulin-producing endocrine cells the heterotopic pancreatic tissue of the stomach in two cases was investigated to obtain a more accurate way of classifing this condition.

Case Reports

Case 1 : A 59 years old woman was admitted to our hospital with a history of dull upper abdominal pain of several months duration. She was a well nourished lady. On admissin

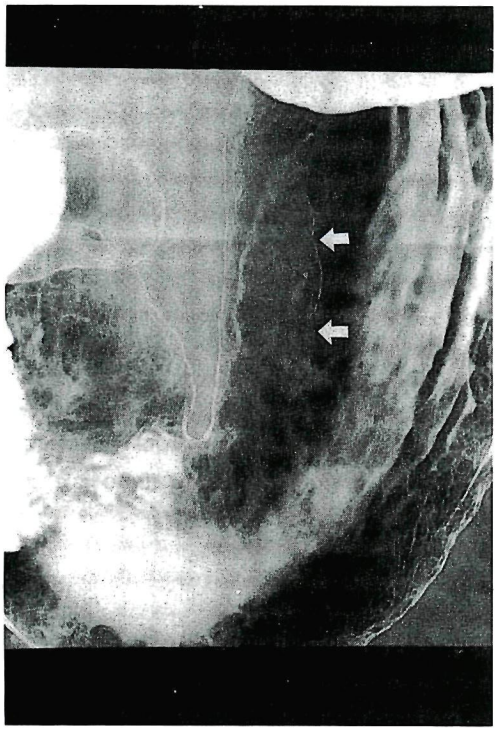

Fig. 1 (Case 1) : Double contrast barium examination of the stomach showing a well defined elevated mass (arrow head) at the posterior wall of the body of the stomach.

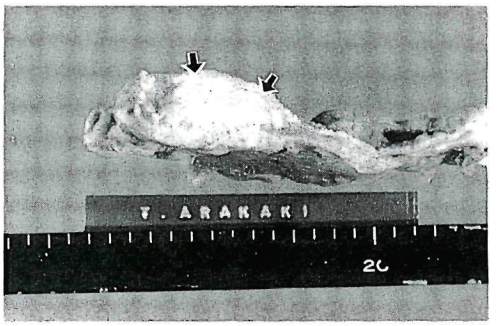

Fig. 2 (Case 1) : Operative specimen of the ectopic pancreas tissue (arrow head) situated submucosally within the stomach wall.

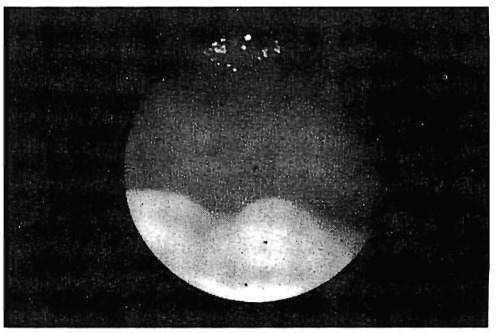

Fig. 3 (Case 2) : Endoscopic examinaton showing a mild mucosal elevation.

she had no abnormal physical findings and the laboratory datas were within normal limits. A well-defined elevated mass at the posterior wall of the body of the stomach was evident by double contrast barium examination (Fig.1). By endoscopic examination a submucosal tumor was diagnosed. No ulcer or any other abnomalities were seen in specimens otained at superficial biopsy. A subtotal gastrectomy was done with the diagnosis of sumucasal tumor of the stomach. Gross examination of the operative specimen reveled a firm yellowish, sligtly irregular mass (3x1.5x0.5cm), situated submucosally (Fig.2). No other abnormalities were observed.

Case 2 : A woman of 62 years of age was admitted to our hospital for a simple cholecystectomy operation. But with routine barrium and endoscopic examinations of the stomach a mild swelling with little delling at the centre was observed(Fig.3). During the cholecystectomy operation a submucosal tumor like-mass (8x8x5mm) was excised from the antrum of the stomach. On cut section a cystic mass was evident (4x4x4mm) inside the mass.

Pathology

The microscopic findings were heterotopic pancreatic tissues in both the cases. The case 1 distinctly showed the presence of Langerhan islets and abundant acini along with

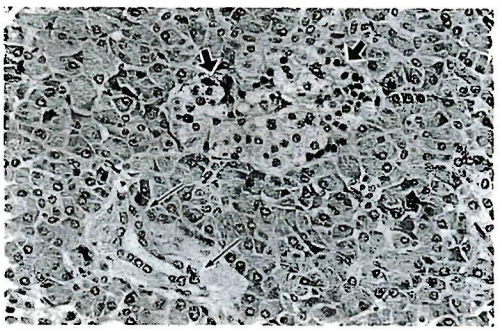

Fig.4 (Case 1) : Heteropic pancreatic tissue, showing the Langerhan's islet (short arrow) and duct (long arrow) at the centre surrounded by abundant acini. H & E x 100.

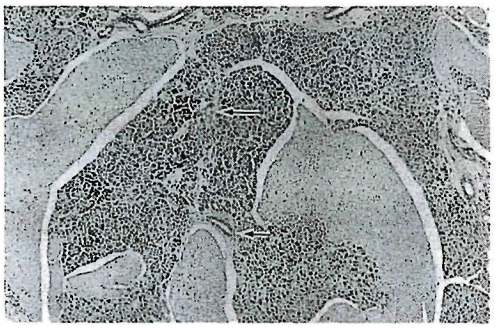

Fig.6 (Case 2) : Heterotopic pancreatic tissue situated within the muscular tissue of the stomach, abundant acini and several excretory ducts (arrow head) are evident. Note that no islets are present. H & E x 50.

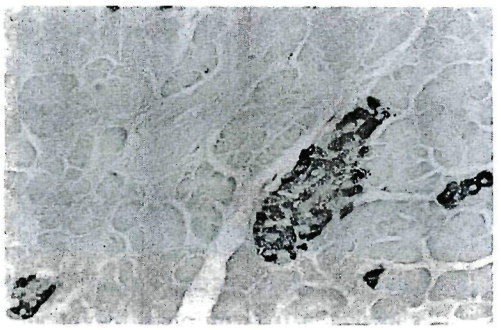

Fig.5 (Case 1) : Indirect immunoperoxidase staining for insulin, shows strongly positive Langerhan's islet in the midst of negetively stained acini. PAP method x 100.

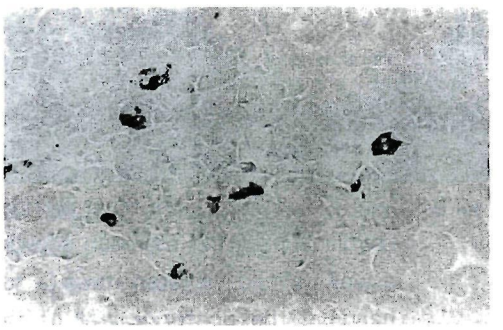

Fig.7 (Case 2) : Indirect immunoperoxidase staining for insulin shows, sparse but definite presence of islet cell group and single cells of endocrine cells. PAP method x 100.

pancreatic ducts within the muscle layers of the stomach. Two types of cells were evident one was with a large, round, bright nucleus whose cytoplasm took haematoxylin stain containing eosinophilic granules. These cells were arranged in a glandular pattern. The other variety had bright cytoplasm with big round nucleus arranged in Langerhan's pattern. Ducts were also found around the cells (Fig.4). In the second case no Islets were found but only acini and few pancreatic ducts were interposed between them(Fig.6).

The immunohistochemical studies were carried out by the indirect immunoperoxidase (PAP)method of Sternberger(13). The primary antibody used was rabbit antihuman insulin serum(BioGenex Lab. Dublin, CA, USA). In case 1 the Langerhan's islets as well as the extra islet cells and the single endocrine cells were strongly positive by the insulin antibody (Fig.5). And in case 2 a few endocrine cells which were not at all visible by the H-E stain showed a strong positivity (Fig.7).

Discussion

Heterotopic pancreas is defined as pancreatic tissues situated outside its usual location without an anatomical relation of either continiuity or vascularization with the pancreas proper(2). Numerous reports of heterotopic pancreatic tissues have been published, ninty percent of the cases were from the upper gastrointestinal tract, namely the duodenum, stomach, jejunum and ileum in the declining order of frequency (2, 4). It occurs less frequently in the Meckel's diverticulum, gastric and intestinal diverticula, mesentry, omentum, spleen, biliary tract, umbilical region, liver, colon, esophagus, lungs, fallopian tubes and lymph nodes (3, 9, 10, 11, 12, 14). It is reported to be found in about 1 out of every 500 upper abdominal laparotomies and in autopsy studies, incidence ranges from 0.6% to 13.7% (2, 7), with a male : female ratio of about 3 : 1(5). According to the studies by Dolan et al. it is presumed that most cases of heterotopic pancreas are asymptomatic (4). But it is more frequently clinically evident in the fifth and sixth decades of life (15). Symptoms depend on its size and location in conjunction with intrinsic changes or secondary changes in surrounding tissues. In a review of 34 histologically confirmed cases, Armstrong et al. concluded that lesions associated with signs and symptoms are greater than 1.5cm in maximum diameter and are adjacent to or directly involve the mucosa(1). The most common symptoms found are abdominal pain, discomfort and upper GI bleeding. The pathogenesis of pain and discomfort without further complicat ions is yet not clear.

There are several theories explining the origin of heterotopic pancreatic tissue. The one proposed by Horgan is that small buds from the branching ends of either anterior or posterior pancreatic anlage which has not yet coalesed become attached to the gut wall and remain separately grafted in a new location in the gut wall (7). This theory explains for our cases quite satisfactorily, but it does not explain for the whidespread locations that are reported in the previous reports.

According to Heinrich's criteria for the gastric heterotopic pancreas, it is classified in to three types (7). Type I consists of Langerhan's islands, cells of exorine glands and excretory ducts, type II are those containing only cells of exocrine glands and excretory ducts without Langerhan's islands and type III are those containing only excretory ducts without Langerhan's islands or cells of exocrine glands. In our two cases histopathologically, case 1 was of Heinrich's type I and case 2 was of Heinrich's type II. But by immunohistological studies it is evident that the type II is actually of type I also, as the insulin antibody strongly stained the single endorine cells. Therefore the case 2 which was previously classified as Heinrich's type II was actully of Heinrich's type I. Langerhan's islands are classified into three morphological groups : (i) large and middle sized islansd, (ii) small island and islet cell group and (iii) single cell group (8). Therefore we believe that by immunoperoxidase method it would be easier to classify the heterotopic pancreatic tissues more accurately in the future.

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