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Real Time Ultrasound Diagnosis Of Non-Vaterian Duodenal Adenoma - A Brief Case Report

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ABSTRACT

Non-vaterian duodenal adenomas are rare lesions, usually present with bleeding and abdominal pain. Sonography is often the first imaging procedure in patients with vague upper abdominal complaints, unsuspected duodenal pathology may be encountered[1]. It is now widely accepted as the first choice for the investigation of abdominal masses. Oral water load is recognised as a good procedure for the detection of a bowel-related mass during sonographic examination[2]. In our case, we used the real-time ultrasound with water ingestion to detect the location of the duodenal lesion and its relationship to the neighboring structure. This report demonstrates that conventional real-time ultrasound is still a simple method to diagnose duodenal lesions.

Keywords: ultrasound, duodenal adenoma

INTRODUCTION

Sonographic identification and evaluation of the gastrointestinal tract has been facilitated by the present widespread use of sonographic contract agents such as decanted or distilled water in association with real-time scanning[3]. By employing real-time scanning instruments, the presence of peristalsis and the anatomic relationships of a bowel segment to other abdominal organs and structures may be documented dynamically[4]. The following case report describes a non-vaterian duodenal adenoma which did not originate at the ampulla vater in between the first and second portion of duodenum and was detected and diagnosed by water-aided real-time sonography.

CASE REPORT

An 80-year-old woman was admitted with complaints of epigastric pain and tarry stool passage of 5 days duration. On physical examination, she was chronically ill looking with epigastric tenderness only, no jaundice, vomiting or weight loss was elicited. She had a past history of diabetes mellitus. Abnormal laboratory results included a haemoglobin of 6.3 gm%, a fasting blood sugar of 244 mg% and a BUN of 40 mg%.

Real-time B mode ultrasound of abdomen with a 3.5 MHz transducer revealed a mass lesion, located lateral to the head of pancreas on transverse scan (Fig 1). In the oblique view, the common bile duct is not dilated and measured about 0.5 cm in diameter (Fig 2). After ingestion of 30 oz. of tap water and by placing the patient in the right lateral decubitus position, the mass lesion of the descending duodenum was nicely outlined longitudinally with the fluid angle

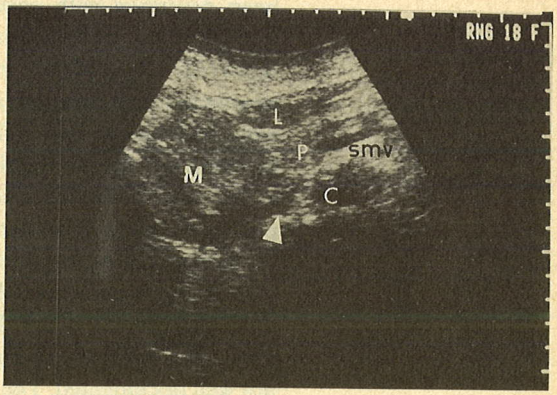

Fig 1 - Transverse scan revealed the normal pancreatic head tissue (P) to be approximately as echogenic as the adjacent liver (L). A well-defined echogenic mass lesion (M) is along the anterolateral border of pancreatic head (P) with the common bile duct (white arrowhead) inferior and lateral. c: inferior vena cava: smv: superior mesenteric vein.

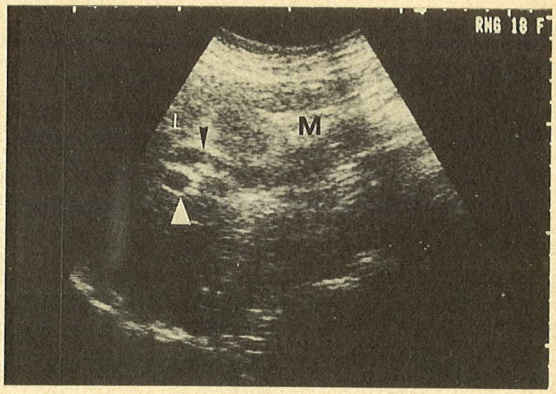

Fig 2 - Long axis view of normal caliber common bile duct (black arrowhead). A solid mass (M) is seen above the distal end of the duct. Main portal vein: white arrowhead; L: liver.

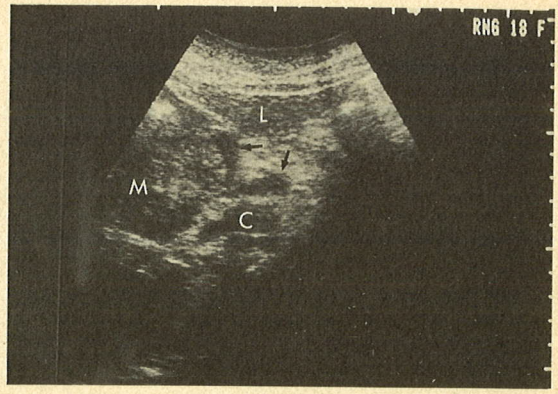

Fig 3 - Longitudinal scan obtained after oral ingestion of 30 oz. of tap water in right lateral decubitus position. Medial to mass lesion (M), a fluid angle or collection (black arrows) can be identified as the fluid-filling first and second portion of duodenum. c: inferior vena cava; L: liver.

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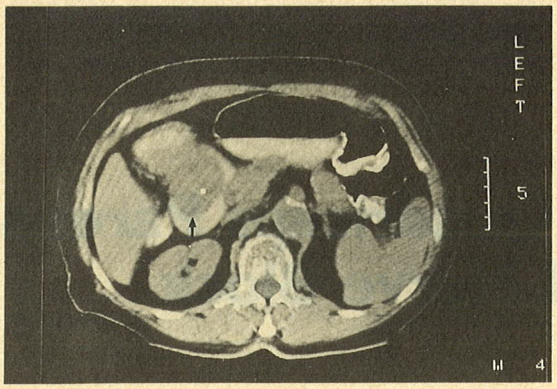

Fig 4 - The appearance of a homogenous intraluminal soft tissue density mass (black arrow) unassociated with the thickening wall inside the duodenum.

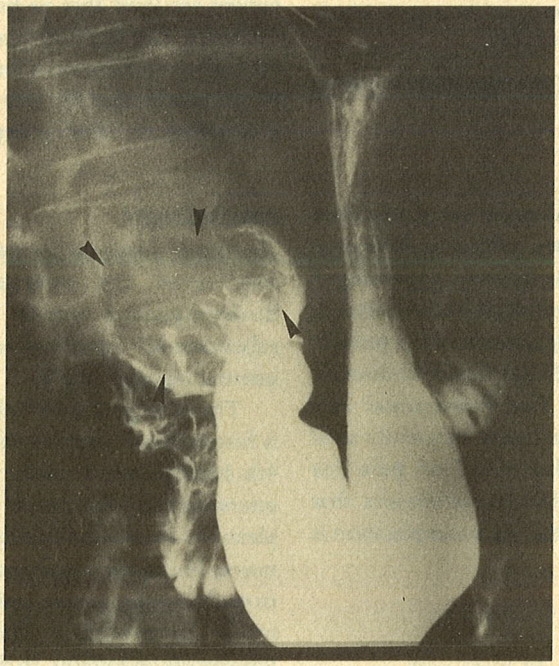

Fig 5 - The non-villous adenoma showed a discrete large filling defect (black arrowhead) involving the duodenal bulb and sweep.

between the first and second portion of duodenum (Fig 3)[5]. CT scan showed a homogenous soft-tissue density mass of the duodenum (Fig 4). A barium gastrointestinal study demonstrated a sessile polypoid mass with irregular margin in the duodenal bulb and upper part of the second portion duodenum (Fig 5). Endoscopy biopsy was consistent with non-villous adenoma.

DISCUSSION

Non-vaterian duodenal adenomas are rare lesions[6-8]. These adenomas generally occurred as isolated lesions and 94% of the non-villous adenomas reported occurred in between the first and second portion of duodenum[6]. Moulinier emphasized that nearly 25% of all benign duodenal tumors are asymptomatic[9]. The most frequently cited sign in the literature is bleeding and abdominal pain. Jaundice is rare[6].

In the past, gastroduodenal barium examination and endoscopy were the primary investigative procedures in suspected duodenal adenoma[6]. In the last decade, as experience broadened and the resolution and versatility of ultrasound scanning devices improved, ultrasonic appearance of different parts of duodenum after ingestion of fluid were possible[5]. Ultrasound can usually define the mass of gastrointestinal tract but as a rule, cannot show the exact source. The duodenal adenoma where the intimate relationship or lateral to the head of pancreas, normal caliber common bile duct and longitudinal appearance of the fluid-filled angle between the first and second portion of duodenum adjacent to mass lesion makes the diagnosis possible. Other lesions that may be encountered in this region include pancreatic head mass, carcinoma of the ampulla vater, nodal masses due to either lymphoma (usually histocystic) or other metastatic disease involving the liver hilum of peripancreatic lymph nodes and primary biliary and gallbladder carcinoma[10]. The majority of these lesions develop jaundice and show obstruction of the biliary ductal system on ultrasound[10]. Computed tomography (CT scan) in our case can be a useful adjunct in the evaluation of duodenal tumours, the presence of an intraluminal filling defect without associated wall thickening is a useful finding in distinguishing benign duodenal neoplasm from malignant mass on CT (Fig 5)[11]. To our knowledge, no previous ultrasound demonstration of non-vaterian duodenal adenoma has been published.

Sonography is being utilised more frequently as a primary screening procedure in patients with non-specific abdominal complaints. Duodenal tumour may be encountered during abdominal sonographic studies that are performed prior to radiographic examinations particularly barium contrast studies, recognition of the sonographic patterns arising from normal and abnormal duodenum is therefore of significant clinical importance. It is not suggested that ultrasound should replace the barium study and gastroscopy in diagnosis of benign duodenal tumour, but it is important to recognise the location and features of non-vitriol duodenal tumour on ultrasound in order to streamline the patient's work-up. Early diagnosis can be made and early treatment can be given.

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