

Duodenal Diverticula Clinical Characteristic in 36 Iraqi Patients

***Aswad Al-Obeidy FICMS(GE&H) CABM ** Makki H. Fayadh MRCP-FRCP
Ali Abdul Hamied FICS(GE&H) CABM* Jassem Muhsen FICS(GE&H) CABM
***** Basim A. Askir FICS(GE&H) CABM**

Abstract

Background:

Duodenal diverticula are pouches that protrude from the duodenal lumen. They can be either extraluminal or intraluminal. Only about 10% of extraluminal diverticula are symptomatic. Surgical and endoscopic treatment may be required for complications and, rarely, for persistent symptoms.

Patients and Methods:

A cross-sectional study of 36 patients found to have duodenal diverticula during 420 ERCP procedures done in the Gastroenterology and Hepatology Teaching Hospital between October 2002 and March 2004 to determine the clinical characteristic, the associated diseases and the complications of these diverticula.

Results:

The prevalence of duodenal diverticula in Iraqi patients underwent ERCP was 8.57%, their mean age was 59.8 years and there was female predominance (1.77:1). Approximately 75% of the diverticula were juxta papillary (JPD), whereas in 25% were intradiverticular papillae (IDP), they were single in 80.6%, but multiple in 19.4%. The most common presenting symptoms were pain and jaundice (69.4%) followed by fever (58.3%) and dyspepsia (33.3%). Bleeding from the diverticula in one patient (2.8%). The most common EGD finding was gastropathy (58.8%) followed by GERD (30.5%) and duodenal ulcer in (22.2%).

Duodenal bezoar was found in one patient (2.8%).

The incidence of CBD stone in the absence of gall bladder stone was (27.7%). The incidence of recurrence of CBD stone after cholecystectomy was (22.2%) and the overall incidence was (72.2%). The most common associated diseases were choledocholithiasis (72.2%) and cholelithiasis (55.5%) followed by cholangitis (30.5%) and cholecystitis (27.7%).

Pancreatitis was found in (16.6%) and obstructive jaundice in the absence of other causes in two patients (5.5%).

Conclusion:

Duodenal diverticula were prevalent, significantly correlated with biliary calculi, often associated with pancreatitis and may be complicated by obstructive jaundice, bleeding and duodenal bezoar formation.

Key words :

Duodenal diverticula , biliary calculi , pancreatitis .

Introduction:

Duodenal diverticula are pouches that protrude from the duodenal lumen. They can be either extraluminal or intraluminal. The prevalence of peripapillary diverticula in patients undergoing ERCP is 12.5% and appears to increase with age.

***Dr. Aswad Al-Obeidy , the Gastroenterology and Hepatology teaching hospital, Baghdad
**Dr. Makki H. Fayadh, the Gastroenterology and Hepatology teaching hospital, Baghdad
***Dr. Ali Abdul Hamied, the Gastroenterology and Hepatology teaching hospital, Baghdad
****Dr. Jassem Muhsen, the Gastroenterology and Hepatology teaching hospital, Baghdad
*****Dr. Basim A. Askir, the Gastroenterology and Hepatology teaching hospital, Baghdad**

They could be either juxtapapillary diverticula (JPD) or intradiverticular papilla (IDP). They arise in the area of the duodenal wall where a vessel or bile duct penetrate or where the dorsal and ventral pancreas fuse, they may result from increased intraduodenal pressure and increased level of motilin, somatostatin and may be related to scarring and adhesion from peptic ulcer disease.

⁽¹⁾ Only about 10% of extraluminal diverticula are symptomatic, of these only 1% will need intervention. ⁽²⁾ Complications of duodenal diverticula include diverticulitis, gastrointestinal hemorrhage, intestinal obstruction, acute perforation, bacterial overgrowth with malabsorption, pancreatitis and biliary disease. ⁽³⁾ Surgical and endoscopic treatment may be required for complications and, rarely, for persistent symptoms. ⁽¹⁾

Patients and Methods:

A cross-sectional study of 36 patients (pts) found to have duodenal diverticula during 420 ERCP procedures for different clinical indications done in the Gastroenterology and Hepatology Teaching Hospital between October 2002 and March 2004. Each pt interviewed, detailed history, general medical examination was done and protocol paper was filled. Esophagoduodenoscopy (EGD), abdominal ultrasonography with or without MRI, MRCP was done for every patient, blood sample was taken for biochemical analysis and surgical intervention if indicated was attended for operative diagnosis and final outcome. The aim of the study is to determine the clinical characteristics, the associated diseases and the complications of the duodenal diverticula.

Results:

Of the 36 pts found to have duodenal diverticula during 420 ERCP procedures done in the Gastroenterology and Hepatology Teaching Hospital between October 2002 and March 2004, 212 were male and 208 were female. The prevalence of duodenal diverticula in Iraqi pt underwent ERCP was 8.57%, their mean age was 59.8 years and there was female predominance (1.77:1). Approximately 75% of the diverticula were juxtapapillary (JPD), whereas 25% were intradiverticular papillae (IDP), figure (1), they were single in 80.6%, but multiple in 19.4%. The most common presenting symptoms were pain and jaundice (69.4%) followed by fever (58.3%) and dyspepsia (33.3%). Bleeding from the diverticula in one patient (2.8%) as shown in table (1). The most common EGD finding was gastropathy (58.8%) followed by GERD (30.5%) and duodenal ulcer in (22.2%). Duodenal phytobezoar was found in one pt (2.8%) as in table (2). The incidence of CBD stone in the absence of gall bladder (GB) stone was (27.7%). The incidence of recurrence of CBD stone after cholecystectomy was (22.2%) and the overall incidence was (72.2%) as in table (3). The most common associated diseases were choledocholithiasis (72.2%) and cholelithiasis (55.5%) followed by cholangitis (30.5%) and cholecystitis (27.7%). Pancreatitis was found in (16.6%) and obstructive jaundice in the absence of other causes in two pt (5.5%) as shown in table (4). The complications of duodenal diverticula in this study were obstructive jaundice (5.5%), gastrointestinal bleeding (2.8%) and duodenal bezoar (2.8%).

Table (1): The presentig symptoms of duodenal diverticula

Symptome	No.	%
Pain	25	69.4
Jaundice	25	69.4
Fever	21	58.3
Despepsia	12	33.3
Weight loss	9	25
G I bleeding	1	2.8

Table (2): EGD finding in patients with duodenal diverticula

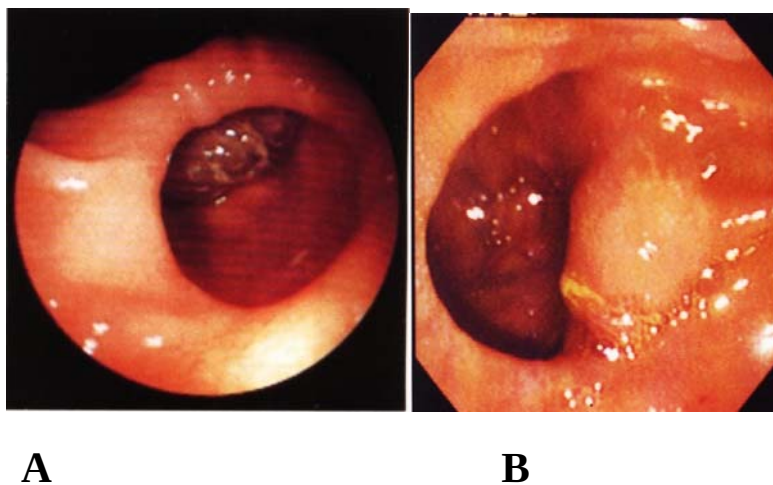
EGD finding	No.	58.8
Gastropathy	21	58.8
GERD	11	30.5
Duodenal ulcer	8	22.2
Duodenitis	6	16.6
Gastric ulcer	2	5.5
Duodeanl bezoar	1	2.8

Table (3): The relation of duodenal diverticula to biliary caliculi

	No.	%
Pt with gall stone and CBDstone	8	22.2
Pt with CBD stone no gall stone	10	27.7
Cholecystectomy	12	33.3
CBD stone after cholecystectomy	8	22.2
CBD stone (overall)	26	72.2

Table (4):Diseases associated with duodenal diverticula

Disease	No.	%
Choledocholithiasis	26	72.2
Cholelithiasis	20	55.5
Cholangitis	11	30.5
Cholecystitis	10	27.7
Pancreatitis	6	16.6
Obstructive jaundice	2	5.5



**Figure (1) duodenal diverticula (A) Intradiverticular papilla
(B) Juxtapapillary diverticulum**

Discussion:

In this study, the prevalence of extraluminal duodenal diverticula was (8.57%), 75% were JPD whereas 25% were IDP, they were single in 80.6%,but multiple in 19.4%. There mean age was 59.8 years. Extraluminal duodenal diverticula are noted in up to 6% of upper gastrointestinal radiographic studies, in up to 27% of ERCP, and in as many as 23% of autopsy. Approximatly 75% of these diverticula

are within 2 cm of the ampulla and are termed JPD, when the papilla arise within the diverticulum, the term IDP is used, in one fifth of cases the diverticula are multiple and may in few

cases border either side of the papilla giving the so called pantalloon effect. ^(1,4) Patients with extraluminal diverticula are in the 5th to 7th decade of life. ⁽¹⁾ The most common symptome was pain in (69.4%) and bleeding from a diverticulum was found in one pt (2.8%). Duodenal diverticula present as pain in the epigastric region radiated to the back associated with other signs and symptomes of sepsis. Bleeding from diverticulum is rare, acute hemorrhage may be caused by erosion of a major vessel, bleeding ectopic gastric mucosa and intradiverticular polyp or local inflammatory process. Endoscopic control of bleeding from

diverticula has been reported, using a variety of technique, including bipolar cautery, epinephrine injection, and application of hemoclips. ^(5,6) The most common EGD finding were gastritis and GERD, duodenal bezoar was found in one patient (2.8%). A duodenal bezoar was encountered between the second and third segment of the duodenum in a patient who had a gastroduodenostomy, it was conjectured that narrowing of the flexure was the result of surgery, although two diverticula were present in the area. Duodenal bezoar are almost always associated with obstruction and has been associated with duodenal web and diaphragm. ⁽⁷⁾ Duodenal diverticula was significantly associated with CBD stone and the overall incidence was (72.2%). Chandy et al studied pts with duct stone in the absence of GB stone (n=44), pts with duct stone together with GB stone (n=750) and two age matched control groups. JPD were found in 70% of pts with primary bile duct stone and 25% of pts with choledocolithiasis and cholelithiasis versus 7% and 8% in the respective control group. ⁽⁸⁾ Lotviet et al reported incidence of recurrent calculi after cholecystectomy in pts with diverticula was 87.5%, without diverticula the incidence was 39.1%. ⁽⁹⁾ Studies such as this and the present study suggest a causal relationship between duodenal diverticula and gall stone disease. Stasis within this type of diverticula can result in localized bacterial growth with deconjugation of bile and increased incidence of CBD stone ⁽¹⁰⁾. Pancereatitis was found in (16.6%). Some group think that JPD should be ruled out in cases of otherwise idiopathic recurrent pancreatitis ⁽¹¹⁾. In conclusion in Iraqi pts underwent ERCP duodenal diverticula were prevalent, significantly correlated with biliary calculi, often associated with pancreatitis

and may be complicated by obstructive jaundice, bleeding and duodenal bezoar formation.

References:

1. Lobo DN, Balfour TW, Iftikhar SY, et al: Periapillary diverticula and pancreaticobiliary disease. *Br J Surg* 68:588-597, 1999.
2. Coelho J, Sousa GS, Lobo DN: Laparoscopic treatment of duodenal diverticulum. *Surg Laparosc Endosc* 9:74-77, 1999.
3. Scudmore CH, Harrison RC, White T: Management of duodenal diverticula. *Can J Surg* 25:311-314, 1982.
4. Cox GL. Perforated duodenal diverticulitis. *South Med J* 73:830, 1980.
5. Dala AA, Rogres SJ, Sello JP: Endoscopic management of hemorrhage from duodenal diverticulum. *Gastrointest Endosc* 48:1-4, 1998.
6. Wu NH, Wang HB, Yang CS, et al: Endoscopic hemoclip therapy of bleeding duodenal diverticulum. *Gastrointest Endosc* 51:1-4, 2000.
7. Madura MJ, Naughton BJ, Craig RM. Duodenal bezoar: A case report and review of the literature. *Gastrointest Endosc* 28:26-8, 1982.
8. Chandy et al: An analysis of the relationship between the bile duct stone and periampullary duodenal diverticula. *J Gast Hep* 12:29-33, 1997.
9. Kim SH, Lee SW, Choi WJ, et al: Laparoscopic resection of gastric diverticulum. *J Lap Adv Surg Techn* 9:87-91, 1999.
10. Uomo G, et al: Periapillary duodenal diverticula and acute pancreatitis. *Am J Gastroenterol* 91:1186-1188, 1996.
11. Miyazaki S, et al: Function of the sphincter of Oddi in pt with JPD. *World J Surg* 19:307-312, 1995.