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A PERIAMPULLARY DIVERTICULA IN PATIENT UNDERGOING ENDOSCOPIC RETROGRADE CHOLANGIOPANCREATOGRAPHY – A TERTIARY CENTER EXPERIENCE

Gastroenterology

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ABSTRACT

The aim of the study was to evaluate the prevalence of periampullary diverticula in the studied population and To compare the success rate of cannulation in patient with and without Periampullary diverticulam. The reported prevalence of periampullary duodenal diverticula varies between 9 and 30%.

Material and methods. The study group of 400 patients who underwent ERCP between 2015 and 2017 at institute of medical gastroenterology, Madras medical college were analysed. The group comprised of 170 women (mean age 60 years) and 230 men (mean age 55 years). The patients were divided into two groups. Group A included patients in whom there were no periampullary diverticula detected. Group B included patients in whom the periampullary diverticulam were identified.

Results. There were 340 patients included in group A and 60 patients in group B. The prevalence of periampullary diverticula in the analysed group was 15%. The presence of stones or biliary sludge was diagnosed in 270 in group A and 45 patients in group B second most common indication for ERCP in our study group is Periampullary carcinoma, 40 patients in group A, 5 patients in group B. Success rate of cannulation in Group A 86.5% and Group B 65%.

Conclusions. Overall prevalence of periampullary diverticulam is 10% in our studied population, the technical success of ERCP is high in people without periampullary diverticulam.

KEYWORDS

choledocholithiasis, Periampullary diverticulum, Periampullary growth, endoscopic retrograde cholangiopancreatography.

Introduction:

The presence of a periampullary duodenal diverticulum in a patient with choledocholithiasis was first described in 1710 by the French surgeon Chomel. In 1762 Morganini described this type of lesion in detail (1, 2). Today we know that these out-pouchings of the duodenal wall in the vicinity of the ampulla of Vater occur frequently and mostly remain asymptomatic. Their presence is often discovered accidentaly during diagnostic imaging or endoscopic examination. The reported prevalence of periampullary duodenal diverticula varies between 9 and 32.8% (3). Even though periampullary duodenal diverticulum usually is asymptomatic, it may lead to increased risk of some diseases, such as acute pancreatitis or choledocholithiasis. Recent findings strongly suggest that the presence of a diverticulum in the vincity of the opening of the common bile duct is an independent risk factor for the development of choledocholithiasis (4). The basic treatment in such case is an endoscopic retrograde cholangiopancreatography (ERCP), followed by a papillotomy and evacuation of the stones from the bile duct (5). Concerns have been raised that the presence of a diverticulum in the vicinity of the ampulla of Vater may be a factor impeding successful bile duct cannulation and papillotomy what could be associated with a higher risk of complications and higher percentage of so-called "failed cannulations" of the ampulla of Vater. It is also speculated that they also increase the risk of recurrence of choledocholithiasis.

The aim of the study was to evaluate the prevalence of periampullary diverticula in the studied population and establish whether success rate of cannulation in both groups.

Material and methods The analyses was performed retrospectively. The study group of 400 patients who underwent ERCP between 2015 and 2017 at institute of medical gastroenterology, Madras medical college were analysed. The group comprised of 170 women (mean age 60 years) and 230 men (mean age 55 years). The patients were divided into two groups. Group A included patients in whom there were no periampullary diverticula detected. Group B included patients in whom the periampullary diverticulam were identified.

Endoscopic procedures were performed after intravenous infusion of sedatives and analgesics in fractionated doses. Inclusion criteria was ERCP performed for Biliary diseases due to the presence or suspicion of choledocholithiasis , Periampillary carcinoma, Hilar carcinoma, Gall bladder malignancy, Post cholecystectomy bile leakbased, For pancreatic disease Chronic pancreatitis with single dominant stone or stricture, Traumatic pancreatitis and pancreatic divisum .Imaging examinations includes (such as abdominal ultrasonography (USG), CT abdomen and magnetic resonance cholangiopancreatography (cholangioMRI). All of the examinations were performed by a team of experienced endoscopists.

A PAD was defined endoscopically as a depressed lesion of 5 mm or more with intact mucosa within a radius of 2.5 cm of the papilla (6). PAD were classified as type 1, 2, or 3 according to the position of the major papilla from the endoscopic view (7): type 1, the major papilla was located inside of the diverticula; type 2, the major papilla was located at the edge of the diverticula; type 3, the major papilla was located outside of the diverticula. The sizes of PAD were measured by using a Triple-Lumen Sphincterotome with a scale on the tip during ERCP. The largest diameter of the PAD among length, breadth, and height was chosen as its representative.

Successful cannulation was described as a deep cannulation of the ampulla of Vater allowing the full visualization of the bile tree and for pancreatic cannulation deep into pancreatic duct. A total of 400 endoscopic examinations were performed in the studied group. Any complications that occurred during or immediately after the procedure were noted in the surgery report and history of the patient.

For the purpose of the study the patients were divided into two groups. Group A included patients in whom there were no periampullary diverticula detected. Group B included patients in whom periampull ary diverticulum identified. Analysis was carried out by using SPSS-16 statistical software.

All procedures have been performed in accordance with the ethical standards laid down in the 1964 Declaration of Helsinki and its later amendments. Informed consent for surgical treatment was obtained from all patients before the surgical procedures.

Results :

Table 1:

Indication for ERCP	Group A(Patients without periampullary diverticulam)	Group B(Patients with Periampullary diverticulam)
CBD stone or sludge	270	45
Periampullary carcinoma	40	5
Pancreatic malignancy	10	3
Bile leaks	5	2
Pancreatic pseudocyst	5	1
Chronic pancreatitis	10	4
Technical success of ERCP	85.5%	65%
Complication related to ERCP	3%	5%

There were 340 patients included in group A and 60 patients in group B. The prevalence of periampullary diverticula in the analysed group was 15%, Technical success of ERCP in patient without periampullary diverticulam 85.5%, With periampullary diverticulam65%. Complication in group A 3%, In group B 5% . Complication rates higher in the presence of Diverticulam.

Complications of ERCP in Bleeding after papillotomy, Acute pancreatitis, Cardiorespiratory episode and Perforation of gastrointe stinal tract.

Kennedy observed that the presence of periampullary duodenal diverticula favors the development of choledocholithiasis (8). This thesis was confirmed by Lotveit et al. comprehensive analysis published around the same time (9). Even though the data provided by the authors on the incidence of choledocholithiasis are very different, they both agreed that the presence of a periampullary duodenal diverticulum is an important risk factor for the accumulation of concrements in the bile duct. In Rajnakova's study, the presence of choledocholithiasis was observed in 9.7% patients without diverticulum and in 16.7% patients with duodenal one (10). Tham and Kelly reports entirely different data, confirming only the thesis that the localization of the ampulla of Vater in the vicinity of a diverticulum significantly increases the incidence of stones in the bile duct. Choledocholithiasis was documented in 64% of patients with diverticula and in 33% of patients without diverticula (11). Data provided by Zoepf et al. 46% in the diverticulum group and 33% in the group without diverticula and by Christoforidis et al. – 44% and 24%, respectively, are similar, and each of them observes a statistically significant difference between the studied groups (12).

Generally differences in the incidence of common bile duct stones irrespective of presence of diverticulum varies greatly. In quoted publications it ranges from 9,7% to 80% of patients submitted to ERCP. This discrepancy can be, at least partially, explained by differences in the inclusion criteria for ERCP. Highest detection rate is found in centers where ERCP is performed only with therapeutic goal preceded by cholangioMRI in all cases. Currently if stones are discovered in the bile duct the preferred treatment is papillotomy and the evacuation of the stones.

In our findings we have observed a statistically significant difference between the number of complications following ERCP in the group of patients with duodenal diverticula and the group of patients without duodenal diverticula. The complications were more common in patients with duodenal diverticula.

Conclusions

1. Duodenal diverticula appear more commonly in older patients.
2. Choledocholithiasis presents more frequently in patients with duodenal diverticula, Reccurent choledocholithaisis is found more frequently in patients with diverticula.
3. Deep cannulation of the papilla of Vater and visualization of bile ducts failed more commonly in patients with diverticula and Complications related to ERCP are more common in patients with diverticula.

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