

Histologic Aspects and Outcome of Laparoscopic Cholecystectomy in Chronic Acalculous Cholecystitis

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ABSTRACT: Aim: to investigate the histologic lesions and outcome of laparoscopic cholecistectomy in chronic acalculous cholecystitis. Material and method: analysis of 63 cases of chronic acalculous cholecystitis operated on between 2003-2007. There were 50 women and 13 men with median age of 52 years. Clinic, laboratory and imagistic investigations eliminated other digestive diseases mainly in the gastro-duodenal area. Surgical intervention consisted in laparoscopic cholecistectomy. All removed gallbladders were sent to histologic examination. The patients were questioned by telephone upon the persistence of symptoms and the degree of satisfaction of surgery. Results: there were no Intraoperative accidents. Postoperative complications were minor. There was no postoperative mortality. In 59 cases (93,65%) histologic lesions were noted: chronic cholecystitis – 26 cases, chronic cholecystitis and cholesterolosis – 10 cases, cholesterolosis – 7 cases, focal acute cholecystitis on chronic cholecystitis – 6 cases. In 4 cases (6,35%) the histologic examination found no lesion. 61 patients (96,8%) expressed the disappearance of the symptoms and a good and very good degree of satisfaction. Conclusions: In chronic acalculous cholecystitis the indication for surgery is based upon patient's symptoms and exclusion of other digestive diseases. The histologic examination establishes the diagnosis of certitude. The laparoscopic approach offers conditions of full security and satisfaction for the patients.

KEYWORDS: *chronic acalculous cholecystitis, laparoscopic cholecystectomy*

Introduction

Chronic acalculous cholecystitis (CAC) is a clinical syndrome, characterized by biliary symptoms, mainly pain with typical aspect of biliary pain, in absence of any gallbladder lithiasis.

Frequency is quite high, even if we consider only the percentage of 5-15 reported in surgical series without the patients under medical treatment [1]. Establishing indication of cholecystectomy is a challenge for the clinician. This is usually done after exclusion of other diseases that could be responsible for a similar symptomatology. Pathological substrate is represented by changes of chronic inflammation, but these are not found in every case during histopathological examination of cholecystectomy specimens.

Unlike conventional cholecystectomy, laparoscopic cholecystectomy (LC) offers all the advantages of mini-invasive surgery: superior cosmetic result, reduced postoperative pain intensity, faster resumption of intestinal transit, early mobilization, faster recovery, quicker resumption of the usual activities, lower risk of wound infectious complications and postoperative incisional hernia [2,3].

We aimed for a study of operated CAC cases in order to highlight common pathological lesions and to evaluate the effectiveness of indication for

and laparoscopic cholecystectomy in the disappearance of symptoms and quality of life.

Material and method

We studied in a retrospective manner the observation charts of patients with laparoscopic cholecystectomy, between 2005-2007. Of these, we selected patients of whom preoperative diagnosis was chronic acalculous cholecystitis.

Of clinical point of view, all these patients had right upper quadrant pain with typical character of biliary colic with or without biliary type dyspepsia. Abdominal ultrasound, in none of these patients could identify gallstones preoperatively.

Standard biological determinations in these patients were: blood count, urea, glucose, hepatic transaminases, alkaline phosphatase, bilirubin, coagulation tests, urinalysis. All patients were performed preoperative electrocardiogram and chest X-ray.

Patients without gallstones but with changes in liver transaminases, bilirubin values, alkaline phosphatase, or dilated main bile duct at ultrasound examination were excluded from the study.

Diagnosis of non-lithiasic chronic cholecystitis was established on the basis of symptoms and after exclusion of other digestive diseases by complementary tests as upper gastrointestinal endoscopy, and barium studies, colonoscopy, abdominal CT scan (computerized tomography).

Technique of laparoscopic cholecystectomy was a standard one, with 4 trocars: optical trocar at the umbilicus, main working epigastric trocar and two secondary working trocars under costal margin on the anterior axillary line and the medioclavicular line, respectively.

Gallbladder dissection was performed in a retrograde manner, identifying, clipping and cutting the cystic duct, followed by isolation, clipping and cutting of the the cystic artery and then dissecting the gallbladder from the liver bed. Intraoperative cholangiography was not performed in either case. Subhepatic drain was at the decision of operating surgeon.

All specimens of cholecystectomy were opened and examined macroscopically for the presence of parietal lesions and then subjected to microscopic examination (HP).

There were not recorded any incidents and accidents during the intervention and immediate postoperative complications. Patients were contacted by telephone and were asked about persistent biliary symptoms and the degree of satisfaction after surgery classifying it as poor, good or very good.

Results

The total of cases of laparoscopic cholecystectomy operated between 1996-2007 is 715. In 63 cases preoperative diagnosis was chronic alithiasic cholecystitis. This represents a rate of 8.81% of the total.

Demographics: The majority of patients were from urban areas - 45 (71.42%), the majority were female-50(79.36%). Patients' ages ranged between 27 and 58 years, with a mean age of 43.19 years.

Number of abdominal ultrasound / patient before surgery decision was minimum 3 and maximum 6 with an average of 4.39 scans / patient, and the time between, from 1 month to 8 months on average 3.19 months.

The time from onset of symptoms until surgery was at least 4 months and maximum 20 months, mean 11.19 months.

Paraclinical explorations carried out in these patients were in number 115.

- Upper GI endoscopy - 48
- Barium transit esogastroduodenal - 34
- Colonoscopy - 18
- Radiography - 11
- Abdominal CT - 4.

No intraoperative injuries occurred.

Postoperative complications were:

- Infection of the trocar wound at the extraction site - 3 cases (4.76%),
- wound hematoma - 2 cases (3.1%).

No postoperative mortality was recorded.

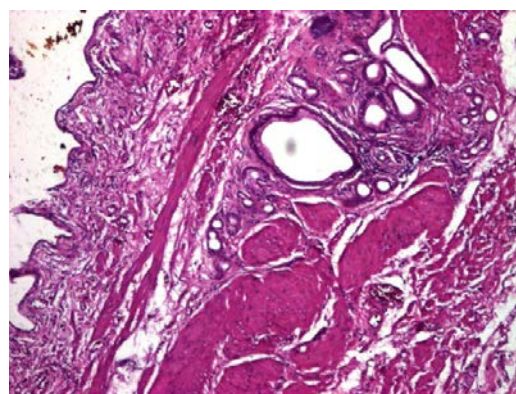
In 59 cases (93.65%) were recorded various histopathological changes.

- Chronic cholecystitis - 26 cases (41.27%);
- Chronic microlithiasic cholecystitis - 10 cases (15.87%);
- Chronic cholecystitis with colesterolosis - 10 cases (15.87%);
- Colesterolosis - 7 cases (11.11%);
- focal acute cholecystitis on a background of chronic cholecystitis - 6 cases (9.5%).

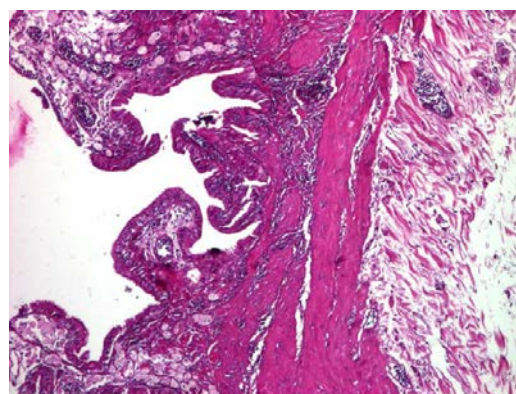
In 4 cases (6.35%) the H.P. was normal. All 63 patients were available for evaluation of the operation. Disappearance of symptoms was noted in 58 patients (92.06%).

Among patients with histopathological changes, in 3 of them, the symptoms returned after surgery, but with much lower intensity, patients considering the result of surgery as "good".

Among patients with normal gallbladder, in 2 of them, the symptoms subsided completely appreciating the result of the operation as a "very good". In the other 2 patients symptoms returned after surgery, they said that operation has not influenced only to a small extent the symptoms, but the operation result was still qualified as "good".



**Fig.1.Chronic cholecystitis – subserous fibrosis
hematoxylin-eosin HE x 40**



**Fig.2.Atrophic chronic cholecystitis – hematoxylin-
eosin HE x 20**

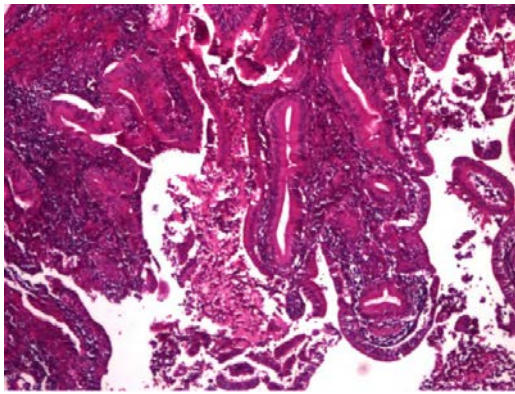


Fig.3. Acute on chronic cholecystitis –HE x 40

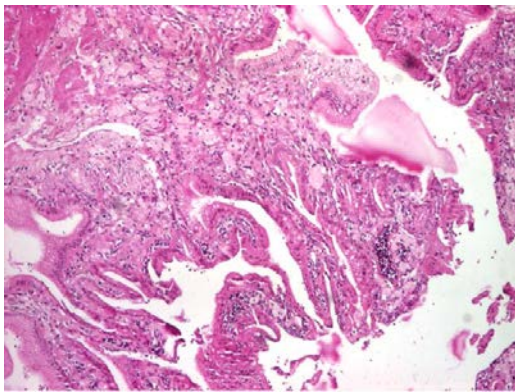


Fig.4. Lithiasic chronic cholecystitis and cholesterosis – hematoxylin-eosin HE x 40

Discussions

The issue of the study is a quite common situation in practice: patient with typical biliary pain but the abdominal ultrasound fails to identify stones. Chronic inflammatory changes in the gallbladder wall may occur in the absence of gallstones [4]. Lithiasic chronic cholecystitis syndrome can include a group of disorders that affect the function of the entire biliary tree, biliary dyskinesia, cystic duct syndrome, sphincter of Oddi stenosis [5].

Laparoscopic cholecystectomy is proposed to these patients after conducting numerous paraclinical explorations to exclude other digestive diseases including abdominal ultrasound, many symptomatic treatments, repeated hospitalizations in Clinical Gastroenterology and Internal Medicine. This results in significant health costs for these patients plus the cost of temporary disability days.

Lithiasic chronic cholecystitis syndrome includes several pathological situations labeled under different names that hide many functional disorder or chronic inflammation. Functional disorders consist mainly in disorders of evacuation of the gallbladder [4].

Our group was selected retrospectively from a series of patients with laparoscopic cholecystectomy to analyze real situations encountered in practice.

In our series, the proportion of CAC was 8.81%, a figure that puts us somewhere in the middle of the range announced by other authors [1]. As other studies we have found female sex predominance and relatively young average age of patients [6].

Patients were followed by preoperative clinical and imagistic examinations over a relatively long period of time where multiple efforts have been made to clarify the diagnosis of biliary lesions and to exclude other diseases. Excluding patients with changes in liver transaminases, cholestatic liver enzymes, bilirubin and dilated main bile duct at ultrasound exam, aimed at eliminating oddian dysfunction syndrome type I and II [7]. Based on current knowledge of oddian manometry, in these patients, therapeutic indication is endoscopic sphincterotomy.

We noticed the absence from preoperative imaging of cholecystokinin-dimetiliminodiacetic acid biliary scintigraphy (CCK-HIDA). This is not an effective exploration for prediction of success of laparoscopic cholecystectomy in chronic acalculous cholecystitis [8]. Decreased ejection fraction below 35% can be found both in symptomatic patients and in those in the control group, so its usefulness is questioned [9]. Low ejection fraction at hepatobiliary scintigraphy is not a good predictor for postoperative symptoms relief [10].

Most patients had histopathological changes of chronic inflammation at HP examination. In 10 of them there were microcalculi found. This is possible due to the resolution limits of percutaneous abdominal. It is possible that the use of imaging with a higher resolution, such as endoscopic ultrasound, could establish the diagnosis of chronic cholecystitis and decide faster lithiasic preoperative surgery.

A significant number of patients presented cholesterosis. Symptomatic gallbladder cholesterosis undetected at ultrasound exploration is successfully treated with laparoscopic cholecystectomy. In CAC with cholesterosis patient's satisfaction rate after laparoscopic cholecystectomy is 19 out of 20 [11].

Four patients in our study had a normal gallbladder at histopathology examination. In two of these there was complete resolution of symptoms postoperatively, but in the other two symptoms returned after a variable period of time. This result can be explained only by the existence

of functional disorders in the biliary tree, for example, an Oddi sphincter dysfunction syndrome type III [7]. Oddian manometry may be indicated in such situations, but it is not currently practiced in our university center. According to some authors, patients with CAC who remain symptomatic after LC, may benefit from endoscopic retrograde cholangiopancreatography with oddian manometry, and if it detects oddian dysfunction, symptoms are relieved by endoscopic sphincterotomy [12].

In our study, 92.6% of patients expressed a high degree of satisfaction with respect to the complete disappearance of biliary symptoms existing prior to surgery. These data fall into the upper range quoted in the literature and is probably due to more rigorous selection of patients. According to several authors, LC in CAC has an overall success rate of 85%-94.5% in relieving symptoms[11,13].

The technique of laparoscopic cholecystectomy was the usual one. Laparoscopic surgery was a technique common. Intraoperative colangiography was not practiced in any of these patients, because the attitude in our clinic is to explore the common bile duct only if there is a suspicion in anamnesis, clinical or laboratory data for the presence of choledocal lithiasis. In these cases we perform preoperative endoscopic ultrasound whose sensitivity and specificity in detecting gallstones is similar, and its negative predictive value is at least equal to those of intraoperative or retrograde cholangiography [14,15].

Very low rate of intraoperative injury in laparoscopic surgery is due to experience of our surgical team. Low postoperative morbidity and low rate of major postoperative complications would recommend applying this approach in cases of non-lithiasic chronic cholecystitis [16].

Moreover, the laparoscopic approach has driven approximately twice the frequency of non-lithiasic chronic cholecystitis patients in series of laparoscopic cholecystectomy. Patients with non-lithiasic chronic cholecystitis present on the long term a symptomatic remission similar to the patients with lithiasic chronic cholecystitis [17].

Conclusions

In chronic acalculous cholecystitis, surgical indication is based on the patient's suffering and exclusion of other diseases of digestive area. Histopathology is establishing diagnosis. Laparoscopic approach is safe and offers high patient satisfaction.

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