

Post cholecystectomy syndrome: an out of date topic?



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The post-cholecystectomy syndrome, whose finding is always possible, apart of cases of biliary tract iatrogenic injuries (stenosis or leakages), is related to a residual cystic stump lithiasis or more often related to a synchronous main bile duct disease (lithiasis and/or oddities) that could be prevented by pre- or intra-operative cholangiography. The clinical suspect of those conditions should be confirmed by cholangio -MRI. The treatment of main bile duct lithiasic disease is essentially endoscopic. The treatment of the remnant stump lithiasis - flogosis could be performed by laparoscopic or more often by laparotomic surgery because of post-operative flogistic adhesions, especially if an open cholecystectomy has been already performed.

KEY WORDS: Post cholecystectomy syndrome.

Introduction

Even in laparoscopic age, the so-called "post-cholecystectomy syndrome" still remains a subject of scientific debate within medical and surgical literature, although, unlike in the past, the attention is no more mainly focused on the remnant cystic duct length.¹⁻⁶

Reviewed by Rogy (1991), 35 patients on 320 repeated surgical procedures performed on the biliary tract had a longer than 1,5 cm "cystic stump" as operator finding. In 24 of those patients a *concomitant pathology* was associated: a main biliary tract lithiasis in 14 cases, an Oddi sphincter's stenosis in 6 cases, chronic pancreatitis in 3 cases and one case demonstrated a chronic hepatitis. A remaining cystic duct related *primary* disease was observed in 10 patients and it was a cystic stump or cystic-pielic stump lithiasis in 8 cases, a stump to duodenum fistula in one case and a granuloma (perhaps a

neurinoma) in another case. One of the patients had simply a long cystic stump but its surgical correction didn't solve symptoms.⁷

Biliary and not - biliary causes of post-cholecistectomy syndrome are widely reported in literature: choledocholithiasis, bile duct injury and biliary leaks, cystic duct and gallbladder remnants, sphincter of Oddi dysfunction, biliary ascariasis, left hepatic artery or cystic artery stump aneurisms, pancreatitis, hepatitis, intestinal disorders.

Recently Kianicka B. et al (2007) reviewed the histories of 92 patients who underwent laparoscopic cholecystectomy and subsequently developed symptoms suggesting possible biliary complications: choledocholithiasis was found in 59 patients, bile leakage from the cystic duct (11 patients), bile leakage from the extrahepatic bile duct (4 cases), biliary stenosis in the common hepatic duct (5 cases) and 8 patients had blockages of the extrahepatic bile duct.

Fluid accumulation in the operative area is not uncommon: iatrogenic cystic duct leakage is one of the main sources of the fluid⁸⁻¹⁰, but the post-cholecystectomy syndrome, except when a iatrogenic lesion and biliary leak or collection exists, is mainly related to an unknown lithiasis of a remaining pielic-cystic stump and/or lithiasis of the common biliary tract. Today the treatment

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of a residual CBD with or without concomitant Odditis, essentially endoscopic, is easier than it was in the past, but the treatment of a primary pathologic stump is a more challenging surgical problem.

Our experience

On 510 cases of laparoscopic cholecystectomy performed between 2001 and 2005, with a conversion rate of 2,35% (12 cases), we report our experience related to five cases (0,98%) that showed at post-operative investigation a biliar tract concomitant pathology or primary cystic stump disease out of twenty cases of "post-cholecystectomy" related symptoms. The cases were clearly symptomatic within a period of one month until one year period after surgery. We found one case of biliary stump lithiasis and four cases of biliar duct pathology (three cases of residual biliar duct lithiasis and one case of Odditis without CBD lithiasis). All patients were submitted as a pre-operative routine to an assessment by UES, to document gallbladder lithiasis, and cholangio-MRI, to exclude biliary tract disease and disclose any possible anatomical biliar tree anomalies. Only 19 out of 510 (3,72%) patients could not perform RMI because of absolute contraindications.

Primary stump pathology: one case.

C. M., 24 years old, affected by intermediate thalassemia and gallbladder lithiasis, underwent an open cholecistectomy by a sub-costal right mini-laparotomy after a failed attempt of laparoscopic viscerolysis. One year after surgical intervention the patient experienced a biliary-related colic pain that could be positively dealt with antispastic drug administration.

The cholangio-MRI showed the presence of a pielic-cystic stump (3 cm long) resembling a neo-gallbladder and an 8 mm gallstone within its lumen. Cystic duct was displaced just behind the right hepatic duct; CBD was of regular size without filling defects suggesting images of gallstones. Patient underwent open surgery one more time: after a meticulous viscerolysis the pielic-cystic stump was identified, deeply placed into the liver hilum, surrounded by relevant inflammatory tissues that made its isolation quite difficult. When the stump was opened, multiple small dark pigment gallstones, previously conglomerated, escaped. After repeated washing for removal of the stones an intra-operative cholangiography was performed. It was shown the cystic duct tightly close to the common hepatic duct. The stump removal and a drainage positioning completed the operation.

If the pielic-cystic stump was primarily lithiasic or if it had become because of the hematologic disorder of the patient is not very important as a practical data. The patient is now completely asymptomatic.

Residual CBD lithiasis: three cases.

We observed three cases of postoperative symptomatic residual CBD lithiasis. Two cases refer to patients that could not perform pre-operative cholangio – MRI assessment for absolute contraindication and were thus subjected only to an EUS pre-operative evaluation. The third case was that of a male patient, 57 years old, that presented with abdominal pain and transitory obstructive jaundice symptoms. He was diagnosed, by EUS and cholangio – MRI, to have gallbladder and CBD lithiasis respectively. After an endoscopic CBD stones removal failed attempt, patient underwent an open cholecystectomy with surgical choledocolithomy and papillotomy. However, the post-operative biliar tract assessment with a trans-Kehr cholangiography showed a residual CBD lithiasis. Two more endoscopic stones removal attempts were done before residual CBD lithiasis was completely treated and the patient clinically cured.

Odditis without CBD lithiasis: one case.

We had one symptomatic case treated by endoscopic papillotomy.

Discussion

The size and length of the residual cystic stump after a cholecystectomy is very variable. It is influenced by the biliary tree morphology but also related to surgeon preferences and techniques: even if the risk of CBD injuries, especially on earlier stages of laparoscopic learning curve, leads to obtain as longer as possible stumps, usually the laparoscopic technique expects an optimal isolation of the cystic duct, made easy by magnification on the screen, useful so that the surgeon can place properly the small metal clips before section of the structure. This reduces the evenience of a residual pielic cystic stump within gallstone may remain or recur, that is a cause of "painful tomorrow" of cholecystectomized patients. In literature, reports of post-cholecystectomy "stump-related" syndrome have been decreasing over years because, in absence of lithiasis, rarely simply long cystic stump remnant can be the only cause of postoperative disturbances.

The remaining pielic cystic duct, a "neo-gallbladder" in some cases, appears to be more common when large inflammatory rearrangements of the Calot triangle make the identification and intra-operative dissection of vascular and biliary structures really difficult. No precaution, unless meticulousness and experience, can reduce the temptation, in complicated cases, of sectioning and closing the gallbladder at infundibulus level, to avoid the risk of an iatrogenic injury of CBD, in which evenience once recognised , it is always better to treat immediately. In

laparoscopic cholecystectomy, unless automatic suturing devices are used, the closure of gallbladder infundibulus is difficult, so that the remaining pielic cystic duct is typical of open or "converted" cholecystectomy.

It is also undeniable that the greater acceptability for patients of laparoscopic cholecystectomy and increased health education, compared to the past, has reduced the incidence of the cases where neglected chronic inflammatory-lithiasic diseases makes "surgically difficult" a cholecystectomy.^{11,12,13.}

The adoption of accurate methods of preoperative study like cholangio - MRI may provide an idea about the bile tree conformation, about the size and length of cystic duct, and mainly about the presence or absence of CBD lithiasis. Therefore, it may more easily address the patient to the sequential endoscopic/laparoscopic management, being residual CBD lithiasis the most frequent cause of postoperative pain^{14,15,16,17.} As well as in pre-laparoscopic era, the reduction of post-cholecystectomy CBD lithiasis syndrome could also be based on a laparoscopic intra-operative cholangiography, especially if the preoperative study was incomplete. Nowadays pre-operative cholangio - MRI assessment has gained wide clinical acceptance, so reducing the residual CBD lithiasis rate. In our experience, the only two residual CBD lithiasis cases occurred in those patients that could not performed MRI for absolute contraindication.

The post-cholecystectomy syndrome, which occurs on 1-5% of the operated patients, always requires, in addition to serological data and ultrasound, the execution of a cholangio magnetic resonance (rarely a retrograde cholangiography is required unless MRI gives doubt results) as an optimal method to find the exact cause of postoperative symptoms, focusing on detection of a stump and/or of a main biliary tract disease.

Although several cases of stump residual lithiasis treatment through extracorporeal lithotripsy by shock waves or osmio-laser have been reported (Benninger, 2004, Walsh et al. 2002)^{18,} we believe better indicated the open surgical treatment of the remaining stump, even by laparotomic approach, especially if the patients already underwent laparotomic surgery, because of potential inflammatory alterations which might be cholecystitis related or surgery related.

Although have been reported in literature several cases (Shaw et al., 2004; Lum et al., 2006; Walsh et al., 2002) that were treated by laparoscopic approach, the endoscopic treatment of main common duct lithiasis, despite the low risk of pancreatitis, is to be considered the golden standard where an endoscopic surgical service is available.^{19, 20, 21.}

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