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MAIN TRANSOPERATIVE AND POSTOPERATIVE COMPLICATIONS IN PATIENTS WITH CHRONIC CALCULOUS CHOLECYSTITIS UNDERGOING ELECTIVE CHOLECYSTECTOMY

Ildefonso Velázquez Sarabia
Medical Surgeon and Researcher, San Francisco de Campeche, Campeche, Mexico
https://orcid.org/0009-0000-4484-8220

Betty Sarabia Alcocer
Professor and Researcher of the School of Medicine, Autonomous University of Campeche, Mexico, San Francisco de Campeche, Campeche, Mexico
https://orcid.org/0000-0002-7912-4377

Betty Mónica Velázquez Sarabia
Medical Ultrasound Specialist and Research Physician
Champotón Community Hospital "Dr. José E. Nazar Raiden", San Francisco de Campeche, Campeche, Mexico
https://orcid.org/0000-0002-9165-9016

Fernanda Gabriela R de la Gala Escobedo
Resident (R2) of Epidemiology of the Mexican Institute of Social Security (Instituto Mexicano del Seguro Social). San Francisco de Campeche, Campeche, Mexico
https://orcid.org/0009-0004-4995-9884

Lilian Priscilla Arjona Bojórquez
Resident (R1) of General Surgery, Hospital de Especialidades, San Francisco de Campeche, Campeche, Mexico
https://orcid.org/0009-0004-4945-9864

Michaelle Torres Cruz
Surgeon of the San Pablo Pixtun Health Center. San Francisco de Campeche, Campeche, Mexico
https://orcid.org/0009-0004-4949-9889

Valeria Estefania R de la Gala Escobedo
Medical Intern of Social Service the School of Medicine, Autonomous University of Campeche, San Francisco de Campeche, Campeche, Mexico
https://orcid.org/0000-0002-3754-1747

Abstract: Cholelithiasis is a condition with a high prevalence in the general population with a variable incidence according to the study population. In Mexico it is the first cause of consultation in general surgery, being cholecystectomy the most frequent surgical intervention performed in this same service. Most cholelithiasis are clinically silent, however, 40% of the carriers of this entity will present symptoms and up to 12% of these patients will experience complications, the most frequent being acute cholecystitis. **Objective**: To identify the main transoperative and postoperative complications in patients undergoing elective cholecystectomy. **Material and methods.** A retrospective descriptive, observational study was performed from the clinical records of patients with Chronic Lithiasic Cholecystitis undergoing Elective Cholecystectomy in a General Hospital during the period from January 2020 to December 2024. **Results.** Seventy patients were included. The median age of the patients at the time of the study was 43 years (Range= 18-75) and a mean of 42.3 years (S.D= 14.4); more than 65% of the included patients were female and 34.3% were male. 58.6% (29 patients) had some complication and only 41.4% (41 patients) had no complications associated with elective cholecystectomy. Only 21.4% of the cases presented complications during surgery (15 patients); fourteen patients with abdominal sepsis, 5 of them with acute renal injury and only one patient presented cardiorespiratory arrest. And 37.1% (26 of the 70 patients) had post-surgical complications, 4 patients had incisional hernia, 2 patients had acute kidney injury, 6 patients had wound abscess, 5 patients had wound dehiscence, 6 patients had intra-abdominal abscess and only one patient had cardiorespiratory arrest which was the only mortality event of the study. The median hospitalization time was 10 days, but the patients who presented surgical compli-

cations the time of surgery increased. **Conclusions.** Cholecystectomy is a very common condition in our environment, it represents the most frequent complication of cholecystolithiasis, and continues to predominate in the female sex with a ratio of 3:1. The results we found indicate that early cholecystectomy has a lower risk of complications both transoperative and postoperative, shorter duration of surgery and lower conversion rate. The ideal time to perform cholecystectomy in patients with cholecystectomy, on the results found in our study, suggest that early cholecystectomy could be considered as the first choice for the surgical treatment of this condition, since it would help us to avoid readmissions and decrease the possible complications secondary to this pathology.
Keywords: Transoperative complications, Postoperative complications, Chronic calculous cholecystitis and Elective cholecystectomy.

INTRODUCTION

Lithiasic or alliasic biliary disease is one of the most frequent diseases in the daily practice of emergency and surgery, worldwide and nationally. Adequate and timely study and treatment are essential to obtain good results that generate a positive impact on the health system and the health of patients. Cholelithiasis is a condition with a high prevalence in the general population with a variable incidence according to the study population. In Mexico it is the first cause of consultation in general surgery, being cholecystectomy the surgical intervention most frequently performed in this same service. Most cholelithiasis are clinically silent, however, 40% of the carriers of this entity will present symptoms and up to 12% of these patients will experience complications, the most frequent being acute cholecystitis.

In a practical way we can define cholecystitis as a syndrome that includes several clinicopathological states.[1] Among them:

- Symptomatic cholecystitis, with the presence of acute attacks of pain (vesicular colic) that resolves in 4 to 8 hours.
- Acute cholecystitis, a clinical picture in which gallbladder colic is of longer duration and is accompanied by fever, biological markers of inflammation, or cholestasis[(2).]

In 2007, there were 218,490 consultations for cholecystitis at the Mexican Social Security Institute, of which 69,675 cholecystectomies were performed[3], and at the General Hospital of Mexico, a prevalence of gallbladder lithiasis of 12.9% was studied in autopsies[4].

Acute cholecystitis is the inflammation of the gallbladder as a result of an obstruction of the cystic duct, usually as a result of gallstones or gallstones, in 5% of cases there may be absence of gallstones (alliasic cholecystitis), typically occurs in critically ill patients including the range of patients with sepsis, hypoperfusion or in burned patients [(5-) (7)]. Chronic cholecystitis is a prolonged and subacute condition caused by mechanical or functional dysfunction of gallbladder emptying, it can be exacerbated by sudden pain (acute biliary colic) or acute gallbladder inflammation (acute cholecystitis), the main cause of chronic cholecystitis is gallbladder lithiasis, called chronic lithiasic cholecystitis[8].

Gallstones represent the inability to maintain certain types of bile solutes, mainly cholesterol and calcium salts in a solubilized state. They occur when there is a disproportion between these components.[9]There are several well-established risk factors: female sex, obesity, pregnancy, diet, Crohn's disease, terminal ileal resection, gastric surgery, hereditary spherocytosis, thalassemia and sickle cell anemia.[10]

The incidences of complications in advanced cases of acute cholecystitis vary from 7.2 to 26% in various publications. The pathophysiology of complications is the same as that of acute cholecystitis, with lithiasis being the

main cause in most patients. The process is secondary to mechanical obstruction of the outflow tract at the level of the vesicular neck or in the cystic duct. Two factors arise from this obstruction that determine the progression of the condition: the degree and the duration of the obstruction, if the obstruction is partial and of short duration the patient experiences a vesicular colic if the obstruction is complete and of long duration the patient develops a condition of acute cholecystitis, if the patient is not treated in a timely manner usually the condition worsens and complications can occur.[12]Within the physiopathology of the progression of complications we can describe two well identified entities, these are the hydrops of the gallbladder, hydrops vesicularis or hydrocholecystitis and piocholecystitis.

An impacted gallbladder, but without triggering inflammation, causes an abnormal accumulation of fluid in the gallbladder called hydrops of the gallbladder (hydrocholecystole), during this event, bile is absorbed, but the secretion of mucus by the gallbladder does not stop and therefore it is distended with mucinous material, clinically it can even be palpated in some occasions. Hydrocholecystitis can cause edema, inflammation, infection and perforation of the gallbladder wall. Although it may persist with few consequences. Due to its progression to other complications, early cholecystectomy is indicated in order to avoid them. [13]

Since Robson in 1905 [2,13]the entity known as empyema of the gallbladder had been described and appears in many textbooks. Currently there are few, if any publications on this subject, this could be secondary to the use of broad-spectrum antibiotics in a discriminate manner or the current trend of early cholecystectomy.

Gallbladder empyema or "pyococcyst" is defined as a gallbladder with a surgical finding of pus, i.e. the fluid accumulated by the impacted gallbladder becomes infected due to the accumulation of bacteria[14].

Another complication is gangrenous cholecystitis, resulting from poor perfusion of the gallbladder secondary to increased intraluminal pressure due to persistent partial or complete obstruction of the cystic duct[11]. It has been observed that elderly people with diabetes, coronary artery disease and high bilirubin levels are at greater risk of triggering this complication[15].

RESULTS

Seventy patients were included in the study. The median age of the patients at the time of the study was 43 years (Range= 18-75) and a mean of 42.3 years (S.D= 14.4); more than 65% of the patients included were female and 34.3% were male. 72.9% of the patients presented more than three episodes of pain. 30% of the patients were diabetic, 40% were overweight and 24.3% were obese. 32.9% of the patients reported using antibiotics at the time of diagnosis and 100% of the patients were using analgesics. Only 37.1% presented fever and the median time to first consultation was 5 months and the median time to surgery was 3 months. 58.6% (29 patients) had some complication and only 41.4% (41 patients) had no complications associated with elective cholecystectomy.

According to the general characteristics, the patients without complications associated with surgery were younger and more than 80% had not taken antibiotics and the median time for the first consultation was lower (Table 1). Of the 41 patients who presented complications; 17 had hydrocolecystitis (41.5%), 21 had pyococele (51.2%) and 3 had both complications (7.3%) (Table 1).

The ultrasound and postoperative characteristics were analyzed and contrasted. From the ultrasound reports it was found that 14.3% of the patients presented vesicular perforation, 27.1% a perivesicular abscess, 51.4% a vesicular wall edema, 11.4% vesicular sludge,

VARIABLE	UNCOM-PLICATED	WITH COMPLICATION			TOTAL	P
		HYDRO-CHOLECITE	PIOCO-LECIST	BOTH		
	N=29	N=17	N=21	N=3	N=70	
VESICULAR PERFORATION						
NEGATIVE	100 (29/29)	100 (17/17)	61.9 (13/21)	33.3 (1/3)	85.7 (60/70)	**<0.0001**
POSITIVE	0 (0/29)	0 (0/17)	38.1 (8/21)	66.7 (2/3)	14.3 (10/70)	
PERIVESICULAR ABSCESS						
NEGATIVE	100 (29/29)	88.2 (15/17)	33.3 (7/21)	0 (0/3)	72.9 (51/70)	**<0.0001**
POSITIVE	0 (0/29)	11.8 (2/17)	66.7 (14/21)	100 (3/3)	27.1 (19/70)	
VESICULAR WALL EDEMA						
NEGATIVE	34.5 (10/29)	23.5 (4/17)	81 (17/21)	100 (3/3)	48.6 (34/70)	**<0.0001**
POSITIVE	65.5 (19/29)	76.5 (13/17)	19 (4/21)	0 (0/3)	51.4 (36/70)	
BILIARY MUD						
NEGATIVE	82.8 (24/29)	94.1 (16/17)	90.5 (19/21)	100 (3/3)	88.6 (62/70)	0.583
POSITIVE	17.2 (5/29)	5.9 (1/17)	9.5 (2/21)	0 (0/3)	11.4 (8/70)	
CHOLEDOCHOLITHIASIS						
NEGATIVE	72.4 (21/29)	100 (17/17)	90.5 (19/21)	100 (3/3)	85.7 (60/70)	**0.048**
POSITIVE	27.6 (8/29)	0 (0/17)	9.5 (2/21)	0 (0/3)	14.3 (10/70)	
VESICULAR LITHIASIS						
NEGATIVE	6.9 (2/29)	17.6 (3/17)	76.2 (16/21)	100 (3/3)	34.3 (24/70)	**<0.0001**
POSITIVE	93.1 (27/29)	82.4 (14/17)	23.8 (5/21)	0 (0/3)	65.7 (46/70)	
ICTERICIA						
NEGATIVE	75.9 (22/29)	100 (17/17)	90.5 (19/21)	66.7 (2/3)	85.7 (60/70)	0.093
POSITIVE	24.1 (7/29)	0 (0/17)	9.5 (2/21)	33.3 (1/3)	14.3 (10/70)	
PANCREATITIS						
NEGATIVE	75.9 (22/29)	70.6 (12/17)	85.7 (18/21)	100 (3/3)	78.6 (55/70)	0.527
POSITIVE	24.1 (7/29)	29.4 (5/17)	14.3 (3/21)	0 (0/3)	21.4 (15/70)	

TABLE 1. ULTRASOUND OBSERVATIONS

14.3% choledocholithiasis, 65.7% of the cases had vesicular lithiasis, 14.3% presented jaundice and 21.4% with pancreatitis (Table 1).

For the identification of the surgical characteristics and transoperative and postoperative complications in patients submitted to elective cholecystectomy, it was found that 44.3% presented edema in the gallbladder wall at the time of surgery and only 20% of the patients had calot triangle fibrous in 94.3% of the cases with cholelithiasis and 72.9% of them with acute cholelithiasis. The median operative time was 90 min, but in patients with surgical complications the operative time increased as did the volume of bleeding. Only 21.4% of the cases presented complications during surgery (15 patients); fourteen patients with abdominal sepsis, 5 of them with acute renal injury and only one patient presented cardiorespiratory arrest. And 37.1% 26 of the 70 patients had postoperative complications, 4 patients had incisional hernia, 2 patients had acute kidney injury, 6 patients had wound abscess, 5 patients had wound dehiscence, 6 patients had intra-abdominal abscess and only one patient had cardiorespiratory arrest which was the only mortality event of the study. The median hospitalization time was 10 days, but the patients who presented surgical complications the time of surgery increased.

DISCUSSION

Indications for cholecystectomy include a wide variety of etiologies, including all symptomatic manifestations of gallbladder stones, such as jaundice, acute calculous cholecystitis, acute chronic calculous cholecystitis, cholecystolithiasis, choledocholithiasis, biliary pancreatitis.

About 95% of biliary tract diseases are related to gallstones, an entity that represents the first cause for which cholecystectomies are performed. In Mexico there is a lack of reliable global statistics that indicate the incidence of cholelithiasis, its clinical presentation and the results of the different treatments. The statistics reported by health sector institutions reveal that the prevalence of this entity is 14.3%; undoubtedly, it depends on age, sex and lifestyle habits. Our observed results coincide with those reported in other studies and with the available statistics. There is a ratio of three women for every man and with an average age of 37 years. At least 25% of women and 20% of men will have gallstones at some point in their lives.

Of all the cholecystectomies performed electively, 41.1% become a complicated surgery. Therefore, most of the cases in which the decision to choose the type of surgical approach lies in the technology of the surgical material available, the experience and skills of the surgeons, the degree of complication of cholecystitis and the possible benefits of one with respect to the other, which individualizes each patient.

CONCLUSIONS

Cholecystectomy is a very common condition in our environment, it represents the most frequent complication of cholecystolithiasis and continues to predominate in the female sex with a 3:1 ratio.

The results we found indicate that early cholecystectomy has a lower risk of both trans- and postoperative complications, shorter duration of surgery, lower conversion rate, lower readmission and a decrease in possible complications secondary to surgery.

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