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بالرسالة صفحات لم ترد بالاصل

STUDY ON LAPAROSCOPIC CHOLECYSTECTOMY IN RISKY PATIENTS

Thesis

Submitted for Partial Fulfillment of the M.D. Degree in

"General Surgery"

BT025

By

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Gall stones and their sequels are not a malady of modern times, the earliest known gallstone dates back to the twenty- first Egyptian dynasty (1048-945b.c.) having been discovered by modern scientists in the mummy of a priestess of amen [1].

Gallstones were first described in the fifth century by a Greek physician, Alexander Trallianus, who wrote what about the calculi in the bile duct, followed by Joenisius, who first extracted gallstones through a biliary fistula [2]. Jean Louis Petit [1674-1760] noted that a gallbladder could become adherent to the abdominal wall. And he proposed that it can be punctured through the abdominal wall, by a trocar for drainage and the wound can be enlarged by a knife if stones were found facilitate their passing out. It is not clear whether he actually performed the procedure or not, however, the first cholecystostomy is credited to Jhon Stough Bobbs in 1867 in a patient with hydrops of the gallbladder. He removed the stones and closed the gallbladder with sutures [3].

Carl Langenbuch of Berlin performed the first cholecystectomy in June 1882. Four years later, the first cholecystectomy in the USA was performed by Justus Ohage. Long after that, the first cholecystogram

was done in 1924 by Graham and Cole, and the first operative cholangeogram was performed in 1932 [2].

After the establishment of open biliary surgery, another major step was to occur. Since the first attempts by Keeling to inspect the peritoneal cavity of a dog with a cystoscope in 1901, and by Jacobaes in 1910 who firstly reported using this procedure in man, many others contributed to the evolution of the laparoscopic era [4].

Laparoscopic cholecystectomy was first performed in a dog in the early 1980 by Filipi, Mall and Roosma. In 1987, Mouret in Lyon performed the removal of a diseased gallbladder in a patient. He exposed the porta-hepatis by forceful cephalic retraction of the gallbladder fundus [5]. Dubois, in communication with Mouret, immediately initiated animal laboratory testing, and in May 1988 performed his first laparoscopic cholecystectomy [6].

Working independently, McKerman and Saye performed the first laparoscopic cholecystectomy in the USA in 1988. Collaborating with McKerman and Saye, Reddick and Olsen soon began performing the procedure routinely in their institution and developed the technique of laparoscopic cholecystography [7].

Initially, a laser energy modality was used in the USA for coagulation and dissection of the gallbladder, within a short period of time modification of the technique and the development of new instruments proved that this procedure could be performed equally well using electro-cautary [8].

Anatomical Considerations

The gallbladder:

The gallbladder is a pear shaped sac. The main part is the body, which adheres to the gallbladder fossa or bed on the visceral surface of the liver. Its lowest extremity forms an expanded end, the fundus, which may or may not project below the inferior border of the liver in the region of the right ninth costal cartilage. At its upper end the body narrows to form the neck, which in turn becomes continuous with the cystic duct. The wall of the neck may show a small diverticulum directed downward and backward commonly called Hartmann's pouch [9].

The cysto-hepatic triangle: [triangle of Calot] fig.1

The right and left hepatic ducts leave the corresponding lobes of liver at the porta-hepatis and soon unite to form a common hepatic duct [10]. It is about 4 cm. long and lies in the free edge of the lesser omentum in front of the portal vein with the hepatic artery on its left [11]. The common hepatic duct is joined on its right side, at a variable angel, by the cystic duct, this junction forming the common bile duct.

The common hepatic duct on the left, the cystic duct on the right, and the liver above outline a triangle, the cysto-hepatic triangle of Calot which was originally described by Calot in 1891[12].

Contents of the triangle include:

1) The Right Hepatic Artery:

This artery passes behind the common hepatic duct to enter the triangle of Calot. As it approaches the cystic duct it gives off the cystic artery and then turns upward behind the right hepatic duct to the liver [10]. It might be mistaken for the cystic artery. As a rule, any artery more than 3 mm. in diameter within the triangle probably will not be the cystic artery [13].

2) The Cystic Duct:

This is the narrowest of the biliary passages. It is usually one and half inches in lenght, but may be shorter [14]. It passes backward, downwards and to the left to join the common hepatic duct about 1 cm. above the duodenum, so forming the common bile duct [9].

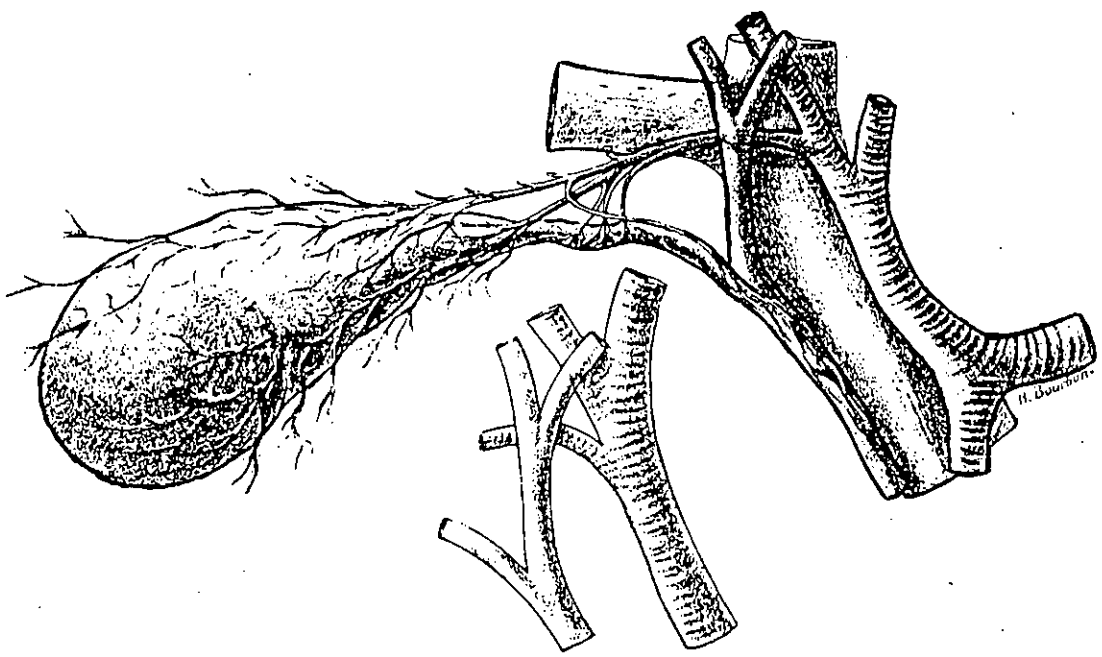

Fig. (1): The hepatobiliary triangle as described by Calot in his doctoral thesis(12)

3) The Cystic Artery:

This artery usually arise from the right branch of the hepatic artery, passes behind the common hepatic and cystic duct to the superior aspect of the gallbladder neck on which it descends to divide into superficial and deep branches [15]. Variations of the artery's origin are of surgical interest. Anson in his series observed the following incidences [16]:

Cystic artery arising from:

- the right hepatic artery in 63.9%,
- the hepatic artery in 26.9%,
- the left hepatic artery in 5.5%,
- the gastro-duodenal artery in 2.6%,
- the superior pancreatico-duodenal artery in 0.3 %,
- the right gastric artery in 0.1 %,
- the coeliac trunk in 0.3 % and
- the superior mesenteric artery in 0.8 %.

4) The Cystic Lymph Node.

Anomalies of the Gallbladder, Bile Ducts and Arteries

Anomalies of the extra-hepatic biliary tree and associated arteries are not just curiosities but major factors in the causation of bile duct injuries during surgery. A working knowledge of the incidence and types of anomalies is vital for safe cholecystectomy as 50% of patients presenting with gallstones show a significant variation from what is generally considered to be the normal anatomical pattern [17].

Anomalies of the Gallbladder:

Absent:

One of the uncommon anomalies is that of congenital absence of the gallbladder giving an incidence of about 2 in 10,000 cases. This anomaly ranges from complete absence to presence of a cystic duct, or merely a fibrous remnant. Other congenital anomalies may co-exist [18]. Diagnosis is confirmed after complete intra-operative inspection of the normal and ectopic sites fails to identify the gallbladder and operative cholangiography has confirmed its absence [17].

Multiple: