

to consider why these discrepancies occur, there are probably a number of reasons<sup>(5)</sup>:

1. It is not possible to compare the results derived from different methods (e.g. radiological and dissection)<sup>(5)</sup>.
2. One cannot necessarily expect, using the same investigative technique to produce identical measurements and observation on different basic materials (i.e., cadaver and operative specimens)<sup>(5)</sup>.
3. The operative field allows less scope for the dissection of the anatomical details which are best demonstrated on resin-cast material<sup>(5)</sup>.
4. Various radiological techniques, i.e., intravenous cholangiography, per-operative cholangiography, post-operative T-tube cholangiography, ERCP (Endoscopic retrograde cholangio-pancreatography), PTC (Percutaneous transhepatic cholangiography), do not necessarily produces exactly the same measurable results in the same patient<sup>(4)</sup>.

Many studies reported that the incidence of biliary anomalies varies from 15 to 66 percent<sup>(1,3,5,7-11)</sup>. This study aims at describing some anatomical variations of the extra hepatic biliary system that face the surgeon during cholecystectomy and determine the type and frequency of each anomaly.

## Methods

This is an observational study of one hundred and fifty consecutive patients with calculi of the biliary system operated on as elective cholecystectomies, all of them done in Baghdad Teaching Hospital for a period of one year (from 1<sup>st</sup> October 1999 to 1<sup>st</sup> October 2000). There were 112 females and 38 males, with age range

of 20-80 years and a mean age of 46 years. In general, the clinical presentation of patients was attacks of upper abdominal pain, vomiting, with or without jaundice. Preoperative investigations included abdominal ultrasound and liver function tests, which indicate the presence of gallstones or bile duct stones. Operative technique included laparoscopic method (117 cases = 78%) while conventional open method (33 cases = 22%) with or without common bile duct (CBD) exploration, 24 cases (16%) by right subcostal, and 9 cases (6%) by right paramedian incision.

At the time of operation, a detailed sketch was made by the surgeon, by elevation of the anterior margin of the right lobe of the liver with retraction of the stomach, duodenum, and colon to expose the gallbladder (GB), then by careful blunt dissection of the hepatoduodenal ligament and the Calot's triangle which is necessary in order to identify the structures in or around this region and avoid any accidental injury to the extrahepatic biliary ducts and blood vessels, and also to show the main anatomical features, and in particular the relations of the common hepatic, common bile, and cystic ducts, and the course and relations of the right hepatic and cystic arteries, and also to determine the type and frequency of each anomaly and its surgical significance.

## Results

The total series of 150 cholecystectomies have been done in this study, included 112 females (74.7%) and 38 males (25.3%) with a peak incidence in the fifth decade of life and a mean age of 46 years, as shown in (Table 1).

**Table 1. Age and Sex distribution**

Age (Yr.)	20-29	30-39	40-49	50-59	60-69	70-80	Total (%)
Male	2	5	12	8	6	5	38 (25.3)
Female	7	22	36	23	18	6	112 (74.7)
Total	9	27	48	31	24	11	150 (100)

\*Female: Male ratio = (112/38) = 3:1