

Tenets for safe cholecystectomy (Table 71.5)

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Safe zone of dissection The safe zone of dissection lies cephalad to a line extending from the roof of Rouvière's sulcus to the umbilical fissure across the base of segment IV (R4U line). The operating - surgeon tends to zoom the laparoscope closer to the surgical field to get a better view during difficulty, but this results in non-visualisation of the normal clues/landmarks necessary for correct orientation. Dissection on the posterior aspect of the hepatocystic triangle can be safely started immediately ventral and cephalad to the sulcus. The B-SAFE method uses five anatomical landmarks (B, bile duct; S, sulcus of Rouvière; A, hepatic artery; F, umbilical fissure; E, enteric/duodenum) to correctly place a cognitive map during dissection. Concept of 'time out' During difficult gallbladder surgery, the surgeon may become disoriented and enter the zone of danger. To avoid this, the concept of time out has been introduced as it serves as a procedural cognitive aid to recall and apply essential safety measures. Judicious use of energy sources With a monopolar energy device (mostly hook cautery), it is important to: /uni25CF keep a low setting (approximately 30 /uni00A0 W) to avoid arcing of the current to the bile duct; /uni25CF divide small amounts of the tissue at a time after a gentle pull to avoid injury to the deeper structures by the heel of the cautery hook; /uni25CF use intermittent short bursts of current at intervals to avoid thermal lateral spread; /uni25CF avoid blind use of cautery in brisk bleeding. Lateral thermal spread occurs less with an ultrasonic energy source, but it may be cumbersome to use the long and straight jaws to dissect in the hepatocystic triangle. Concept of the critical view of safety The aim of the CVS is the conclusive identification of the cystic duct and cystic artery to avoid misidentification injury. 'Stopping rules' With the help of red flag signs (severe adhesions, severe acute inflammation, large impacted stone in the neck of the gall bladder, Mirizzi syndrome, chronic inflammation with fibrosis Frederic Eugene Basil Foley, 1891-1965, urologist, The Miller and Anker Hospitals, St. Paul, MN, USA. or pre-empt difficult situations that increase the risk of biliary/vascular injury and to stop in time. Call for help/second opinion The operating surgeon should not hesitate to seek a second opinion whenever needed, and this should be considered a sign of good clinical practice rather than of surgical ineptitude. Bailout techniques/strategies The primary aim is the safety of the patient from biliary/vascular injury. It is important to perform an alternative procedure (bailout technique) that allows the surgeon to complete the operation in a safe manner. There are five bailout strategies: 1 abort the procedure altogether; 2 convert to an open procedure; 3 carry out a tube cholecystostomy using a 14 /uni00A0 Fr Foley catheter (a simple procedure to provide symptomatic relief until a definitive procedure can be performed); 4 carry out a subtotal

cholecystectomy (open/laparoscopic): leaving behind a part of the gallbladder is safer than a difficult dissection in the hepatocystic triangle with a potential for bile duct injury in an attempt to remove the entire gallbladder; 5 fundus-first approach. The choice of bailout procedure depends on the clinical situation and the experience/expertise of the surgeon. Conversion to open cholecystectomy should be 'by choice' at an early stage in a difficult cholecystectomy, e.g. the anatomy is not clear, the pathology is too difficult or no progress is being made, rather than the surgeon having to convert because of a complication, e.g. bleeding or bile duct injury.

Figure 71.32 Ligatures are passed and tied around the cystic artery and cystic duct. The grey shaded area represents Calot's triangle.

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