



H-SIGN -AN IMPORTANT LANDMARK FOR SAFE LAPAROSCOPIC CHOLECYSTECTOMY

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KEYWORDS :

Laparoscopic cholecystectomy is the gold standard treatment for symptomatic cholelithiasis and acute cholecystitis(1,2). Its safety has been established with early post-operative recovery and good cosmesis. However, concerns still persist regarding common bile duct (CBD) injuries with laparoscopic cholecystectomy. In patients who underwent laparoscopic cholecystectomy, up to 0.15 % patients with bile leakage required surgical intervention with mortality of up to 4.5% (3). Difficulties also do arise due to aberrant cystic arteries (4).Cystic artery usually arises from the right hepatic artery and travels supero medially in the hepatocystic triangle. It provides minor branches to cystic duct before dividing into anterior and posterior branches in the gall bladder(GB) wall. However in patients with chronic cholecystitis, having tented CBD and short cystic artery imposes a greater risk of injury to CBD or cystic artery. Non or misidentification of the common bile duct for the cystic duct, when this is not recognised in time, it may lead to excision of the bile duct. Other less frequent injuries are due to:

- Devascularisation and thermal injury leading to necrosis or stricturing,
- Traction at Gall bladder (GB) infundibulum and fundus is usually carried out to visualize Calot's triangle, excessive traction may lead to tenting of the common bile duct and in presence of short cystic duct, only the tented CBD is seen to enter the Gall bladder, making it highly vulnerable to injury i.e, transaction or clipping of CBD.

Inflammation owing to acute or gangrenous cholecystitis, fibrosis, intraoperative bleeding and aberrant anatomy are also responsible for injury.

In this report we highlight a simple, consistent and important anatomical landmark-the branch to cystic duct from cystic artery. Here we define simpler approach to prevent bleeding in such situations were critical view of safety cannot be defined. "H configuration" has already been described as a constant branch in 76-91% of patients. (4,5). It is formed by a branch of cystic artery (an artery to the cystic duct) connecting vertical limbs of the cystic duct laterally and the cystic artery medially (6).

We propose that non-visualization of "H" sign should stop Surgeons from unnecessary traction at GB fundus as the CBD will be tented and can be accidentally be injured. Tenting can be avoided.

By gently loosening the traction, the CBD attains the normal anatomical position. If H sign is appreciated, it's almost certain that the neighboring structure is Cystic Artery. As one has to differentiate the corresponding structure –cystic artery from descending CBD (in cases of tented CBD). Pulsatile common hepatic artery in the vicinity is also an important safeguard against CBD injury. Anytime when CBD is lifted up by excessive traction, Hepatic artery pulsation is seen.

Identification of this important anatomical landmark may help in identification of the duct and cystic artery.

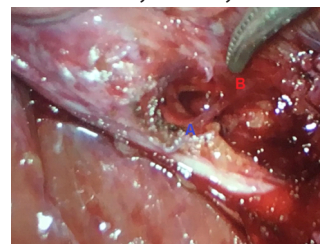


Figure 1. Branch To Cystic Duct The "h Sign", A- Cystic Duct , B- Cystic Artery.

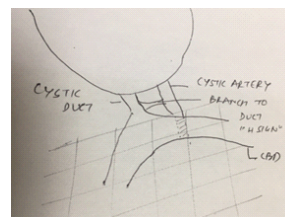


Figure 2. Visualisation of "H sign"

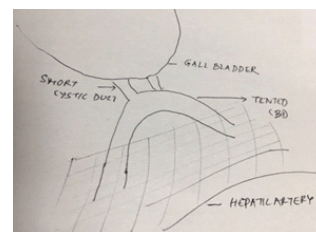


Figure 3. Tented CBD and non visualization Of "H sign"

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