Editorial

Bile Duct Injuries/Management With Jejunal Loop

Bile duct injury during operation has been dilemma for surgeons for ages. It is surprising that how experienced surgeons can injure a bile duct while on the face of it, anatomy looks very easy. It is traumatic to the patient as well as to the surgeon who experiences many sleepless nights. These injuries are disastrous for both the patient and the surgeon because of the associated morbidity, prolonged hospitalization, and mortality.[1] The patient is practically invalid till the complication is rectified. If the first surgeon declines to go in again, it is always better to get help from other surgeons. It is astonishing, with how much ease the injury occurs.

The objective should be to diagnose the complication early and remedial procedure should be done earlier.

Although surgery for gall bladder has become fairly advanced with the advent of laparoscope where structures are magnified to many folds, still bile duct injuries do occur. Rather Laproscopic Cholecystectomy (LC) is associated with a higher incidence of bile duct injury than open cholecystectomy, leading to prolonged hospitalization, difficult reconstruction, and increased morbidity.[2,3]

Subsequently, large surveys have shown that the incidence of bile duct injury as a consequence of Laparoscopic cholecystectomy has decreased as surgeons have gained more experience with laparoscopic surgery.[4] This injury is to some extent due to poor selection of patient, lack of proper dissection and mainly difficult pathology, deranged anatomy, and unscrupulous surgery.[5]

Injury of bile ducts may be broadly divided into two groups. One where there is complete division and proximal end is completely ligated and second where there is a partial injury.[6] In first group, patients develop jaundice in the early post-operative period with chills, fever and pain.[7] Many times this is attributed to post-operative jaundice due to blood transfusion if the patient had any or due to Hepatitis which is fairly common now a days. It is the progressive jaundice when surgeon suspects duct injury. In other cases when copious amount of bile is drained extraperitoneally if drain tube is inserted or signs of peritonitis appear if no drain is present.

In 2nd group where partial injury is present, patient may not be invalid but bile is draining and patient may have slight icterus, gradually full stricture forms and patient develops severe jaundice. Few patients have attended hospital 9–10 months after operation having severe jaundice.

It has also been seen that few patients come to you developing subphrenic abscess when drain tube stopped functioning and collection occurred.

Having said that and not going into much detail, some kind of remedy has to be instituted for bile duct injury. With advances in Endoscopy, for partial injury ERCP and cannulation is quite effective and safe procedure.[6] But at time it is difficult to locate ampulla or catheter cannot be inserted due to stricture or false passage.

Under these circumstances open procedure has to be accomplished to maintain continuity of bile duct. Various methods have been tried for years with varying results and success rates.

Bile duct transection and ligation can occur at various levels. Many factors need to be assessed when deciding upon the most suitable management of bile leakage, including the surgeon's experience, availability of an endoscopist, cost-effectiveness, equipment requirements, and length of admission and follow-up.

If good length of upper and lower segments is available, then end-to-end anastomosis over a T-tube is recommended for CBD reconstruction if the inflammatory change is not severe and there is no tissue loss or if proximal segment can be anastomosed end to side with duodenum, it will be more physiological. But most of the times, distal part gets shrunk and not visible, then proximal part has to be anastomosed with some part of GIT to help bile flow. It has to be remembered that this is not an easy task. Different surgeons have used stomach sleeve, duodenal or jejunal mucosal flap[8] or jejunum in some form.

Roux en Y choledochojejunostomy or hepaticojejunostomy has been the mainstay procedure for biliary drainage.[9] We have performed slightly different procedure in 25 cases in our setup. This was done due to poor condition of patient at time of exploration and technical reasons. We took loop of jejunum about 8 to 10cm from ligament of treitz and it was brought upwards anticolic and

anastomosed side to side with upper segment of common hepatic duct. In many patients, sufficient proximal segment was not available, and then portahepatis was explored for confluence, left or right hepatic duct. It should be remembered that this is again not an easy task. But with perseverance and patience we can find one duct or the other. Most of the times, it is flushed with liver bed. This may be anastomosed with side of jejunal loop, although not much of duct length is available but thick scar tissue around hold the stitch well. Infact it is plastering rather anastomosing with interrupted non absorbable suture. We usually insert a tube as a stent and as a drain. This has multiple holes and brought out through the anastomosis line into jejunal lumen and outside the skin. This tube was removed after 3-4 weeks. No jejuno-jejunostomy was done in 15 out of 25 cases. One out of 25 patients had to be re-explored due to anastomosis break down.

There was no mortality after this procedure. Rate of usual complications like jaundice, pain and pyrexia due to ascending cholangitis was comparable with Roux en Y procedure. Different studies have also shown comparable results in these two procedures.[10] No case of stricture at anastomotic site was reported. Mild symptoms responded to routine conservative management.

In summary, bile duct injury after cholecystectomy is a major problem that requires a multidisciplinary approach at a tertiary level center. Sepsis, biliary leaks, and collections should be managed appropriately, and proper classification of the MBDI via imaging needs to be done before the surgical repair. Fortunately incidence of CBD injuries is quite less, but emphasis should be on avoiding bile duct injuries. Best is if injury identified at time of surgery and rectified immediately. Otherwise it should be identified and explored as early as possible. Results of Roux en Y choledochojejunostomy and loop choledochojejunostomy are comparable but loop choledochojejunostomy is technically more feasible and simpler procedure.

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