CASE REPORT

Delayed chylous ascites – unusual complication post blunt trauma abdomen

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Keywords
Chylous ,ascites, blunt trauma ,abdomen, delay

Background
Pancreatic injury contributes to less than 5% of injuries associated with blunt trauma abdomen. Injuries with ductal disruption are treated with distal pancreatectomy. Among various complications, associated with this surgery, chylous ascites found in 9%. The chyle is observed immediately after the patient is started on oral feeds and hence a bowel rest with total parenteral nutrition [TPN] is the treatment of choice. In this case report, the patient developed chylous ascites after nine-day after surgery and five days after starting solid diet indicating causes other than surgery and the index trauma.

Case Summary
An eight-year-old male child with no known comorbidities, presented with a history suggestive of blunt trauma to the abdomen after accidental hit by bicycle handle over the upper abdomen. On presentation, the child complained of continuous dull aching non radiating severe pain in the upper abdomen associated with three episodes of non-bilious vomiting. On general examination, the child was conscious, vitals were stable with no evidence of hemodynamic instability. The abdominal examination revealed tenderness and guarding over the epigastric region and left hypochondrium. There was no evidence of free fluid on percussion and bowel sounds were present. Systemic examination was essentially within normal limits.

The child was evaluated and investigated as per the Advanced Trauma Life Support [ATLS] protocol. Focussed assessment by sonography in trauma (FAST) did not reveal any free fluid. On blood investigations, there was leucocytosis with neutrophils predominance. Serum amylase and lipase were increased significantly (488 U/L and 4191 U/L respectively). Liver and Renal function tests were within normal limits. Because of suspected pancreatic injury, the patient underwent Contrast-enhanced computer tomogram of the abdomen, which revealed an ill-defined poorly enhancing area from the neck to tail involving the entire anteroposterior width of the pancreas suggestive of grade IV injury to the pancreas. [Fig 1]

Fig 1. CECT Abdomen depicting complete transaction of body of pancreas (marked by arrow) with poor enhancement of distal pancreas

The child underwent emergency exploratory laparotomy and distal pancreatectomy under general anaesthesia. Intraoperatively, there was a complete transaction of the body of pancreas along its main body, two cms distal to the neck. The injured region was covered with clots and minimal saponification was noticed along the body and tail of the pancreas. There was associated disruption of the main pancreatic duct. Rest of the abdomen was essentially normal. Abdominal tube drains were placed along the stomach bed, Morrison's pouch and pelvic cavity. [Fig 2]

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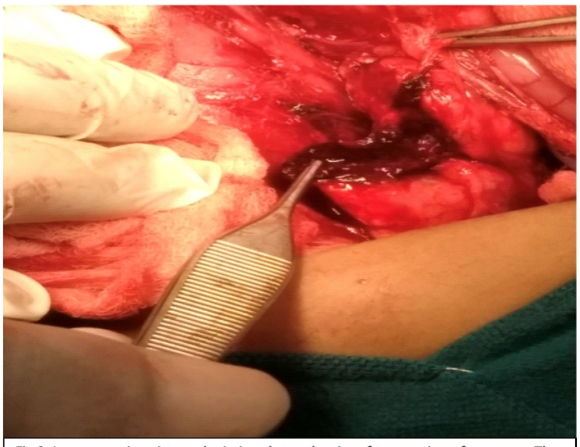

Fig 2. Intraoperative picture depicting clot at the site of transaction of pancreas. The main pancreatic duct is transacted.

The immediate post-op period was uneventful and the child was started on oral fluids on the third post-op day (POD) and solid diet from the fifth POD. On POD nine, the abdominal drain was found to have chylous output. Drain fluid triglycerides were markedly raised (750mg/dl) with elevated amylase and lipase but normal leucocyte counts. Drain fluid culture was sterile. The patient remained asymptomatic and radiological investigations failed to reveal any injury to the cistern chyli, thoracic duct or tributaries.

The patient was diagnosed as a case of delayed injury to cisterna chyli and managed conservatively with low fat, high protein medium-chain triglyceride[MCT] diet, octreotide and abdominal drain. The output reduced from 100ml on POD nine to less than 5ml on POD 21. A 15% reduction in weight was observed during this period. The drain was removed and the child was discharged on POD 23.

Follow Up

The child was followed up after 30 days of hospital discharge. He is recovering well and has regained the lost weight. He is planned for monthly follow up to monitor glycaemic control.

Discussion

Pancreatic injuries are rarely seen in a blunt trauma abdomen and contribute to less than 5%. The decision to go for conservative management versus surgery depends on hemodynamic status and ductal disruption.Chylous ascites is defined as the presence of milky non-purulent fluid with triglycerides more than 110mg/dl. The amylase level and WBC count should be normal with sterile culture. It is due to injury to cisterna chyli or its tributaries and is seen immediately after initiation of oral feeds . It is seen in surgeries of hepatobiliary, colorectal, aorta and lymph node resection. The maximum incidence of this complication is observed with pancreatectomy (11%) and D3 resection for carcinoma stomach (11.7%) [1,2].

The diagnosis is mainly clinically supported by raised triglycerides and chylomicrons with the absence of infection. There is no consensus on the minimum quantity of the fluid, however, significant ascites is defined as drain output of more than 200ml/day in an adult. Since chyle is rich in fat, proteins and immunoglobulins, there is an increase in the rate of sepsis and malnutrition. In our case, chyle was observed in the drain after four days of starting oral feeds. Unlike previously described, the authors believe that this is due to autodigestion of the cistern chyli or its tributaries by the pancreatic enzymes. This can explain the elevated amylase and lipase level in the chyle. [3]

There are no guidelines on the management of postoperative chylous ascites. However, the consensus is to initiate a trial of conservative management by TPN, low-fat MCT diet and abdominal drainage. This is successful in 70 to 100 % of cases. The ascites resolve between 5-19 days. In our case, we started the patient on a low-fat MCT diet and the output gradually reduced to nil within 12 days. In a few case series, it is advised to undergo therapeutic lymphangiography and re-exploration if the non-operative management fails [4,5].

Patient Perspective

Mother of Patient (Wishes to be anonymous) – "I was happy with the way my son was recovering after the surgery. His pain had reduced and he was feeding well. However, the complication arising from the milky fluid as seen in drain resulted in an extension of hospital stay. This complication was promptly identified and well managed by the surgical team of this institution. Presently he is doing well. His appetite has increased and he has started gaining weight."

References

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Learning Points:

- Chylous ascites is usually observed after initiation of oral feeds. However, it can also happen a few days after initiation of feeds. This is due to damage to the cistern chyli by the pancreatic enzymes from the cut end of the pancreas.
- This can be supported by elevated amylase and lipase level in the drain fluid in addition to raised triglycerides and chylomicrons.
- The management and the natural outcome is similar between early and delayed chylous ascites.
- It is advisable to keep the abdominal drains at least for one week after commencing oral feeds.