

Chylous Ascites Following Pylorus Preserving Pancreaticoduodenectomy: A Case Report and Review of Literature

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ABSTRACT

Chyle leak and chylous ascites is a rare complication encountered in pancreatico-biliary surgery. Chylous ascites after pylorus preserving pancreaticoduodenectomy has incidence of 1-10%. There are few studies present in literature regarding its evaluation and management. This case report is of a young female patient presenting with epigastric lump, underwent pylorus preserving pancreaticoduodenectomy (Whipple's Procedure) and developed chylous ascites on 6th postoperative day. Histopathology was consistent with solid pseudopapillary neoplasm of pancreas. This case report aims at describing the presentation of chylous ascites, its management and review of literature.

Keywords: Whipple's Procedure, solid pseudopapillary neoplasm, chylous ascites

INTRODUCTION

Chylous ascites is a well-known but a rare complication after pancreaticoduodenectomy. It is frequently encountered following aortic surgery and retroperitoneal lymph node dissection but incidence in pancreaticoduodenectomy ranges from 1% to 11%.^[1,2] Chylous ascites is due to disruption in flow of lymphatic. It may be due to obstruction, rupture or unsealing of lymph nodes or ducts. Lymphocytes and immunoglobulin rich chyle loss can lead to hyp immunity and dyselectrolytemia leading to severe infection, sepsis and even death. This case report is about a young

female presenting with pancreatic head mass and underwent Pylorus preserving pancreaticoduodenectomy. She developed chylous ascites postoperatively which was managed accordingly and also discussion about review of literature regarding its diagnosis and management.

CASE REPORT

A young female of 25 years of age presented with complains of pain right upper abdomen for 8 months. Pain was insidious in onset, gradually progressive, dull aching, non-radiating or referred to anywhere and associated with nausea without having vomiting, fever and jaundice. Her physical and systemic examinations were unremarkable. Per abdomen examination revealed a palpable, non-tender lump of 6x5 cm involving right hypochondrium and epigastrium having smooth surface, firm and well defined margins. No hepatomegaly or ascites. Her bio-chemical report was within normal limit. USG abdomen revealed a heterogeneous mass of 7.6x8 cm arising probably from head of pancreas having internal necrosis. On CECT abdomen, a well-defined, heterogeneous soft tissue mass of 8.2x9x8.7cm arising from pancreatic head with dilated pancreatic duct (7.3mm) and minimal bilobar IHBRD (Fig. 1). The patient underwent pylorus preserving pancreaticoduodenectomy (Fig 2,3) and during post operative course she developed

chylous ascites (on post op day 6). On evaluation her drain fluid triglyceride was 2568mg/dl and fluid amylase was normal. Conservative management was done by using Total Parenteral Nutrition (TPN) and somatostatin analogue (octreotide). Drain output gradually reduced and was minimal on post op day 12. Patient was discharged. Histopathological examination consistent with solid pseudopapillary neoplasm having infiltration into serosal surface of duodenum including ampulla with normal pancreatic tissue seen at periphery. No lymphovascular or perineural invasion and peripancreatic lymph nodes are free of tumor. The patient was enrolled into an imaging surveillance. She has been asymptomatic, not requiring any adjunctive therapy.



Figure 1: CECT abdomen showing a well-defined regular mass arising from head of pancreas, abutting liver with maintained fat planes.



Figure 2: Intraoperatively, a lump of size 7x7 cm was present in head of pancreas, well defined, regular margins with no adjacent extension or infiltration

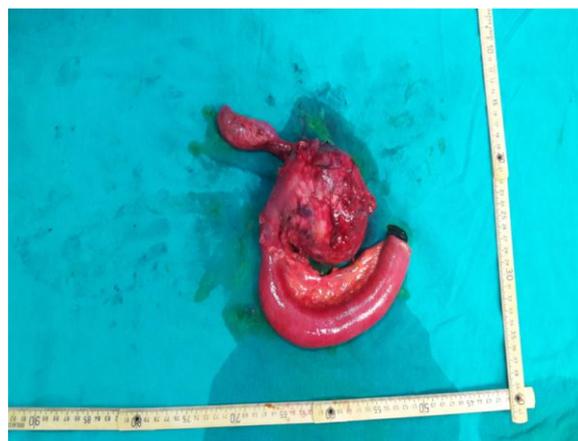


Figure 3: Specimen of pylorus preserving pancreaticoduodenectomy along with pancreatic head mass.

DISCUSSION

Chylous ascites is characterised by leakage of lipid rich lymph in peritoneal cavity due to damage to lymphatic vessels or cisterna chyli. Lymphatic system is formed by lymph capillaries which drain into lymphatic vessels then into lymph nodes to lymph trunks. Right and left lumbar trunks with intestinal trunk form cisterna chyli which continues to form thoracic duct which drains into left subclavian vein.

Chylous ascites can be due to surgical or non-surgical causes. It is a recognised complication following abdominal, urological and retroperitoneal surgery. Among non-surgical causes, lymphatic disruption is often seen in cirrhosis, neoplastic, infectious and inflammatory conditions. [3,4]

Risk factors identified in various studies for development of chyle leak leading to chylous ascites are female gender, in patients of old age, preoperative ascites and low albumin, chronic pancreatitis, preoperative chemotherapy, manipulation of paraaortic area, increased intraoperative blood loss and early enteral feeding. In our case only risk factors present was female gender and probably dissection at neck of pancreas. [1-7]

According to International Study Group on Pancreatic Surgery (ISGPS) Chyle leak is defined as output of milky-colored fluid from a drain, drain site, or wound on or after postoperative day 3, with

a triglyceride content >110 mg/dL (>1.2 mmol/L). [8,9] Chyle leaks manifests as painless, progressive abdominal distension after introducing enteral feeding along with milky discharge in drain or from incision site. [10] CECT abdomen is not routinely advised to diagnose chylous ascites. There is evidence from few studies that lymphangiography can be diagnostic as well therapeutic. [11]

ISGPS has devised grading system for chyle leak. It is categorised into 3 grades: Grade A- clinically irrelevant CL. There should be no prolongation of hospital stay. Grade B-one of the following criteria has to be fulfilled: nasoenteral nutrition with dietary restriction and/or TPN, percutaneous catheter drainage by interventional radiology or maintenance of the surgical drains, or drug treatments (eg, octreotide) to control the CL. Grade B requires prolonged hospital stay or patient is discharged with drain in situ or readmitted for CL. Grade C- requires more invasive treatment such as by interventional radiology involving lymphatic embolization/sclerosis, admission to an intensive care unit, operative exploration and peritoneovenous shunt, or implies mortality directly due to the CL. [10] According to this grading our patient was classified as Grade B.

Conservative management usually consists of Medium Chain Triglyceride (MCT) diet and TPN with or without somatostatin analogue (Octreotide). [1,2] It aims at decreasing chyle production allowing damaged lymphatics to heal, fluid and electrolyte replacement and maintain patient's nutritional status. High protein, low fat and medium chain triglyceride (MCT) diet is part of nutritional management. Addition of octreotide to TPN or MCT diet lead to early removal of abdominal drain. [1]

Our patient was managed conservatively using total parenteral nutrition and octreotide with MCT diet. This regimen was successful in reducing the drain output within a week and drain was removed.

If conservative management fail then more invasive procedures are utilised. Bipedal lymphangiography using lipidol has shown occlusion rates of 35% to 70%. Alejandro-Lafont et al in their study population of 43 patients showed occlusion rates of 70% using lipidol lymphangiography technique when drain output was less than 500ml/day. [12] Matsumoto et al reported successful closure of lymphatic fistula after lymphangiography in 8 out of 9 cases. [11]

In surgical management of chylous ascites, peritoneovenous shunt placement is another option. [7,13] If chylous ascites is due to retroperitoneal fistula, its surgical closure was most successful. Leaking lymphatic channels can be identified, ligated, laser or shunted using laparoscopy. [14]

CONCLUSION

Chylous ascites is a rare complication of pylorus preserving pancreaticoduodenectomy (Whipple's Procedure) which requires a high index of suspicion for diagnosis of the post operative complication and treatment has to be tailored accordingly. Rarely does it need surgical intervention for the management.

Abbreviations:

CA-Chylous Ascites; CL- Chyle Leak; MCT- Medium Chain Triglyceride; TPN- Total Parenteral Nutrition; IHBRD- Intra Hepatic Biliary Radical Dilatation;

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