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# Reconstruction of the extrahepatic portal vein after pancreatic trauma – Report of two cases

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ABSTRACT

Obstruction of the extrahepatic portal vein blocks the outflow through the superior mesenteric (SMV), splenic (SV), and coronary veins (CV) and causes portal hypertension of the prehepatic type.

We present two case reports of patients who developed SMV obstruction after pancreatic trauma treated by reconstruction of the extrahepatic portal vein with an autologous venous graft between the SMV and portal veins.

Restoration of normal hepatopedal flow was achieved in these two cases by replacing the thrombosed segments of the retropancreatic superior mesenteric vein following pancreatic trauma.



Obstruction of the extrahepatic portal vein blocks the outflow through the superior mesenteric (SMV), splenic (SV), and coronary veins (CV) and causes portal hypertension of the prehepatic type. It may be congenital or acquired and is usually complicated by recurrent hemorrhage and development of splenomegaly and hypersplenism [1–4]. We present two case reports of patients who developed SMV obstruction after pancreatic trauma treated by reconstruction of the extrahepatic portal vein with an autologous venous graft between the SMV and portal veins.

## 1. Case report

A 2-year-old boy was transferred to Miami Children's Hospital in respiratory distress and found to have complete opacification of the left hemithorax with pleural fluid (Fig. 1). Tube thoracostomy drainage yielded 500 cc of brown liquid with an amylase content of 7655 IU/L indicating a pancreatico-pleural fistula. Serum amylase was 255 IU/L. There was no clear history of abdominal trauma. However the boy was in a difficult foster care situation. The child was treated with total parenteral nutrition and bowel rest. Abdominal computerized tomography (CT) and magnetic resonance cholangiopancreatography (MRCP) indicated an injury in the posterior mid-body of the pancreas with a fistula from the retroperitoneum into the mediastinum and left hemithorax (Fig. 2). There were no intraabdominal fluid collections. The splenic vein was thrombosed and there were multiple varices along the gastric fundus and antrum (Figs. 3 and 4). The mediastinal collection persisted despite multiple percutaneous drain insertions. An exploratory laparotomy was performed three months after presentation for tube drainage of the retroperitoneal pancreatico-mediastinal collections. The child remained hospital bound because he developed recurrent hyperamylasemia and pancreatico-pleural collections that were refractory to multiple attempts at drainage (Fig. 5). The child was vaccinated for a possible splenectomy and reexplored seven months after the initial presentation. At that time he underwent a distal pancreatectomy and splenectomy. The retropancreatic superior mesenteric vein as well as the distal segment of the extrahepatic portal vein were exposed and found thrombosed and fibrotic. The thrombosis was associated with diffuse peripancreatic and gastric varices. Reconstruction of the thrombosed SMV was performed with an autologous venous graft consisted of the right common iliac vein (Fig. 6). The latter was interposed between the patent segments of the superior mesenteric and portal vein. The venous graft remains patent; all signs of portal hypertension have disappeared and the child tolerates a regular diet. He is being maintained on penicillin and pancreatic enzymes replacement.

A 27 years old male patient was transferred for recurrent upper gastrointestinal (GI) bleeding. The patient had a history of motor vehicle accident where he suffered multiple abdominal traumas, which necessitated a pancreatojejunostomy and a transverse colostomy. Five months after surgery, he underwent closure of the colostomy. Over the course of the following 18 months his course

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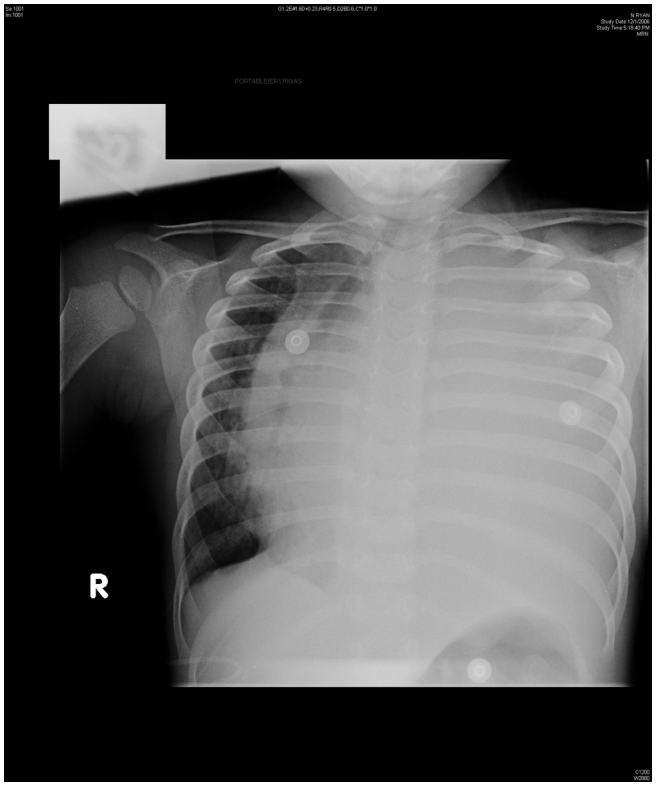


**Fig. 1.** Chest X-ray at presentation.

was complicated by multiple episodes of GI bleeding. Angiography revealed a patent SMV and extrahepatic portal vein, but thrombosed splenic and a retropancreatic SMV. The patient underwent multiple attempts to control the bleeding with endoscopic and radiologic vascular interventions, which failed.

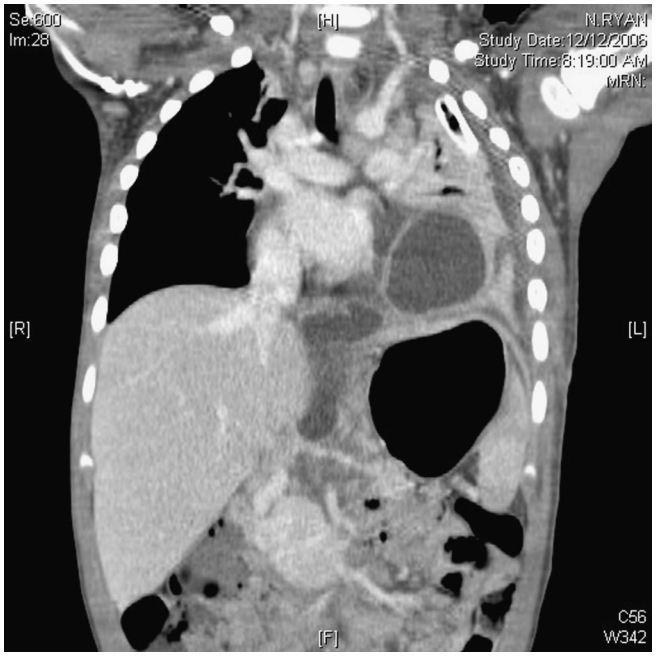


**Fig. 2.** Abdominal computerized tomography (CT) indicating an injury in the posterior mid-body of the pancreas with a fistula from the retroperitoneum into the mediastinum and left hemithorax.

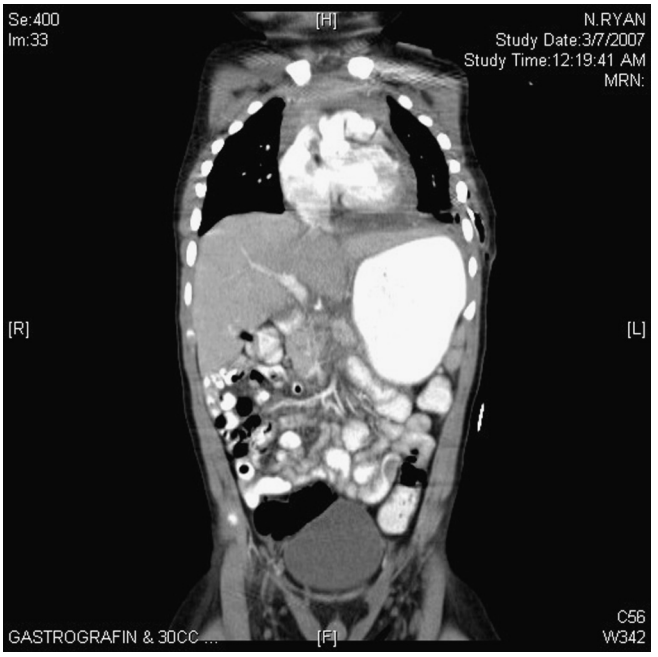


**Fig. 3.** Abdominal computerized tomography (CT) indicating superior mesenteric vein (SMV) occlusion.

Consequently he was explored. The SMV and portal veins were exposed by a Kocher maneuver avoiding the previous pancreaticojejunostomy. The thrombosed segment of the portal vein was replaced with an interposition graft between the patent stumps of the SMV and portal veins. The patient's left internal jugular vein was used as an autologous vein graft. A splenectomy was performed at the same time. The graft remained patent with normal flow postoperatively and the patient remains asymptomatic nine years later.

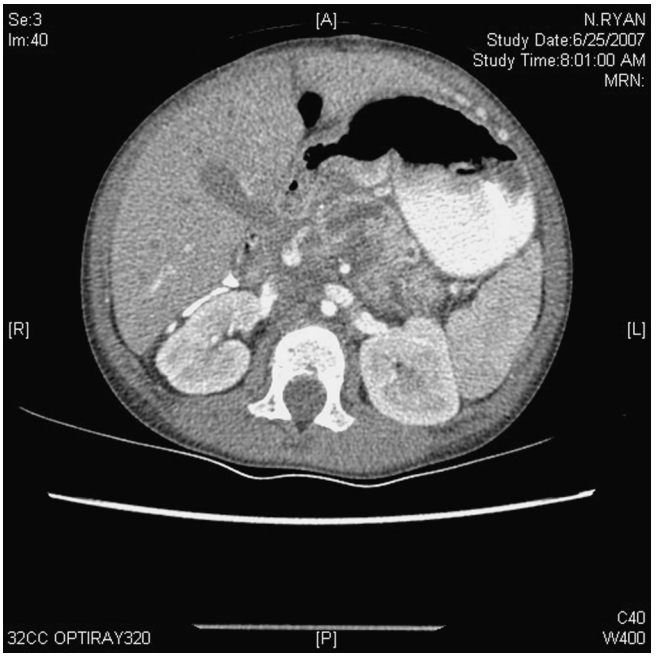


**Fig. 4.** Abdominal computerized tomography (CT) indicating multiple varices along the fundus and antrum of the stomach.