Hiatal herniation of the pancreas: Diagnosis and surgical management

Pankaj Saxena, MCh, DNB,a Igor E. Konstantinov, MD, PhD,a Miriam D. Koniuszko, MBBS,a Soumya Ghosh, MBBS, PhD,a Vincent H. S. Low, MBBS, FRANZCR,b and Mark A. J. Newman, MD, FRACS,a Nedlands, Western Australia, Australia

Herniation of the pancreas through a gastroesophageal hiatus is an extremely rare condition, and only a few cases have been reported in the world literature. We describe the case of a patient with complete herniation of the pancreas and discuss surgical management of this rare condition.

Clinical Summary
A 78-year-old woman was admitted with mild shortness of breath and a history of intermittent episodes of upper abdominal pain and indigestion. She had a long history of diverticulitis and had undergone a cholecystectomy in the remote past. Chest radiography demonstrated a large hiatal hernia (Figure 1). Computed tomographic scans did not show an intra-abdominal pancreas and suggested complete pancreatic herniation (Figure 2).

The patient underwent surgical repair of the hernia through a right posterolateral muscle-sparing thoracotomy. Intrathoracic adhesions were divided. Wedge resection of the contralateral pulmonary (left) lower lobe adherent to the hernial sac was required. The pancreas was found as a content of the hernial sac. There was no evidence of any inflammatory or malignant changes in the pancreas. The contents of the hernial sac were reduced through the esophageal hiatus. The esophagogastric junction was reduced below the diaphragm and was fixed to the esophageal hiatus of diaphragm in standard fashion. The patient had an uneventful recovery and was discharged home on day 11. She remains symptom free at 6 months after the operation.

Discussion
Hiatal hernia has been found in as many as 20% of patients undergoing upper gastrointestinal endoscopy.1 In contrast, herniation of the pancreas through the gastroesophageal hiatus is a rare phenomenon. These patients may remain symptom free or may...
eventually show signs of acute pancreatitis.\(^3\) On rare occasions, pancreatic tissues found in the hiatal hernia may undergo malignant transformation.\(^4\) Acute pancreatitis in these patients may be idiopathic or result from volvulus formation within the hernia.\(^5\) It is likely that multiple subclinical episodes of pancreatitis in the case described here led to adhesion of the pancreas to the posterior aspect of stomach and the adjoining areas of upper gastrointestinal tract. Thereafter, the pancreas ascended through the esophageal hiatus as a content of the hiatal hernia.

Complete herniation of the pancreas through the gastroesophageal hiatus is rare.Computed tomographic scan is effective for definitive diagnosis in this unusual condition. We believe that surgical repair of hiatal herniation of the pancreas is indicated even in symptom-free patients to prevent potential complications.

**Duopleural fistula as a consequence of Gorham-Stout syndrome: A combination of 2 rare conditions**

Ritwick Agrawal, MD, Imran Mohammed, MD, and Patrick G. Reilly, MD

Pittsburgh, Pa

Duopleural fistula (DPF) is an abnormal communication between the pleural and dural spaces caused by trauma, spinal surgery, or tumors. In our case it is caused by Gorham-Stout syndrome (GSS), a rare bone disease characterized by painless massive osteolysis caused by proliferation of lymphangiomatous tissue. The spinal form of GSS is associated with kyphosis, kyphoscoliosis, subluxation, and dislocation. DPF has never been previously described in association with GSS.

**Clinical Summary**

A 25-year-old woman with a history of Chiari I malformation was admitted with 2 days’ duration of low-grade fever, fatigue, and dysphagia. Over the past year, she had undergone multiple subocciplial craniotomies. Emergency magnetic resonance imaging of the brain did not show any change in size or dimension of the fourth ventricle. Physical examination was unremarkable except for dullness to percussion and rhonchi in the left lower lung fields. Chest radiography revealed a left lower lobe infiltrate and moderate left-sided pleural effusion. She was treated empirically with intravenous piperacillin/tazobactam for aspiration pneumonia.

Two days later, she experienced respiratory failure, necessitating intubation and ventilator support. A computed tomographic scan of the chest showed destruction of the left posterior T7 vertebral body and left-sided ribs, 5th through 9th, which was suspicious of a malignant process. Pleural fluid analysis was bloody in appearance, with a lactate dehydrogenase level of 211 IU/L, a pleural/serum lactate dehydrogenase ratio of 0.88, a pleural/serum protein ratio of 0.57, a white cell count of 5900/\mu L (mononuclear cells, 57%; lymphocytes, 34%), a glucose level of 103 mg/dL, and an exudative pleural effusion. Thoracic myelography revealed an extravasation of contrast media, confirming a diagnosis of DPF centered at T7 and destructive lesions from the T6 through T8 vertebrae (Figure 1, A).

The patient underwent T6 through T8 laminectomy with duroplasty and DPF repair with a collagen matrix patch. Histopathologically, the T7 lytic lesion showed an irregular angiomatous proliferation in bone trabeculae and reactive bone formation, along with massive osteolysis, which is diagnostic of GSS (Figure 2). She was treated with intravenous vitamin D, followed by 50,000 IU of oral vitamin D weekly. Six-week follow-up thoracic myelography did not show any evidence of DPF (Figure 1, B).

**Discussion**

To our knowledge, we are reporting the first case of DPF caused by GSS. It is a consequence of blunt or penetrating trauma to the spine, complication of neurosurgical procedures, or tumors.\(^1\) Pres-

References