

Asymptomatic Transhiatal Pancreatic Herniation after Oesophagectomy

NIKHIL AGRAWAL¹, SUJOY PAL², NIHAR RANJAN DASH³,
KS MADHUSUDHAN⁴, DEEP NARAYAN SRIVASTAVA⁵

ABSTRACT

Transhiatal herniation of abdominal organs after oesophageal resection and reconstruction is rare and sparsely described in the literature. The commonest organ to herniate is the colon. Pancreatic herniation has been reported twice before. We report a case of postoesophagectomy transhiatal pancreatic herniation in an asymptomatic patient.

Keywords: Carcinoma oesophagus, Complication, Hernia, Oesophagectomy, Pancreas

CASE REPORT

A-32-year-old man presented to Department of Gastrointestinal Surgery at the All India Institute of Medical Sciences, New Delhi, India with progressive dysphagia for one year. He had been diagnosed to have squamous cell carcinoma of the oesophagus elsewhere and treated with paclitaxel, cisplatin and 5-fluorouracil based chemotherapy along with 60 Gy of external beam radiotherapy in 30 fractions, six months ago. His physical examination revealed no abnormality. On endoscopy he had a stricture, 25 cm from the incisors and the endoscope could not be negotiated beyond it. A biopsy from the stricture showed a squamous cell carcinoma. The CT scan showed wall thickening of the mid and lower thoracic oesophagus. The lesion was resectable on CT scan and there were no metastases on CT and PET scan. The patient underwent a right anterolateral transthoracic oesophagectomy with gastric pull up and cervical oesophagogastric anastomosis with standard two-field lymphadenectomy. The postoperative course was uneventful. In a routine follow up CT scan at 2.5 year the patient was noted to have transhiatal pancreatic herniation [Table/Fig-1A, B]. As he was asymptomatic, no intervention is being planned.

DISCUSSION

One of the rare complications of oesophageal resection and reconstruction is transhiatal herniation of abdominal organs into the thoracic cavity. There are a few reports in the literature describing this complication [1-4].

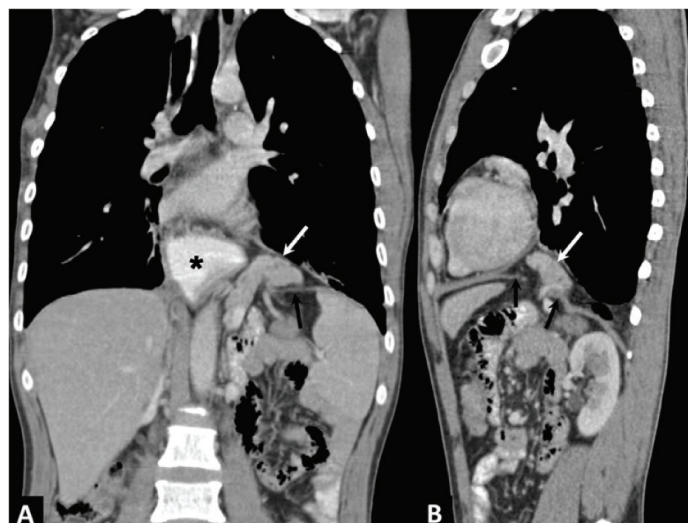
The incidence of postoesophagectomy hiatal herniation varies from 0.69% to 26%, with no difference between herniation following the Ivor Lewis and Orringer approach (0.92% versus 0.83%) [2-5]. However, the incidence was very high following minimal invasive oesophagectomy compared to the open transthoracic Ivor Lewis McKeown oesophagectomy (26% versus none; $p=0.01$) [5]. Another series also found diaphragmatic herniation to be more common after minimal invasive compared to the open oesophagectomy (2.8% versus 0.8%) [1]. Extended incision and partial resection of the diaphragm has also been found to be associated with an increased risk of transhiatal herniation [3]. The commonly reported symptoms include respiratory distress, intestinal obstruction and pain. Diagnosis is usually made on a chest X-ray or a CT scan. The colon is the most common organ that herniates. Other organs that have been reported to herniate include the small bowel, omentum and spleen. Most herniations occur to the left of the conduit [1,2].

Pancreatic herniation after oesophagectomy has been described only twice. One case series of 24 postoesophagectomy herniations

mentioned a patient of herniated pancreas and retroperitoneal fat. He was asymptomatic and did not undergo operative repair [1]. Another case report described a 57-year-old man who, too, was asymptomatic and herniation was detected on CT scan done eight months after the surgery. No intervention was done and the patient died of brain metastasis 10 months after the surgery [6].

All efforts need to be made to prevent occurrence of transhiatal herniation of abdominal organs. Strategies such as anterior incision in the diaphragm rather than a lateral one, routine narrowing of the hiatus and suturing the edges of the diaphragm to the conduit have been advocated [3,5,7]. However, the benefit of any such maneuver has to be balanced against narrowing of the conduit and impairing its blood supply.

Once detected, the herniation can be corrected surgically or managed expectantly. Some authors have recommended routine surgical correction of all postoesophagectomy transhiatal herniations. We surgically reduce all early transhiatal herniations, but for delayed herniations surgical repair is done only if the patient is symptomatic. Both open and minimally invasive approaches to surgical correction have been described. Mesh reinforcement of a repair has also been done. In one of the series perioperative complications occurred in 27% including a death (4.5%). Recurrence rate after operative repair is high (upto 30%) [1,2].



[Table/Fig-1]: Coronal (A) and sagittal (B) reconstructed contrast enhanced CT images showing a defect in the diaphragm with free margins (black arrows) and herniation of the pancreas through the defect into the mediastinum (white arrow). Note the pulled-up stomach filled with oral contrast (*)

Transhiatal pancreatic herniation has also been described along with spontaneous hiatal hernia. They can be asymptomatic, present with acute pancreatitis or pain abdomen and shortness of breath [8]. Some authors have advocated surgical correction in all such cases to prevent potential complications.

CONCLUSION

Transhiatal herniation of pancreas after oesophagectomy is very rare. Its presentation is non-specific and asymptomatic patients can be treated expectantly.

REFERENCES

- [1] Kent MS, Luketich JD, Tsai W, Churilla P, Federle M, Landreneau R, et al. Revisional surgery after esophagectomy: an analysis of 43 patients. *Ann Thorac Surg.* 2008;86:975-83. discussion 67-74.
- [2] Price TN, Allen MS, Nichols FC, 3rd, Cassivi SD, Wigle DA, Shen KR, et al. Hiatal hernia after esophagectomy: analysis of 2,182 esophagectomies from a single institution. *Ann Thorac Surg.* 2011;92:2041-45.
- [3] van Sandick JW, Kneijens JL, van Lanschot JJ, Obertop H. Diaphragmatic herniation following oesophagectomy. *Br J Surg.* 1999;86:109-12.
- [4] Vallbohmer D, Holscher AH, Herbold T, Gutschow C, Schroder W. Diaphragmatic hernia after conventional or laparoscopic-assisted transthoracic esophagectomy. *Ann Thorac Surg.* 2007;84:1847-52.
- [5] Willer BL, Worrell SG, Fitzgibbons RJ, Mittal SK. Incidence of diaphragmatic hernias following minimally invasive versus open transthoracic Ivor Lewis McKeown esophagectomy. *Hernia.* 2012;16:185-90.
- [6] Ahmed S, Fontaine JP, Ng T. Pancreatic herniation after transhiatal esophagectomy. *Ann Thorac Surg.* 2010;89:308-09.
- [7] Reich H, Lo AY, Harvey JC. Diaphragmatic hernia following transhiatal esophagectomy. *Scand J Thorac Cardiovasc Surg.* 1996;30:101-03.
- [8] Katz M, Atar E, Herskovitz P. Asymptomatic diaphragmatic hiatal herniation of the pancreas. *J Comput Assist Tomogr.* 2002;26:524-25.

PARTICULARS OF CONTRIBUTORS:

1. Assistant Professor, Department of HPB Surgery, Institute of Liver and Biliary Sciences, D1, Vasant Kunj, New Delhi, India.
2. Additional Professor, Department of Gastrointestinal Surgery, All India Institute of Medical Sciences, New Delhi, India.
3. Additional Professor, Department of Gastrointestinal Surgery, All India Institute of Medical Sciences, New Delhi, India.
4. Assistant Professor, Department of Radiodiagnosis, All India Institute of Medical Sciences, New Delhi, India.
5. Professor, Department of Radiodiagnosis, All India Institute of Medical Sciences, New Delhi, India.

NAME, ADDRESS, E-MAIL ID OF THE CORRESPONDING AUTHOR:

Dr. Nikhil Agrawal,
Assistant Professor, Department of HPB Surgery, Institute of Liver and Biliary Sciences,
D1, Vasant Kunj, New Delhi, India.
Phone : 9540946808, E-mail : drnkhl@gmail.com

FINANCIAL OR OTHER COMPETING INTERESTS: None.

Date of Submission: **May 06, 2014**

Date of Peer Review: **Jun 07, 2014**

Date of Acceptance: **Jun 10, 2014**

Date of Publishing: **Oct 20, 2014**