Bochdalek diaphragmatic hernia masquerading as tension hydropneumothorax in an adult

Sanjay K. Somani, MD, DM,[a] Puneet Gupta, MS, DNB, FNB,[b] Shekhar Tandon, MS, MCh,[c] Devendra Sonkar, MD,[d] Shirish Bhatnagar, MD, DNB,[a] and Manish Saxena, MD,[d] Lucknow, India

CLINICAL SUMMARY

A 25-year-old man presented with upper abdominal pain and respiratory distress lasting for 4 days. On initial evaluation, he was having mild tenderness in the epigastrium and reduced air entry on the left side of the chest. A succussion splash was heard on the left side of chest. A chest x-ray showed tension hydropneumothorax on the left side (Figure 1). In view of respiratory distress, an intercostal drain was inserted on the left side of the chest. The chest tube did not drain pleural fluid. The next day, a 64-slice computed tomography scan of the chest was done that showed a Bochdalek hernia with the stomach, colon, and left lobe of the liver in the thorax. The patient underwent operation, and at laparotomy the Bochdalek hernia was seen on the left side of the diaphragm posteriorly. The stomach, splenic flexure of colon, and left lobe of the liver were seen passing through the hernia into the thorax. The stomach had ischemic changes that reverted back to normal on reperfusion and application of hot packs. The stomach, colon, and liver were reduced, and the hernia was repaired. The patient's condition improved clinically, and the chest x-ray showed a well-expanded left lung. The patient was discharged on the seventh day.

Congenital diaphragmatic hernias result from failure of fusion of the multiple developmental components of the diaphragm. Bochdalek hernias occur posterolaterally at the lumbocostal junctions of the diaphragm. Only a few Bochdalek hernias are first discovered in adulthood.[1] Bochdalek hernias occur on the left side in approximately 80% of cases.[2] In older children and adults, a Bochdalek hernia may manifest as an asymptomatic chest mass. The differential diagnosis includes mediastinal or pulmonary cyst or tumor, pleural effusion, or empyema. Symptoms, when present, are due to herniation of the stomach, omentum, colon, or spleen.

A Bochdalek diaphragmatic hernia that was initially misdiagnosed as pneumonia with massive pleural effusion has been described.[3] A report of a 76-year-old man with a right-sided Bochdalek hernia who was admitted acutely with dyspnea has been described;[4] computed tomography of the abdomen revealed marked elevation of the right hemidiaphragm caused by herniation of the colon. The prevalence of the incidentally diagnosed asymptomatic posterior diaphragmatic hernias in the age groups 50 to 59 years, 60 to 69 years, and 70 to 79 years was 10.5%, 13.7%, and 20.3%, respectively, in a prospective study of chest computed tomography.[5]

CONCLUSIONS

Laparoscopic and thoracoscopic repair of the Bochdalek hernia have been described.[6,7] There were no statistically significant differences in complications, additional related operative procedures, use of prosthetic patch, recurrence, length of stay, or postoperative mortality between the thoracoscopic repair and open repair groups.[7]

References

1. Guttman FM, Laberge J-M. Congenital diaphragmatic hernia. In: Nyhus LM, Condon RE, eds. *Hernia*. Philadelphia: Lippincott; 1989:694.
2. Langer JC. Congenital diaphragmatic hernia. *Chest Surg Clin North Am*. 1998;8:295.
3. Chiu CC, Yeh HF, Chiu TF. Bochdalek diaphragmatic hernia masquerading as pneumonia—a rare cause of non-traumatic hemothorax. *Am J Emerg Med*. 2009;27:252. e1-2.
4. Kavanagh DO, Ryan RS, Waldron R. Acute dyspnoea due to an incarcerated right-sided Bochdalek's hernia. *Acta Chir Belg*. 2008;108:604-6.
5. Kinoshita F, Ishiyama M, Honda S, Matsuzako M, Oikado K, Kinoshita T, et al. Late-presenting posterior transdiaphragmatic (Bochdalek) hernia in adults: prevalence and MDCT characteristics. *J Thorac Imaging*. 2009;24:17-22.
6. Palanivelu C, Rangarajan M, Rajapandian S, Amar V, Parthasarathi R. Laparoscopic repair of adult diaphragmatic hernias and eventration with primary sutured closure and prosthetic reinforcement: a retrospective study. *Surg Endosc*. 2009;23:978-85. Epub 2009 Mar 14.
7. Cho SD, Krishnaswami S, Mckee JC, Zallen G, Silen ML, Bliss DW. Analysis of 29 consecutive thoracoscopic repairs of congenital diaphragmatic hernia in neonates compared to historical controls. *J Pediatr Surg*. 2009;44:80-6.

From the Department of Gastroenterology,[a] Minimal Access Surgery,[b] Cardiothoracic Surgery,[c] and Radiology,[d] Sahara Hospital, Lucknow, India.

Received for publication Nov 19, 2009; accepted for publication Nov 26, 2009.

Address for reprints: Sanjay K. Somani, MD, DM, Department of Gastroenterology, Sahara Hospital, Viraj Khand, Lucknow-226010, UP, India (E-mail: sanjayksomani@rediffmail.com).

J Thorac Cardiovasc Surg 2010;■:1-2
0022-5223/$36.00

Copyright © 2010 by The American Association for Thoracic Surgery

doi:10.1016/j.jtcvs.2009.11.062

ARTICLE IN PRESS

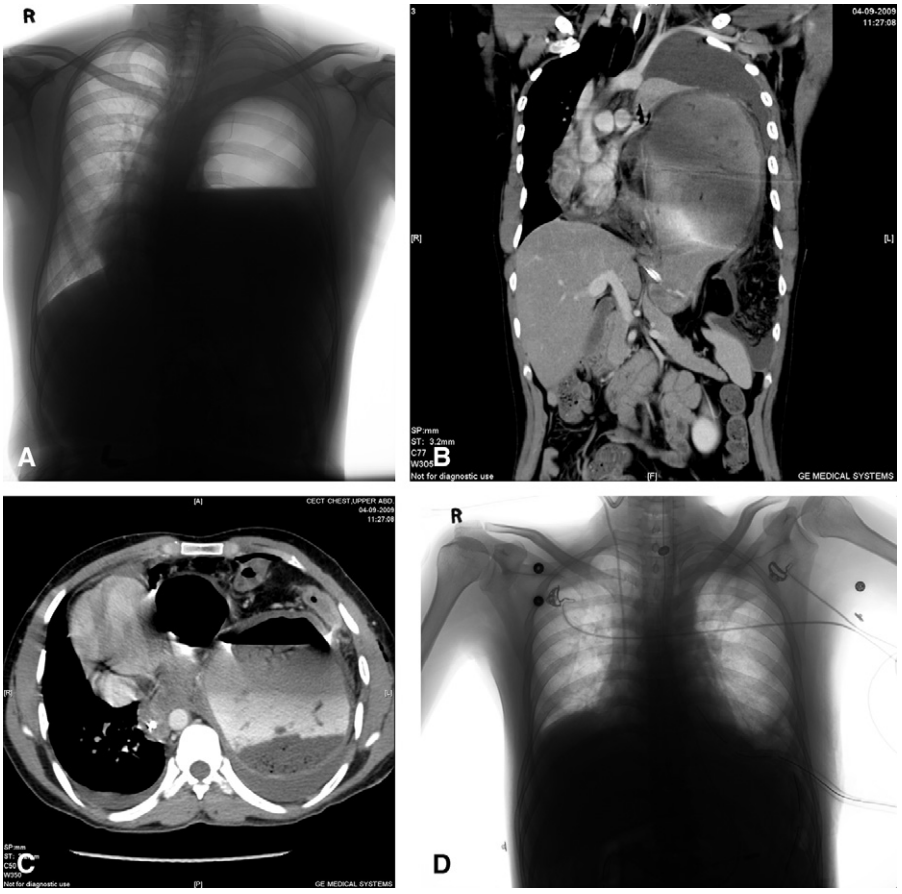

FIGURE 1. A, Chest x-ray showing the picture mimicking tension hydropneumothorax. B, C, 64-slice computed tomography scan of the chest and upper abdomen showing the herniation of the stomach and left lobe of the liver. D, Chest x-ray after surgery showing normal position of stomach and expanded left lung.