Postoperative Right Diaphragmatic Hernia with Enterothorax in Live Liver Donors

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The incidence of liver disease requiring intensive medical treatment and liver transplant continues to rise. With this increased need for donor livers comes the development of live liver donors. The right lobe is frequently used in our area for donation.

Xiaofeng and associates have reviewed the occurrence of complications in their patients and presented their results in 181 donors.[1] Seventy-three complications were outlined with only 1 diaphragmatic complication—an eventration. In the same issue, a report by Aktas and associates of a diaphragmatic hernia with enterothorax and acute appendicitis in a pediatric liver transplant recipient, was presented.[2]

Diaphragmatic rupture with herniation and enterothorax is uncommon in live donors and recipients. A review of the literature demonstrates only 1 right diaphragmatic hernia developing in live right-lobe liver donors.[3] Recently, we have had 2 adults present to our emergency department with abdominal and thoracic symptoms after a live donation of the right lobe of the liver. Both patients were symptomatic, but the cause was unknown. Both patients developed progressive symptoms requiring evaluation and diagnostic radiographs.

A right enterothorax was diagnosed. And at a right thoracotomy, both patients had a 7-cm rupture on the dome of the diaphragm, with incarceration and pregangrenous changes of the enterothoracic bowel. After lysis of adhesions and reduction of the herniated gastrointestinal tissues, a Prolene mesh patch was sutured onto the undersurface of the diaphragm. The defect in the diaphragm was closed with nonabsorbable suture. The cause of the defect (not present preoperatively) was undetermined; however, today the patients are doing well.

In the future, with the increase in live liver donors and with the severity of illness of the recipients, we will see diaphragmatic complications, especially herniation of the right diaphragm, increase infrequency. Increased symptoms warrant more-intense examination and recognition, especially in the months or years after donation.

References

1. Xiaofeng OY, Dayangac M, Demirbas BT, Tabendeh B, Yuzer Y, Tokat Y. Analysis of right lobe living-liver donor complications: a single center experience. *Exp Clin Transplant*. 2011;9(1):56-59.
2. Aktas S, Sevmis S, Karakayali H, et al. Acute appendicitis after diaphragmatic hernia after pediatric liver transplant. *Exp Clin Transplant*. 2011;9(1):63-67.
3. Hawxby AM, Mason DP, Klein AS. Diaphragmatic hernia after right donor hepatectomy: a rare donor complication of partial hepatectomy for transplantation. *Hepatobiliary Pancreat Dis Int.* 2006;5(3):459-461.

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