CASE REPORT – OPEN ACCESS

International Journal of Surgery Case Reports 35 (2017) 63–67

Contents lists available at ScienceDirect

International Journal of Surgery Case Reports

journal homepage: www.casereports.com

Congenital unilateral diaphragmatic eventration in an adult: A rare case presentation

Johann Paulo S. Guzman (MD)*, Nilo C. Delos Santos (MD), Edgar A. Baltazar (MD), Allan Troy D. Baquir (MD)

Department of Surgery, 4th Floor, East Avenue Medical Center, East Avenue, Diliman, Quezon City, Philippines

ARTICLE INFO

Article history:
Received 7 March 2017
Received in revised form 16 April 2017
Accepted 16 April 2017
Available online 18 April 2017

Keywords:
Diaphragmatic plication
Diaphragmatic exenteration
Atelectasis

ABSTRACT

We present a rare case of 32 year old female with congenital diaphragmatic eventeration female presenting in an adult. She had symptoms of intermittent dyspnea and occasional epigastric discomfort. Patient had no previous history of trauma. Physical examination showed bowel sound involving the left hemithorax. Imaging modalities confirmed the diagnosis of a congenital left diaphragmatic eventeration. Patient underwent plication of the diaphragm using the abdominal approach. Intra-operatively, the left diaphragm was attenuated. Plication was done with 1st layer of imbricating silk heavy sutures buttressed by a second layer of interrupted absorbable sutures. She post-operatively had atelectasis on the left lung. Incentive spirometry and deep breathing exercises were started with resolution of the atelectasis after 1 week post-operatively. Patient had an unremarkable post-operative stay with resolution of symptoms. There are reports that diaphragmatic eventration diagnosed even as late 70 years old, highlighting the dogma that this is an asymptomatic disorder does not need all the time surgical therapy. But we still recommend surgical therapy as soon as diagnosis is confirmed. In this patient, there was no recurrence of symptoms after a follow-up of 2 years. Whether surgery indeed improved lung functions in these vastly asymptomatic patients, these questions could be an active area of research in the long term outcomes of these patients.

1. Introduction

Diaphragmatic eventration is largely diagnosed in the pediatric age group. The difference between eventration and hernia was recorded by Bisgard in 1947, who describes eventration as an abnormally high, or elevated position of one leaf of the diaphragm as a result of paralysis, or atrophy of varying degree of the muscle fibers. Its unbroken continuity differentiates it from diaphragmatic hernia [1].

Diaphragmatic eventration is a congenital developmental defect of the muscular portion of the diaphragm. It has been attributed to abnormal myoblast migration to the septum transversum and the pleuroperitoneal membrane. Diaphragmatic eventeration is rare (incidence <0.05%), being more common in males. It can be unilateral or bilateral, but it usually involves the left hemidiaphragm [2]. Macroscopically, the affected diaphragm is attenuated, abundant, and membranous without muscular appearance. Microscopically, there is paucity or absence of muscular fibers and diffuse fibro elastic changes. Eventration results in diaphragmatic elevation and cephalad displacement if the underlying abdominal viscera [2,3].

Diaphragmatic plication is a well-established treatment for the condition and several studies have demonstrated it to be a safe procedure with good long term results. Plication can be done through the abdominal or thoracic route [4].

It is rare that congenital diaphragmatic eventration can present among adults. Most adult patients with diaphragmatic eventration remain asymptomatic, and the diagnosis is made incidentally after chest radiography. Among symptomatic patients, the most common symptom is dyspnea. Gastrointestinal symptoms may be present including epigastric discomfort, heartburn, bloating constipation and weight loss. There is indication for surgical intervention only in the presence of symptoms [2,5].

2. Case report

We report a case of a 32 year old female who presented with intermittent dyspnea and occasional mild epigastric discomfort. On physical examination there were decreased breath sounds in the left thorax with note of gurgling bowel sounds. The cardiac examination was unremarkable with regular cardiac rate, rhythm and no murmurs were noted. Chest X-ray showed the presence of bowel loops in the left thorax and the cardiac shadow shifted to the right. (Fig. 1). Impression was diagrammatic hernia versus eventeration. Chest Ct-scan with IV and oral contrast was requested to

* Corresponding author.
E-mail address: yooohannn@yahoo.com (J.P.S. Guzman).

http://dx.doi.org/10.1016/j.ijscr.2017.04.010

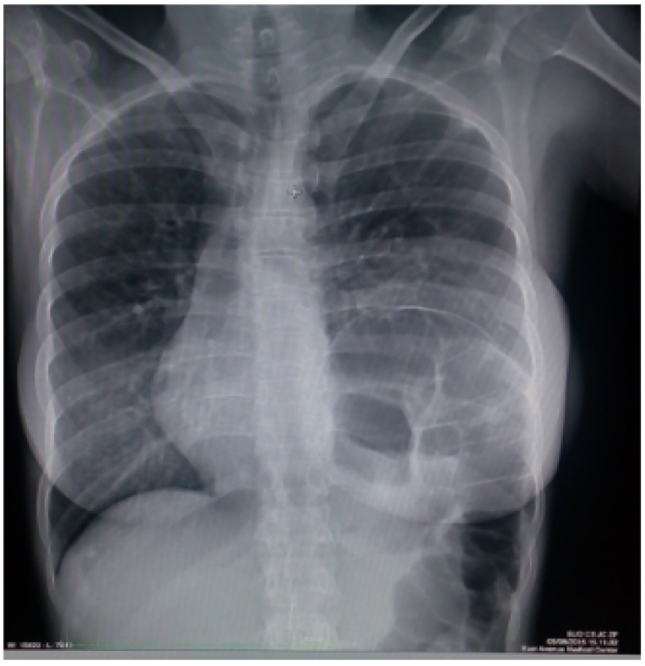

Fig. 1. Chest Xray AP view showing shift of the cardiac shadow to the right with note of bowel loops in the left thorax.

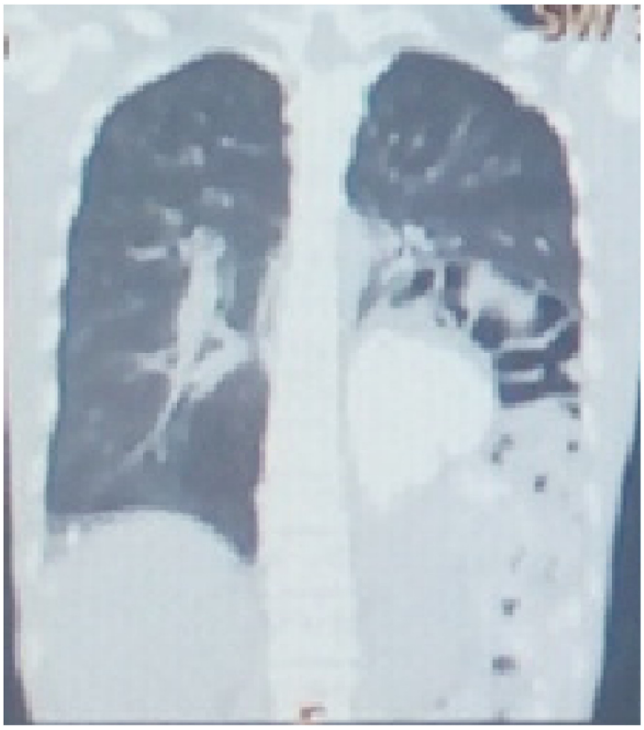

Fig. 2. Coronal view of the Chest CT-scan IV and oral contrast showing gastric and bowel contents in the left hemithorax.

further outline the anatomy. The scan showed bowel loops in the left hemithorax with no masses noted in the chest (Figs. 2 and 3).

A barium swallow was done clearly showing gastric contents located in the left hemithorax and no defects were noted in the left diaphragm. No radiologic evidence of gastric volvulus was noted (Figs. 4 and 5)

The patient underwent plication of the left diaphragm though the abdominal approach. Intra-operatively, the diaphragm was

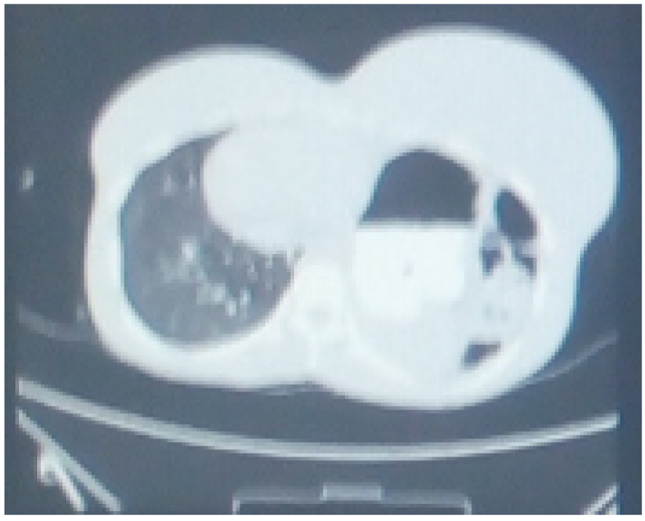

Fig. 3. Axial view of the Chest CT-scan IV and oral contrast showing gastric and bowel contents in the left hemithorax.

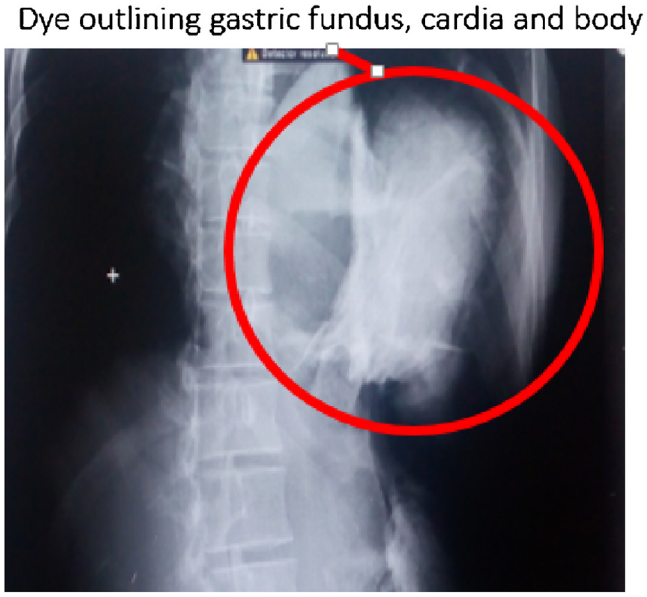

Fig. 4. Barium swallow outlining the gastric fundus, cardia and body which was located in the left hemithorax.

noted to be thinned out with the central portion of the left diaphragm attenuated and membranous (Fig. 6).

Plication was done using 2 layered imbricated vertical mattress sutures. The first layer was composed of heavy non absorbable silk sutures and the 2nd layer was a composed buttress suture of polyglycolic absorbable heavy sutures. (Figs. 7 and 8)

Post-operatively Chest x-ray of the patient showed atelectasis of the left lung. The patient was started on incentive spirometry and deep breathing exercises (Fig. 9). Patient was started of feeding and was discharged 1 week post-operatively with the lungs fully expanded. Patient has an unremarkable post-operative course. (Fig. 10)

After 2 years, patient had followed-up with us and reported no dyspnea, no epigastric pain with full return to activites. Baseline arterial blood gases taken were within normal limits.