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Case report

Right-sided recurring catamenial pneumothorax complicated by a diaphragmatic hernia

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Summary

No diaphragmatic hernia was reported with a catamenial pneumothorax. We report herein a case of right-sided recurring catamenial pneumothorax complicated by a latent diaphragmatic hernia.

Keywords: Catamenial pneumothorax; Diaphragm; Hernia; Surgery

Pneumothorax cataménial droit récidivant compliqué d'une hernie diaphragmatique

Résumé

Le pneumothorax cataménial est une entité rare. A notre connaissance, aucun cas n'a été compliqué d'une hernie diaphragmatique. Nous rapportons un pneumothorax cataménial récurrent dû à des perforations multiples du diaphragme compliqué d'une hernie diaphragmatique.

Mots-clés: Chirurgie; Diaphragme; Hernie; Pneumothorax cataménial

Introduction

Catamenial pneumothorax is a rare entity of spontaneous, recurring pneumothorax in women. Since the first description by Maurer and colleagues in 1958, 229 cases of a unique entity of spontaneous recurring pneumothorax in women have been reported [1,2]. We report herein a case of right-sided recurring catamenial pneumothorax complicated by a latent diaphragmatic hernia.

Observation

We report a healthy 35 year-old nonsmoking woman. She had her first episode of a right sided spontaneous pneumothorax in June 2006 and was treated with chest tube drainage. She was nulliparaous with a normal menstrual pattern and did not use any medication. She presented a persistent air leak despite mobilisation and two chest tube replacement (Figure 1). The computed tomography scan seemed to show a small diaphragmatic hernia (Figure 2). Exploration of endothoracic sides, especially the diaphragm, through a right minithoracotomy was made. We noted a small diaphragmatic hernia surstaining multiple perforations in the tendinous part around the hernia (Figure 3 and 4). The diaphragm hernia was treated by placation (Figure 5). Systematic apical pleurectomy down to the seventh rib with a medical talcum pleurodesis were performed. Postoperative course was uneventful and the patient has been symptom free until February 2007.

Fig. 1: Chest x-ray shows a right-sided small pneumothorax

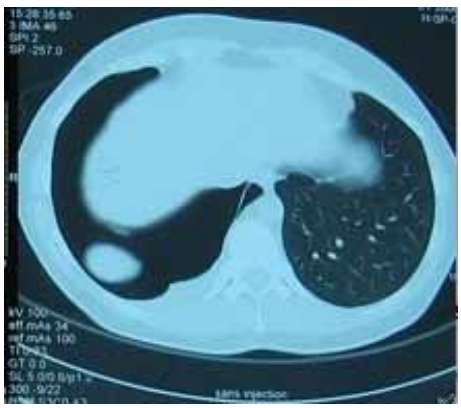

Fig. 2: Computed tomography showing the right pneumothorax and the diaphragmatic hernia

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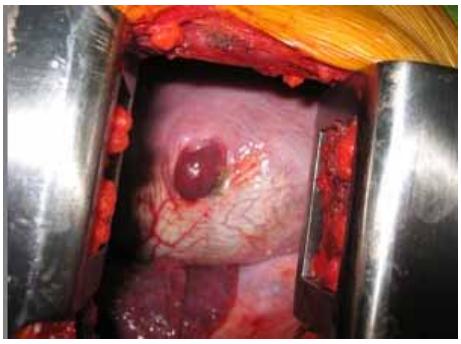

Fig. 3: Peroperative view of the diaphragmatic hernia

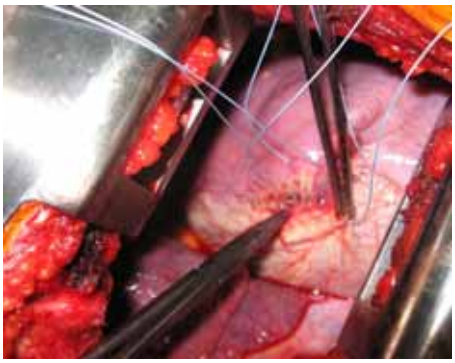

Fig. 4: Multiple small perforations

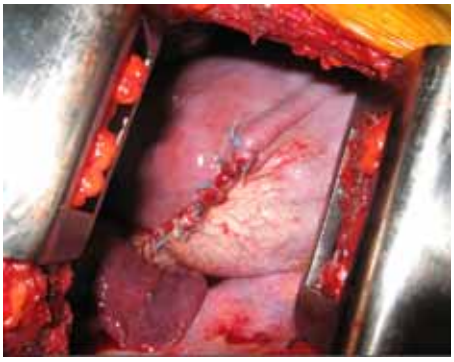

Fig. 5: Diaphragm hernia treated by placation

Comment

Reccurent pneumothorax is a symptom of catamenial pneumothorax which occurs within 48 to 72 hours of the start of menstrual bleeding. In this report, we have focused on the possibility of diaphragmatic hernia complicated by a catamenial pneumothorax. The moment and the role of the surgical treatment remain always debatable. On average 5.1 to 6.0 recurrences occurred before surgical treatment (several reports list more than 30 documented or presumed recurrences before treatment [3,4]. In a recent study on thoracic endometriosis syndrome, 76% of the patients with catamenial pneumothorax (n=80) underwent surgical exploration [5]. We had chosen surgical exploration in front of the sign of diaphragmatic hernia. Our cases, as well as 93% of the previously reported cases, featured right-sided pneumothorax involvement [6]. Kirschner introduced the concept of the porous diaphragm syndrome in 1998, proposing pre-existing diaphragmatic defects allowing gas and fluids to go through this anatomic boundary. The predominance of the right side may be explained by a pistonlike effect of the solid liver bulk, transmitting intraperitoneal pressure spikes across a perforated hemidiaphragm [7] and, we share this physiopathological mechanism. However, porosity is a factor of diaphragmatic fragility where hepatic hernia can be done. No diaphragmatic hernia was reported with a catamenial pneumothorax. Some early study showed that diaphragmatic interventions were done in 38.8% of case [6]. The diaphragm needs to be explored thoroughly, including visceral and parietal pleuraes. We recommend in our institution that all accessible lesions should be excised, and plication is recommended to seal and strengthen the porosity area. In addition, we favour mechanical pleurodesis.

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