Case report - Pulmonary

Spontaneous pulmonary torsion secondary to pseudo-Meigs’ syndrome

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Received 19 August 2004; received in revised form 2 November 2004; accepted 14 December 2004

Abstract

We present a case of pulmonary lobar torsion secondary to pseudo-Meigs syndrome. A 45-year-old woman with colonic cancer and metastatic ovarian cancer was suffering from dyspnea. CT scan showed massive pleural effusion, air trapping and twisted bronchus of the middle lobe. At thoracotomy, the middle lobe was torqued at 180° around its bronchovascular pedicle in a counterclockwise direction. The infarcted middle lobe was resected. The pleural effusion had never recurred after resection of the metastatic ovary. This is the first report of spontaneous pulmonary torsion caused by massive pleural effusion secondary to pseudo-Meigs syndrome.

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Keywords: pulmonary torsion; Pseudo-Meigs syndrome; Pleural effusion; Surgery

1. Introduction

Pulmonary torsion is rare, and we occasionally experience this disease associated with trauma or thoracic surgery. However, spontaneous pulmonary torsion not caused by trauma or surgery is very rare. We present the first report of spontaneous pulmonary torsion secondary to pleural effusion caused by pseudo-Meigs syndrome.

2. Case report

A 45-year-old woman was referred to our hospital for the treatment of type 2 cecum cancer. Chest X-ray demonstrated a small amount of pleural effusion in the right thorax. The abdominal CT scan showed a huge ovarian tumor of 15 cm in diameter. Before an operation for colonic cancer, she developed dyspnea and was admitted to our hospital emergently. Chest CT scan demonstrated right massive pleural effusion, an atelectases of the right upper-lower lobe, infiltration of the middle lobe, and a twisted middle lobe bronchus (Fig. 1). As lung torsion caused by pseudo-Meigs syndrome, pleural effusion caused by metastatic ovarian tumor, was suspected, we performed exploratory thoracotomy based on clinical and radiological findings.

At thoracotomy, the middle lobe was discolored and torqued at 180° around its bronchovascular pedicle in a counterclockwise direction. Although there was a small parenchymal bridge between the upper and middle lobe, the right lower lobe was completely lobulated. We performed middle lobectomy because the torqued lobe was still necrotic and parenchymal damage was considered to be irreversible after detorsion of the middle lobe. The patient recovered uneventfully. Pathological examination of the resected lung revealed hemorrhagic infarction and no malignancy.

The patient underwent a staged operation of colectomy with combined resection of the bilateral ovaries. The right ovarian tumor had been confirmed to be metastatic ovarian...
tumor from colonic cancer by pathological examination. The pleural effusion had never recurred after resection of the metastatic ovary, and the patient was asymptomatic at 15 months after thoracic surgery.

3. Discussion

Pulmonary torsion is rare, and usually occurs following blunt chest trauma or thoracic surgery [1,2]. Although the incidence of lobar torsion after pulmonary resection has been reported to be 0.0086 to 0.3% [3], that of spontaneous pulmonary torsion not caused by trauma or surgery is unknown because there are only sporadic case reports. To our knowledge, only approximately 10 cases of spontaneous pulmonary torsion have been reported in the English literature to date [1,2,4–6].

Spontaneous pulmonary torsion may occur in other pulmonary conditions such as pneumothorax, pleural effusion, lobar atelectasis, congenital pulmonary disease, infection, tumor, or iatrogenesis [1,2]. In this case, the primary cause of pulmonary torsion was massive pulmonary effusion and lobar atelectasis. As pathological examination of the resected ovary revealed metastatic colonic cancer, and the pleural effusion had never recurred after resection of the metastatic ovary, we consider this case to be spontaneous pulmonary torsion secondary to pseudo-Meigs syndrome. In this case, massive pleural effusion, lobar atelectasis, and incomplete fissure between the upper and middle lobes allowed the middle lobe to move easily and enabled torsion (Fig. 2).

Felson has reported some radiographic signs of pulmonary torsion [1]: collapsed or consolidated lobe, hilar displacement, unusual position of the pulmonary vasculature, rapid opacification, change in position of an opacified lobe, bronchial cutoff or distortion, and lobar air trapping. Of these findings, air trapping, infiltration, abnormal position and twisted bronchus of the middle lobe were observed by CT scan in this case. Bronchoscopic examination is also useful to diagnosis the pulmonary torsion [1]. We performed bronchoscopic examination after the tracheal intubation at the emergent operation, and a complete obstruction of the middle lobe bronchus was observed.

Many authors advocate that early diagnosis and prompt intervention are very important because of high mortality if treatment is delayed [1–6]. Although nonoperative detorsion has been reported [1,2], exploratory thoracotomy is usually mandated for definite diagnosis and prompt treatment when in doubt of torsion. Whether the proper procedure for a torqued lung is detorsion or resection depends on the viability of the injured pulmonary parenchyma.

Pseudo-Meigs’ syndrome is also a rare disease. In 1937, Meigs and coworker reported 7 cases with non-malignant ascites and/or pleural effusion in association with a benign ovarian tumor, and resolution of the ascites and pleural effusion after removal of the ovarian lesion [7]. In contrast with Meigs’ syndrome, the same clinical situation caused by lesions other than benign fibromas or fibroma-like ovarian tumors is called pseudo-Meigs’ syndrome [8]. Pseudo-Meigs’ syndrome secondary to gastrointestinal malignancy is very rare, and only 8 cases have been reported in the literature to date [8].

References