Excessive Right Subdiaphragmatic Fat: False Radiologic Pneumoperitoneum

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Excessive fat in the right subdiaphragmatic space may simulate radiological pneumoperitoneum. We report a trauma patient with excessive right subdiaphragmatic fat who was examined with plain chest radiography and abdominal computed tomography (CT). Chest radiography showed a radiolucency separating the liver and right hemidiaphragm. The subphrenic fat pad was substantiated by CT.

(Trauma Image Proced 2016(1):10-11)

Key Words: Diaphragm; Abdominal Fat; Pneumoperitoneum

CASE

A 46-year-old man was admitted to the emergency department with an injury from falling from a 3-m height. The patient presented with transient hypotension and alert mentality. The physical examination revealed multiple head injuries in addition to multiple rib fractures with scanty amount of hemothorax. He underwent an emergency craniectomy for his increasing epidural hemorrhage and compound depressed skull fracture. Supine chest radiography showed a radiolucency separating the liver and right hemidiaphragm (Fig. 1.), which might be mistaken for a pneumoperitoneum. Physical examination revealed a soft abdomen and no peritoneal irritation sign. Focused assessment with sonography for trauma showed no intraabdominal fluid collection. Abdominal computed tomography (CT) demonstrated no evidence of intraabdominal organ injury, and the right subdiaphragmatic lesion on chest radiography corresponded to an

Fig. 1. Supine chest radiography shows a radiolucent lesion separating the liver and right hemidiaphragm (white arrows).

gmatic lesion on chest radiography corresponded to an excessive fat pad (Fig. 2.).

Received: April 24, 2016 Revised: May 3, 2016 Accepted: June 12, 2016

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Fig. 2. Abdominal computed tomography shows an intraperitoneal fat pad localized between the diaphragm and liver. (A) Axial view (B) coronal view.

DISCUSSION

The term pseudopneumoperitoneum was used by Moknohisky for the appearance of subphrenic air due to a fat pad or an irregular leaf of the diaphragm (1). Furthermore, pathological processes such as Chilaiditi syndrome, curvilinear pulmonary collapse, ascites, subphrenic abscess, and subpulmonary pneumothorax can cause pseudopneumoperitoneum (1, 2). Subphrenic fat can be mistaken for intraperitoneal air even in normal patients, especially on chest radiography (1, 2). CT is the best imaging modality for discriminating this state. The right subdiaphragmatic fat pad might be arising from the greater omentum or abnormal fat deposition resulting from corticosteroid use (1-3).

CONFLICT OF INTEREST

No potential conflict of interest relevant to this article was reported.

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