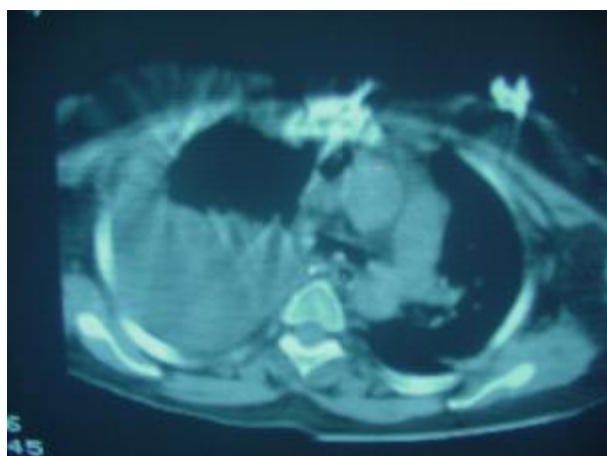
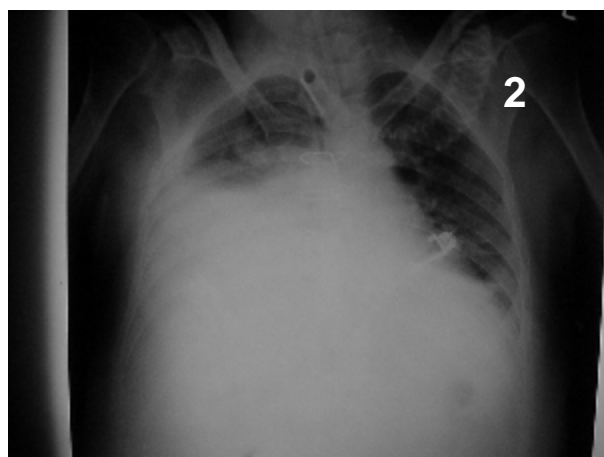
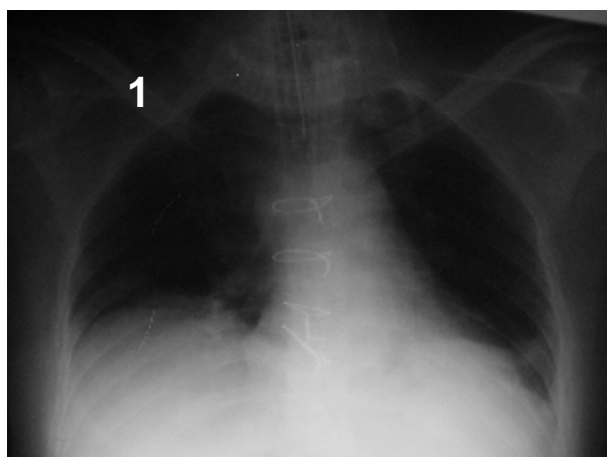


PHOTOCLINIC

A 38-year-old woman, a known case of myasthenia gravis, was admitted to our hospital's intensive care unit (ICU) due to frequent exacerbations of her illness. She was receiving prednisolone, azathioprine, mestinone, cyclosporine, and intravenous immunoglobulin treatment. Thymectomy had been performed one year prior to this admission. The patient was successfully weaned from the ventilator after prolonged support and hyperalimentation via a subclavian catheter, but episodes of tachypnea and tachycardia persuaded physicians to provide her with intermittent airway support through a tracheostomy tube. On chest examination, there was a decrease in breath sounds with an increase in dullness, especially on the right side.

Chest X-ray and computed tomography (CT) showed increasing pleural effusion in the right hemithorax (Images 1, 2 and 3). Analysis of the milky fluid aspirated at thoracocentesis (image 4) showed a white cell count of 3100, with 85% polymorphonuclear neutrophils and 15% lymphocytes, a glucose concentration of 214 mg/dL, a protein concentration of 2.8 g/dL, an albumin concentration of 0.74 g/dL, a cholesterol concentration of 5 mg/dL, a triglyceride concentration of 1500 mg/dL, and a low-density lipoprotein cholesterol level of 99 IU/L.

Your Diagnosis?

See next page for diagnosis

Photoclinic Diagnosis: Chyliform Effusion Due to Inadvertent Insertion of Subclavian Catheter into Pleural Space

Bilateral and unilateral pleural effusion are quite common in ICU patients, especially after prolonged stay; small amounts of effusion need no further investigation.¹ Routine exploratory thoracentesis in the ICU is not accepted by all physicians, due both to danger or fear of complications in mechanically ventilated patients, and a lack of epidemiologic data regarding the risk-benefit yield of the procedure.² Only one recent study has shown the usefulness of routine exploratory thoracentesis in clinically documented pleural effusions in the ICU.³ In our patient, although respiratory distress was first attributed to myasthenic crisis, the need for further control and increasing pleural fluid necessitated thoracentesis and analysis of the milky fluid that resulted (Image 4). Due to hyperalimentation with a lipid-enriched solution (intralipid), we suspected inadvertent placement of the subclavian catheter or, more probably, delayed perforation into the pleural space. Suction from the subclavian catheter yielded milky fluid, and about 1.5 liter of the fluid was evacuated. The patient's complaint and respiratory distress were eliminated after pleural fluid drainage.

Displacement of percutaneously inserted central vein catheters can cause perforation of a vessel, either at the time of insertion or sometime later as a result of gradual erosion of the vessel wall by the catheter tip.⁴⁻⁷ Depending on the vein involved and also the reason for catheter insertion, the result may be hemothorax, hemo/hydropneumothorax, pneumothorax, massive hydrothorax, or extrapleural hematoma.^{4, 8} These complications may be associated with infection or damage to mediastinal structures.⁹⁻¹¹ In patients receiving hyperalimentation, the infusion of toxic or potentially toxic solutions obviously adds to the hazard. In 15 years, this is our first experience with this complication. In a study of eight patients and literature review, Duntley et al noticed delayed diagnosis and left side predilection for complications.¹² Although good technique and performing cannulation from the

right side may decrease the risk,¹³ this rare and potentially lethal complication should be borne in mind in daily ICU practice.

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