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A crackling handshake

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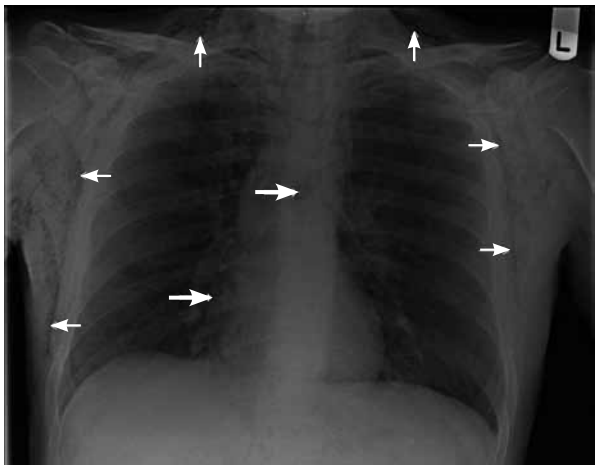
CASE REPORT

A 27-year-old man was admitted with excessive vomiting two days after completing his final regimen of adjuvant chemotherapy (bleomycin, etoposide, cisplatinum) for testicular carcinoma (pT1N2M0, stage IIB). He had been vomiting for several weeks despite antiemetics. A remarkable crepitus was noticed upon shaking the patient's hand. At further physical examination there was crackling of the skin of the entire right arm, chest and neck. The patient did not have any fever. Examination of the heart and lungs was unremarkable. Besides a slight leucocytopenia and thrombocytopenia, laboratory investigation revealed no further abnormalities. *Figure 1* shows the chest X-ray at presentation.

Figure 1. *Chest X-ray: subcutaneous emphysema of the lateral chest wall (small arrows) with signs of pneumomediastinum (large arrows). Also visible are slight paracardial pulmonary interstitial changes*



WHAT IS YOUR DIAGNOSIS?

See page 86 for the answer to this photo quiz

ANSWER TO PHOTO QUIZ (PAGE 83)

A CRACKLING HANDSHAKE

DIAGNOSIS

The air in the mediastinum was initially thought to originate from a rupture of the oesophagus due to ongoing vomiting. Upon gastroscopy oesophagitis grade C was seen but no visible oesophageal rupture. Another explanation for air in the mediastinum can be a rupture of the bronchus, but this was thought to be unlikely. The patient was treated with meropenem and fluconazole as mediastinitis could not be ruled out. He recovered from the subcutaneous emphysema and was discharged from hospital. A few months later the patient complained of progressive dyspnoea. He was admitted to the intensive care unit because of renal and respiratory failure and required mechanical ventilation. Progressive pulmonary interstitial abnormalities with pleural effusion were seen on the CT scan of the chest. Under the probable diagnosis of bleomycin-induced pneumonitis (BIP) with superimposed pulmonary infection, he was treated with high-dose corticosteroids and broad-spectrum antibiotics. Therapy was unsuccessful and the patient died a few days later. Section was not performed. The possibility of bleomycin-induced lung injury as the cause of the subcutaneous emphysema and pneumomediastinum had not been considered at the initial presentation.

The pulmonary toxicity of bleomycin has been recognised for many years and has various forms of presentation. The first fatal case of subcutaneous emphysema and pneumomediastinum as the initial presentation of BIP has recently been described.[1] Bleomycin therapy can cause damage to tissues missing the enzyme bleomycin hydrolase, including the skin and lung.[2] It is thought that free radicals and cytokines cause endothelial damage leading to the pulmonary changes. The prevalence is estimated at 2 to 40% in patients receiving bleomycin. Mortality is approximately 2%. Pneumomediastinum without pneumothorax is extremely rare.[3] Risk factors for developing BIP are poor renal function, age over 40, stage IV disease and cumulative bleomycin doses of more than 300 mg.[4] BIP can develop during therapy, but has also been reported up to six months after discontinuation of bleomycin therapy. Symptoms and findings are non-specific, including dyspnoea and dry cough. Although hard evidence is lacking, numerous case reports suggest that treatment consisting of high-dose prednisolone is favourable.

Symptoms of extensive subcutaneous emphysema in a patient treated with bleomycin can be an early warning for the development of bleomycin toxicity. Awareness of the sequelae is indispensible.

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