Acute Pneumopathy in a Nonsurgical Transsexual*

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A 34-year-old African-American nonsurgical transsexual was admitted to the hospital complaining of dyspnea on exertion which began 2 days after receiving subcutaneous injections of liquid silicone for breast enlargement. She had undergone similar injections every 6 months for the last 3 years and also received estrogen injections every 2 weeks by a noncertified practitioner. No prior complications had occurred. She smoked one pack of cigarettes a day and had been previously healthy.

At the time of physical examination, the patient was afebrile. Rales were heard diffusely in both lungs, but no dullness to percussion was noted. No rubs or wheezes were heard. Cardiac examination disclosed no abnormalities. Breast examination revealed multiple puncture sites at the periphery of the glands, but the skin appeared normal.

A chest radiograph showed diffuse patchy infiltrates (Fig 1). CT scan of the chest showed diffuse infiltrates mostly involving the peripheral lung fields (Fig 2). Ventilation-perfusion lung scan was read as showing a low probability for pulmonary embolism.

Laboratory values were as follows: WBC count, 9,600/mm³; hemoglobin, 12.3 g/dL; lactate dehydrogenase, 626 IU/L (normal, 313 to 618 IU/L); arterial blood gas (patient breathing room air) showed Po₂, 54 mm Hg; Pco₂, 33 mm Hg; pH, 7.45. The CD4 count was 143/mm³ and HIV antibodies were positive.

What is the diagnosis?

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Diagnosis: Silicone emboli to the lung

Fiberoptic bronchoscopy showed normal bronchial mucosa. Specimens obtained from the BAL were negative for Pneumocystis carinii cysts, fungi, acid-fast bacteria, and cytomegalovirus. Transbronchial biopsies showed multiple deposits of nonstaining foreign material in the capillaries of the interstitium and in the alveolar walls. There was no acute inflammation, and no granulomas were seen (Fig 3).

Electron microscopy demonstrated nonstaining globular deposits typical of silicone in the alveolar wall capillaries and within alveolar macrophages (Fig 4). The patient received supportive treatment with oxygen and was given intravenous methylprednisolone. She was discharged in stable condition after 4 days; follow-up 10 days later showed a markedly improved respiratory status. Another chest roentgenogram 7 months later was unchanged.

DISCUSSION

Pneumonopathy induced by silicone has been previously described in the literature by several authors.1-7 All reported cases have occurred in patients receiving illicit silicone injections for aesthetic purposes. Two forms of pneumonopathy are related to subcutaneous injections of silicone as described by Chastre et al.2 An acute form occurring within days of the silicone injection and a latent form occurring up to 6 months after the last injection are recognized. In patients with acute pneumonopathy like that in our patient, a similar pattern of symptoms is seen: an acute onset of dyspnea on exertion associated with chest pain and fever. No pulmonary pathogens are usually identified. Moderate to severe hypoxemia is seen. A chest roentgenogram shows bilateral patchy infiltrates. Transbronchial biopsies show distended pulmonary capillaries filled with homogeneous, nonstainable material identified as silicone. Although not present in our patient, some degree of alveolar hemorrhage has been reported in the other cases of acute pneumonopathy. In patients with latent pneumonopathy, chest roentgenograms are normal but pulmonary function studies show either a restrictive pattern or a decreased diffusing capacity for carbon monoxide. The clinical course of the acute pneumonopathy usually is self-limited with progressive improvement of the dyspnea. Five deaths also have been reported in the literature,1,3,6 but in these cases the amount of silicone embolized to the lungs had been massive and at autopsy silicone particles were recovered in other organ systems.

The treatment of this pneumonopathy is still unclear: conservative treatment including bed rest and oxygen supplementation resulted in improvements in most cases. Corticosteroids have been given to many patients (including the patient reported here), but no data exist to prove a higher degree of efficacy from the steroid treatment.

The long-term outcome of this condition is unknown. Chastre et al7 suggest that repeated microembolization to the lung from the large depot of silicone in the skin is possible.

REFERENCES


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Figure 3. Transbronchial lung biopsy showing several embolic globular deposits of nonstaining and nonrefractile silicone in alveolar capillaries. There is no acute or granulomatous inflammation; alveolar spaces contain macrophages (hematoxylin-eosin, original X200).

Figure 4. Embolized silicone material in alveolar interstitium is nonstaining and conforms to shape of capillary vessels (electron microscopy, osmium stain, original X1,200).