

LETTERS TO THE EDITOR

the case of a patient suffering from acute pneumonitis after administration of a large amount of liquid silicone.

The patient was a 23-year-old nonsurgical male-to-female transsexual to whom nonmedical personnel had administered several injections of liquid silicone in the subcutaneous cellular tissue of the breast region, totaling an unspecified amount of over a liter. A few minutes after the procedure, the patient developed intense pleuritic chest pain, onset of dyspnea at rest, cough, and hemoptysis. On admission, the patient presented tachypnea (32 breaths/min), cyanosis, crackling sounds in the base of both lungs, and a temperature of 38.5°C. An x-ray and computed tomography scan of the chest revealed a predominantly peripheral and bilateral patchy alveolar and interstitial infiltration pattern. Blood gases on breathing room air at the time of admission revealed hypoxemia (PaO₂, 39 mm Hg) with normocapnia (PaCO₂, 40 mm Hg) and pH 7.38. The hemogram showed leukocytosis (15 200/μL) with neutrophilia (77%). The biochemical parameters were within the normal range, except for an increase in alanine aminotransferase (96 U/L). Antinuclear antibodies, complement levels, serum immunoglobulin, and human immunodeficiency virus antibodies were negative. The lung-function tests performed 3 days after onset of clinical symptoms showed a moderate restrictive pattern with (forced expiratory volume in 1 second [FEV₁] of 61.6%, a forced vital capacity [FVC] of 62.7%, a ratio of FEV₁ to FVC of 86%; a total lung capacity of 55.3%, and a residual volume of 70.6%) and a slightly increased diffusing capacity—carbon monoxide diffusing capacity [DLCO] 125% of reference). Bronchoscopy revealed the remains of blood in the left upper bronchus. A transbronchial biopsy showed a perivascular interstitial infiltration of histiocytes and macrophages with intracytoplasmic lipid inclusions and signs of parenchymal hemorrhage with the presence of siderophages (Figure).

Following treatment with high-flow oxygen (inspired oxygen fraction, 0.5) and intravenous methylprednisolone at a dosage of 2 mg/kg/d, the patient showed rapid improvement of symptoms and remission of the hypoxemia. The patient was released after 8 days in hospital and continued treatment with a dosage of prednisone of 1 mg/kg/d, which was gradually reduced over the following 2 weeks. In a follow-up examination 2 months after the episode, a chest x-ray showed resolution of the infiltrates and a normal DLCO.

There are many descriptions of the adverse effects of administering injected liquid silicone for cosmetic purposes.¹ For breast

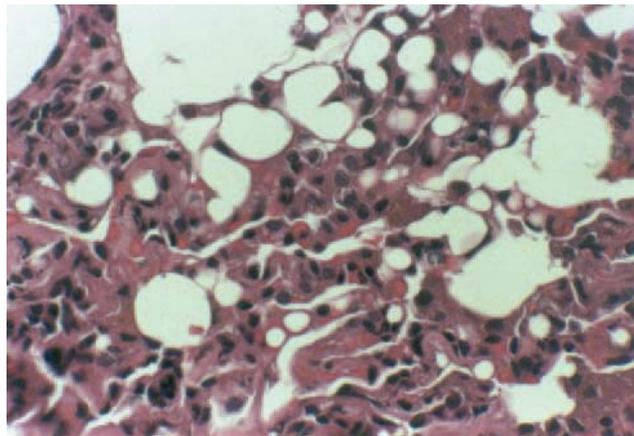
augmentation, the liquid silicone is injected into the mammary subcutaneous cellular tissue in large amounts, normally under high pressure and while performing a local massage.^{5,6} This mechanism, together with laceration of the subcutaneous cellular tissue due to the multiple punctures and accidental intravascular administration, means it is easy for the injected material to reach the bloodstream and enter the pulmonary vessels. The intrapulmonary lesion that develops is similar to a fat embolism, with alveolar hemorrhage and perivascular infiltration of macrophages by lipid vacuoles. Silicone deposits may also occur in other organs, such as the liver, kidneys, and spleen, and scars and deformities may occur locally due to migration of the silicone.⁶ Of note is the role of transbronchial biopsy as a tool for obtaining a firm diagnosis, because of its availability and safety. Such sampling can show the presence of macrophages with intracytoplasmic lipid inclusions and siderophages that result in restrictive lung function alterations with increased DLCO due to the presence of bleeding. The principal treatment is respiratory support with high-flow oxygen in the acute phase. The use of corticosteroids in the acute phase has led to clinical improvement within a few days in several series,^{4,6} although the duration of improvement has not been established. Measures aimed at extracting the silicone from the subcutaneous cellular tissue have had poor results as part of the material becomes trapped by the local fibrous reaction, thus making it difficult to remove. Surgical treatment is technically very complicated and aggressive and occasionally requires bilateral mastectomy.⁶ The risk of severe systemic (mainly pulmonary) adverse effects can be high when large volumes of liquid silicone are administered, particularly for breast augmentation.⁶ Symptoms are serious, transbronchial biopsy is very useful in reaching a diagnosis, and response to corticosteroids may be positive.

Due to the demand for body transformation and the scarce economic resources of some transsexuals, use of liquid silicone is common in this social group and is usually administered

Acute Pneumonitis After Subcutaneous Injection of Liquid Silicone as a Breast Implant in a Male-to-Female Transsexual

To the Editor: Liquid silicone (polydimethylsiloxane) is a liquid polymer widely used for correcting small cosmetic defects.¹ Administering it in large amounts (usually for breast enlargement) is illegal and is associated with serious adverse effects—particularly acute pneumonitis.²⁻⁵ We present

Figure. Increase in the number of alveolar macrophages and histiocytes with large intracytoplasmic pleomorphic inclusions and siderophages. (Hematoxylin-eosin, ×40.)



illegally and in extremely poor hygienic conditions. Transsexuals are a risk group and should be warned about these adverse effects.

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