Acute pneumonitis secondary to subcutaneous silicone injection

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Abstract: Following silicone injection, end organ toxicity can occur. To our knowledge this report documents the first case of silicone embolization in the Caribbean and serves to highlight an emergent danger associated with its illicit use for cosmetic purposes in this region.

Keywords: silicone, silicone embolism, silicone pneumonitis, alveolar hemorrhage, pneumonitis

Case

A 38-year-old female presented to the emergency department with sudden onset of shortness of breath, chest pain, and hemoptysis. On examination, the patient was afebrile and positive findings included tachycardia (pulse rate of 130 beats per minute), tachypnea (respiratory rate of 35 breaths per minute), and SpO₂ by pulse oximetry was 86% on room air. The trachea was central and there was symmetrical chest expansion, with resonance on percussion and clear breath sounds bilaterally.

Arterial blood gas results revealed hypoxemia and a respiratory alkalosis (pH: 7.46; pCO₂: 30 mmHg; pO₂: 55 mmHg; HCO₃⁻: 22 mmol/L; SaO₂: 88%). Initial chest X-ray was normal and CT pulmonary angiography (CTPA) showed no evidence of pulmonary embolism, but there was basal and peripheral interstitial shadowing bilaterally (Figure 1). The clinical impression at that time was acute interstitial pneumonia with possible pulmonary embolism (PE). High-flow O₂ was administered together with intravenous levofloxacin 750 mg orally and intravenous hydrocortisone 200 mg every 6 hours. Since the patient's coagulation profile was normal and there were no obvious vascular deformities noted in CT scan, subcutaneous enoxaparin 60 mg twice daily was also started. By day 3, her condition had worsened with increasing hemoptysis and decreasing SpO₂ ranging from 83% to 85%. Repeat arterial blood gas was consistent with worsening hypoxemia and partially compensated respiratory alkalosis (pH: 7.48; pCO₂: 26 mmHg; pO₂: 50 mmHg; HCO₃⁻: 18 mmol/L; SaO₂: 80%). Chest examination now revealed crepitations bilaterally in both bases, and chest X-ray showed bilateral basal nonhomogeneous opacities with obliteration of costophrenic angles (Figure 2). The patient was repeatedly counseled about the seriousness of her condition and further inquiry revealed that the patient had received silicone injection on her buttocks, 6 hours prior to her presentation. Approximately 500 mL of silicone was administered by an unlicensed aesthetician. Over the next few days, the patient's
anticoagulated with warfarin for 6 months. Radiological resolution and spirometry normalization (Table 1) occurred after 4 weeks, whereas, elevated AST were normalized only after 8 weeks.

**Discussion**
Liquid silicone is a polymer (dimethylpolysiloxane) that has been widely used for aesthetic purposes since the 1960s. Despite the dangers and long history of fatalities, disease, and disfigurement caused by silicone injection, its illicit use is still common around the world.

Two distinct patterns of clinical presentation are seen after injection of silicone enters the systemic circulation: either respiratory distress, which occurred in this present report, or severe neurological changes. The first case of

<table>
<thead>
<tr>
<th>Day 14</th>
<th>1 month</th>
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<tbody>
<tr>
<td>FEV1/FVC%</td>
<td>90.8</td>
</tr>
<tr>
<td>FEV1</td>
<td>1.38 L (61% of predicted)</td>
</tr>
<tr>
<td>FVC</td>
<td>1.52 L (58% of predicted)</td>
</tr>
<tr>
<td>FEF25–75%</td>
<td>2.29 (62% of predicted)</td>
</tr>
</tbody>
</table>

*Abbreviations:* FEV1, forced expiratory volume in the first second of expiration; FVC, forced vital capacity; FEF, forced expiratory flow, midexpiratory phase.
Systemic complications have also been reported after silicone use and include mastitis, granulomatous hepatitis, connective tissue disease, lymphadenopathy, and acute febrile reaction.1 This patient’s persistently elevated AST may have occurred on account of silicone migration to the liver, but conservative treatment was undertaken and resolution was complete.

This case highlights a serious complication of an apparently innocuous process, of which clinicians and the public should be made aware. Clandestine injection of silicone for body enhancement is common and clinicians should be aware of potential complications.5 A history of cosmetic procedures involving silicone should be considered in unusual cases of the nature presented here.

Disclosure
The authors declare no conflicts of interest in this work.

References