Abstract

We present a case of a 48-year-old woman with a significant history of atopy. She presented with a 1-month history of dyspnea on exertion. Pulmonary function testing was normal, with no obstruction or reversibility post-bronchodilation. Bilateral breast implant rupture was detected on further investigation for a left upper lobe nodule, and the patient underwent bilateral implant removal. There was an improvement in her respiratory symptoms. Systemic symptoms, labeled as “Autoimmune/Inflammatory Syndrome Induced by Adjuvants,” are known to be associated with breast implants, with 14% of women in a cohort developing autoimmune disease secondary to their implants. An improvement in symptoms has been demonstrated following breast implant removal.

Keywords: Breast implants, dyspnea, hypersensitivity, rupture

INTRODUCTION

Silicone breast implants are known to be associated with the presence of non-specific systemic symptoms such as myalgia, fatigue, and dyspnea and can induce a syndrome which has been coined the “Autoimmune/Inflammatory Syndrome Induced by Adjuvants.” Removal of silicone breast implants can result in the improvement in symptoms in a majority of women.

CASE PRESENTATION

A 48-year-old woman, with a significant history of allergy to multiple agents such as mould, fish, and alcohol, presented to the Pulmonary Clinic with a 1-month history of chest tightness associated with dyspnea on exertion. She had no significant family history of atopy and was denied occupational or environmental exposures. Her previous medical history consisted of chronic sinusitis, retinal detachment, bilateral breast enlargement, and nasal polyps with polypectomy. She had a 25 pack-year smoking history.

On examination, she was normotensive and not tachypneic. Her oxygen saturations were 96% on room air. Lung examination was normal. She was commenced on an albuterol metered-dose inhaler (MDI) as required, and pulmonary function testing (PFTs) and a chest X-ray were performed. PFTs were normal, with no obstruction and no response to bronchodilation, with normal lung volumes and diffusing capacity of the lungs for carbon monoxide (DLCO). The patient had a positive methacholine challenge test at 4 mg/mL metacholine with a 22% decrease in FEV1. There was a left upper lobe nodule on chest X-ray; therefore, a chest computed tomography (CT) scan was performed, which showed a calcified granuloma in the left upper lobe, enlarged bilateral axillary lymphadenopathy, and an enlarged left internal mammary lymph node of uncertain significance. A positron emission tomography (PET) scan showed no uptake in the granuloma but showed mild hypermetabolic circumferential breast parenchyma around the breast implants bilaterally (Figure 1). These findings were suggestive of mild intracapsular rupture with reactive adenopathy. A breast magnetic resonance imaging (MRI) scan confirmed these findings, with an evidence of bilateral intracapsular rupture with silicone migration to a left intramammary lymph node and bilateral axillary lymph nodes. There was no evidence of breast cancer. The patient underwent bilateral removal and replacement of her breast implants, with significant improvement in her respiratory symptoms.
also develop into granuloma formation, which can then be dem-

In a small study of patients receiving silicone implants, patients
demonstrated strong capsular binding of IgG and weak capsular
binding of IgM. Serum IgE levels were also noted to be higher in patient
sera than control sera (12). The authors concluded that silicone materials
do lead to an immune response consisting of anti-silicone antibodies,
which is most evident immediately adjacent to the implant itself.

CONCLUSION
Although the association between ruptured breast implants and
systemic symptoms is well reported, to the authors’ knowledge,
there are no cases of dyspnea on exertion and wheeze because of
breast implant rupture that improves on implant removal. Physicians
should consider the possibility that silicone breast implants may be
the cause of dyspnea.

REFERENCES
1. Harbut MR, Churchill BC. Asthma in patients with silicone breast implants:
   Report of a case series and identification of hexachloroplatinate contami-
   Women with silicone breast implants and unexplained systemic symp-
3. Gildenstein J. History of augmentation mammoplasty. Ann Chir Plast Est-
   hett 2005; 50: 337-49. [CrossRef]
4. Spear SL, Murphy DK, Slicton A, Walker PS; Inamed Silicone Breast Imp-
   lant U.S. Study Group. Inamed silicone breast implant core study results
   at 6 years. Plast Reconstr Surg 2007; 120: 85-165. [CrossRef]
5. Cunningham B. The mentor core study on silicone gel breast implants.
   Plast Reconstr Surg 2007; 120: 19-39. [CrossRef]
6. Levy Y, Rotman-Pikielny P, Ehrenfeld M, Shoenfeld Y. Silicone breast implant-
   lation-induced scleroderma: description of four patients and a critical
   review of the literature. Lupus 2009; 18: 1226-32. [CrossRef]
7. Costenbader KH, Gay S, Riquelme ME, laccarino L, Doria A. Genes, epigenetic
   regulation and environmental factors: which is the most relevant in devel-
8. Vasey FB, Zarabadi SA, Seleznich M, Ricca L. Where there’s smoke there’s
   fire: the silicone breast implant controversy continues to flicker: a new
disease that needs to be defined. J Rheumatol 2003; 30: 2092-4. [CrossRef]
   Clin Invest 2011; 41: 203-11. [CrossRef]
    enfeld Y. Autoimmune/inflammatory syndrome induced by adjuvants
    (ASIA) 2013: Unveiling the pathogenic, clinical and diagnostic aspects. J
    Autoimmun 2013; 47: 1-16. [CrossRef]
11. Dargan D, McGoldrick C, Khan K. Type IV hypersensitivity to a textured
    [CrossRef]
12. Bekerecioglu M, Onat AM, Tercan M, Buyukhatipoglu H, Karakok M, Isik D,
et al. The association between silicone implants and both antibodies and
    autoimmune diseases. Clin Rheumatol 2008; 27: 147-50. [CrossRef]