



Silicone Lymphadenitis Mimicking Carcinoma: A Case Report

Monika Gupta¹, Deepshikha², Anjali Sindhu³, Sneha Banwala⁴, Sunita Singh⁵

¹Professor, ²Junior Resident, ^{3,4}Senior Resident, ⁵Senior Professor and Head,
Department of Pathology, Pt. B.D. Sharma PGIMS, Rohtak

***Corresponding Author:**

Deepshikha

Department of Pathology, Pt. B.D. Sharma PGIMS, Rohtak

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Abstract

Silicone, being an inert material, is widely used as breast reconstruction prosthesis and post mastectomy cosmetic surgeries. It is associated with numerous but rare complications including local and systemic granulomatous inflammatory reactions, ARDS, silicone lymphadenitis and even malignancy. Here, we present a case of 56 years old female who developed silicone lymphadenitis 12 years after breast augmentation with silicone implants. She had multiple lymphadenopathy in cervical and axillary regions earlier also and went several excisions of those lymph nodes which were diagnosed as reactive lymph nodes.

Keywords: Silicone lymphadenitis, Mammoplasty, Histiocytes, CD64

Introduction

Silicone has become one of the most widely utilized materials for the manufacture of breast implants due to its non-biodegradable nature and no or little reaction from human tissue. Also, this wide application of implanted silicone prostheses is attributed to their biological stability, the long-term preservation of their physical properties. Besides these advantages, one uncommon side effect of mammary augmentation is silicone lymphadenitis or siliconoma⁽¹⁾ which is caused due to transportation of silicone particles to the regional lymph nodes, preceded by silicone rupture or "bleeding" after silicone implantation. This may result in foreign body reaction producing a local swelling of the involved lymph nodes, which can be misdiagnosed as metastasis or malignant lymphadenopathy on first encounter.⁽²⁾

Despite silicone's biologically inert reputation, the literature highlights that it is associated with numerous although rare complications which include local and systemic granulomatous inflammatory reactions affecting breast tissue, lymph nodes, joint

capsules, the heart, liver and kidneys. It has been found as a causative factor in the development of adult respiratory distress syndrome (ARDS), various connective tissue and autoimmune diseases.⁽³⁾

Case Report:

A 56 years old female came to surgery OPD with complaint of right axillary swelling along with on and off fever for 2 months. She was operated for breast carcinoma in 2011 and breast augmentation by using silicone implant was done thereafter. Before the present swelling, she had a history of implant rupture in 2020 along with multiple swellings. Three of them were excised and diagnosed as reactive lymph nodes. Two years later, multiple lymph nodes were again excised which were diagnosed as silicone lymphadenopathy from private laboratory. The other investigatory results were within normal limits.

The present axillary swelling, on physical examination was palpable, non-mobile, tender and measuring approximately 2.5cm in diameter. The swelling was excised and sent for histopathological examination. In the pathology department, we

received an encapsulated globular fibrofatty soft tissue piece measuring 2.2x2.0x0.6cm. On serial sectioning, multiple gray white homogenous areas were identified. The microscopic examination showed structure of lymph node that had been largely

replaced by histiocytes containing foreign material and multinucleated giant cells, consistent with silicone lymphadenitis (Fig 1 and 2). On immunohistochemistry these histiocytes were positive for CD64.(Fig 3).

Figure 1. Microscopic findings of excised lymph node showing silicone-containing histiocytes scattered through the lymph node parenchyma with intact capsule in right corner (H&E, ×10X).

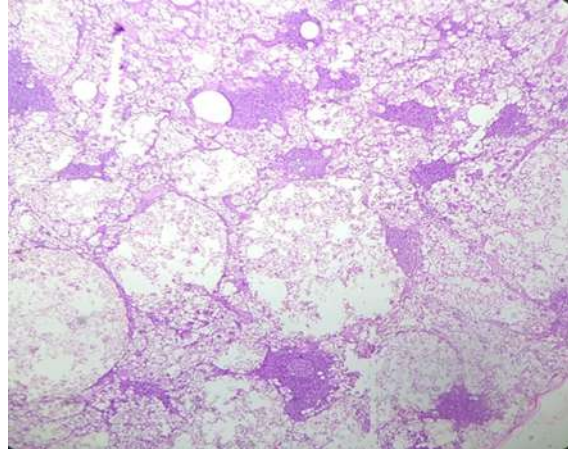


Figure2. Large clusters of silicone-filled, clear-appearing histiocytes replacing lymphoid tissue (H&E, 40X)

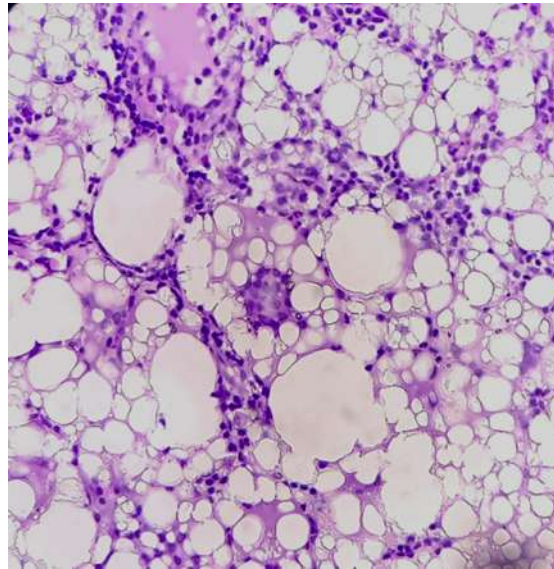
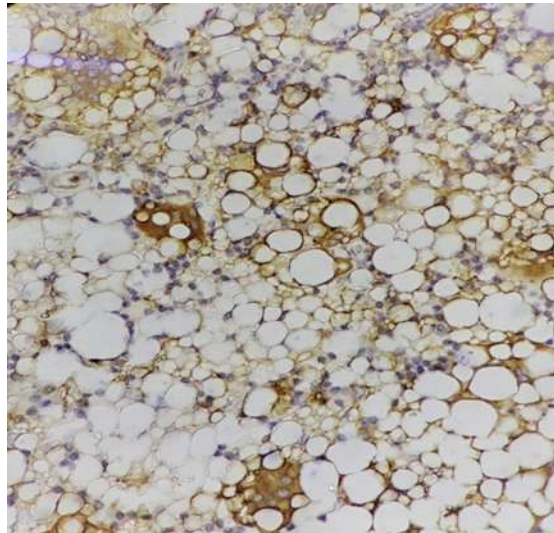


Figure 3. CD64 positivity in foamy histiocytes**Discussion:**

Both benign as well as malignant lesions can give rise to axillary lymphadenitis. Silicone implants have been used extensively in cosmetic breast surgery since they were first introduced in 1962. Silicone is composed of dimethylsiloxane polymers, which is responsible for its distinctive properties. It may exist in fluid, gel and solid form depending on the variation in their chain lengths and cross-links.^(1,4,5) However, silicone prostheses are chemically weak substance and cause little local inflammation and low tissue immunogenicity. Side effects of silicone include local inflammatory reactions, connective tissue disease, autoimmune disease and even malignancy. Silicone lymphadenitis involving axillary lymph nodes is an uncommon complication of breast augmentation.^(4,5)

Speaking of malignancy, literature data shows that there is ample evidence that a type of anaplastic large cell lymphoma (ALCL) is associated with breast implants in 54 cases. Most common finding among them was seroma, which was detected in half of these patients by histopathology. The affected implants were removed. All but one case were ALK-negative.⁽²⁾

The current case is particularly unique in that it mimicked malignant lymphadenopathy because of involvement of multiple lymph nodes with clinical symptoms. The patient presented with palpable axilla and neck masses, multiple enlarged lymph nodes, and

fever, which can be seen in association with cases of lymphoma as B symptoms (fever, night sweats and weight loss).⁽⁴⁾

In conclusion, insertion of implants containing silicone products after mastectomy can lead to a rare complication of silicone lymphadenitis. Our case study shows that these patients should be evaluated thoroughly preoperative along with histological proof of the benign nature of regional lymphadenopathy and thus emphasizing the importance of histopathology to prevent patients from receiving dangerous overtreatment regimes.

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