Presentation of calcinosis cutis 35 years after silicone nasal implant reconstruction

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DESCRIPTION

A 63-year-old female patient with a history of congenital saddle nose deformity and two previous reconstructive rhinoplasties presented with a painful nodule, progressive swelling and mild redness on the nasal dorsum and right-sided nasal obstruction. The last of her two closed rhinoplasties was performed over 30 years ago, the operative details of which were not available. However, procedures included possible use of autografts from the nose and suspected allograft. Only recently did she develop

Figure 1 Preoperative lateral photograph depicting a 5 mm painful nodule situated directly on the nasal dorsum.

Figure 2 Intraoperative photograph demonstrating capsular contracture and calcification of an L-shaped silicone nasal implant. Arrows show areas of extensive calcification.

isolated tenderness over the nasal bones. Physical examination revealed a 5 mm palpable tender mass attached to a mobile graft encompassing the entire nasal dorsum alongside right-sided internal valve collapse (**figure 1**). A preoperative CT scan demonstrated a calcified structure on the nasal dorsum suggesting a previous reconstruction allograft. The assessment and plan included removal of existing graft and complex revision open septorhinoplasty and nasal reconstruction with rib cartilage. Intraoperative findings were surprising and demonstrated the presence of widespread calcification in the skin associated with an L-shaped silicone implant and extensive capsular contracture (**figure 2**). Histopathological examination illustrated deposits of calcified material in the subcutaneous tissue and dermis with peripheral fibrosis. She underwent a total capsulectomy and implant removal followed by autologous reconstruction using her rib cartilage to recreate the L-strut of the nasal septum. Diced rib cartilage wrapped in rectus fascia corrected her original severe saddle nose deformity, and further cartilage grafts alleviated her nasal obstruction. Her postoperative course was uneventful.

Calcinosis cutis is characterised by deposition of insoluble calcium in the skin and subcutaneous tissues. Dystrophic and metastatic classification types account for the majority of cases. Dystrophic is identified by tissue damage with normal serum phosphate and calcium, whereas metastatic presents with abnormal calcium and/or phosphate metabolism. Remaining cases are classified as iatrogenic—inadvertent calcium deposition from medical intervention—or, if cause is unidentifiable, idiopathic.¹ Traditionally, clinicians used a fifth domain, calciphylaxis, now a misnomer, for small vessel

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calcification seen in chronic renal failure. Calcific uraemic arteriopathy should be more readily used.² Lesions on the nose are rare—typically presenting as firm masses on the nasal dorsum, not typically associated with pain. Further consideration should aim to rule out foreign body, malignancy or calcinosis resulting from collagen disorders (ie, dystrophic calcification seen in dermatomyositis and systemic sclerosis). We present a case of calcinosis cutis associated with a silicone implant. Although silicone exhibits low biological reactivity, severe calcification on the implant's surface can be reported many years after implantation.³

The mechanism for implant calcification remains unclear. However, silicone compared with non-silicone implants are at greater risk of calcifying.⁴ Foreign body and inflammatory reactions—likely from long-term mechanical stress—may play a role in calcium phosphate deposition.⁵ These reactions tend to lower

tissue pH to levels suitable for calcium phosphate precipitation. Our case was positive for erythema and swelling indicative of inflammation. Similar to calcified capsules formed around breast implants, the capsule formed around the silicone implant led to contracture, distortion and pain over time in our patient.

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Learning points

- Calcified nodules in the skin might be due to a local process or symptom of systemic disease and require a thorough history and relevant work-up to identify an underlying aetiology.
- Silicone implants in the nose can also develop capsular contracture that can lead to persistent pain symptoms similar to that experienced with breast implants (Baker grade IV).

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