J Oral Pathol Med (2004) 33: 314–6

www.blackwellmunksgaard.com/jopm

CASE REPORT

Tissue reaction to liquid silicone simulating low-grade liposarcoma following lip augmentation

Alexander Maly[1], Eran Regev[2], Karen Meir[1], Bella Maly[1]

Departments of [1]Pathology, and [2]Oral and Facial Surgery, Hadassah University Hospital, Jerusalem, Israel

We report the case of a 32-year-old woman who underwent silicone injection into the upper lip 2 years prior to presenting with masses clinically suspicious for tumor and interpreted on biopsy as low-grade liposarcoma. Lack of pre-operative history of silicone injection almost led to unnecessary surgery. This complicated situation may arise when reaction to liquid or gel silicone histologically closely simulates a low-grade liposarcoma. Clinical and pathological correlations are of critical assistance in making the correct pre-operative diagnosis and avoiding unnecessary traumatic surgical intervention.
J Oral Pathol Med (2004) **33**: 314–6

Keywords: liposarcoma; oral lesion; silicone granuloma

Case report

A 32-year-old woman presented to the division of oral surgery with eversion of the upper lip caused by an irregular bulky mass of 2–3 months duration. Her past medical history was unremarkable, and the patient specifically denied any previous surgical or cosmetic interventions. On examination, the mass extended into the oral cavity and was clinically suspicious for tumor. A biopsy specimen was taken from the mucosa of the upper lip. Permanent sections showed numerous cells with clear vacuoles in the cytoplasm, interspersed under the epithelial layer and between muscle fibers, displacing a single peripheral nucleus, as well as numerous bubbled vacuoles mimicking lipoblasts (Fig. 1A,B). Occasional giant cells were present. The biopsy was interpreted as low-grade liposarcoma. Two months later, in search of a second opinion, the patient underwent the same procedure in another hospital, where the same histologic diagnosis was rendered on a second biopsy. On direct questioning regarding previous cosmetic procedures, the patient once again vehemently denied a history of interventions involving the upper lip. She was then counseled regarding further maxillofacial and plastic surgery. At the prospect of complicated and possibly disfiguring surgery, the patient reluctantly admitted to once, 2 years back, having undergone silicone injection into the upper lip. The second biopsy was then re-examined, and additional studies were performed. Immunohistochemical examination of the vacuolated cells revealed positive staining with anti-CD-68 and anti-lysozyme antibodies. Staining with antibodies against S-100 protein was negative. These results suggested a macrophage derivation. Although most of the silicone was lost in tissue processing, small residual amounts were detected by electron probe radiographic analysis showing the presence of silicone line, other elements represent elements of grid and peaks of energy-dispersive spectrometry (Fig. 2).

Comments

Silicone is a polymer from a family of chemically related organosilicon compounds that may exist in any state from a fluid to a solid. Injectable liquid silicone has been used for various cosmetic treatments, mainly for soft-tissue augmentation. Although initially considered a biologically inert material, liquid silicone has been implicated in a variety of adverse inflammatory reactions such as granulomata (1, 2). The histologic diagnosis of silicone granuloma is straightforward in most cases. Sometimes, however, the reaction to silicone liquid or gel appears as round to oval or 'empty', with multivacuolated lipoblast-like spaces, variable in size, depending on the amount of material introduced into the tissue. The histologic picture mimics a liposarcoma, which is a common soft-tissue tumor, but it is rarely found in the oral cavity (3–5). The most common histologic subtype in all oral locations is well-differentiated liposarcoma/atypical lipomatous tumor (ALT), in which lipoblasts are generally few and difficult to find (3).

An increased amount of multivacuolated cells, which truly mimic lipoblasts, as seen in this case, is in contradistinction to the usual findings of few lipoblasts in

Correspondence: Dr Alexander Maly, MD, Department of Pathology, Jerusalem Hadassah University Hospital, Kiryat Hadassah, PO Box 12000, il-91120, Jerusalem, Israel. Fax: +972 2 6426268. E-mail: maly_alex@yahoo.com
Accepted for publication September 17, 2003

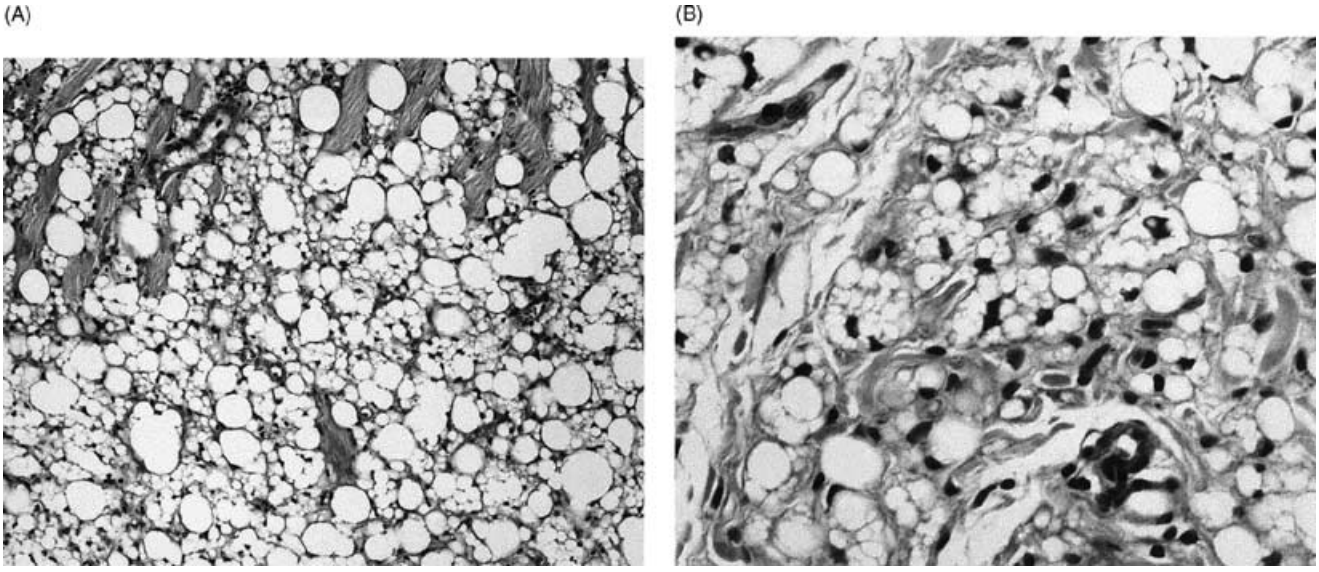

Figure 1 (A) Low-power view showing numerous clear vacuoles displacing a single peripheral nucleus, interspersed between muscle fibers. (B) At high-power, these vacuoles, especially when grouped together mimic lipoblasts.

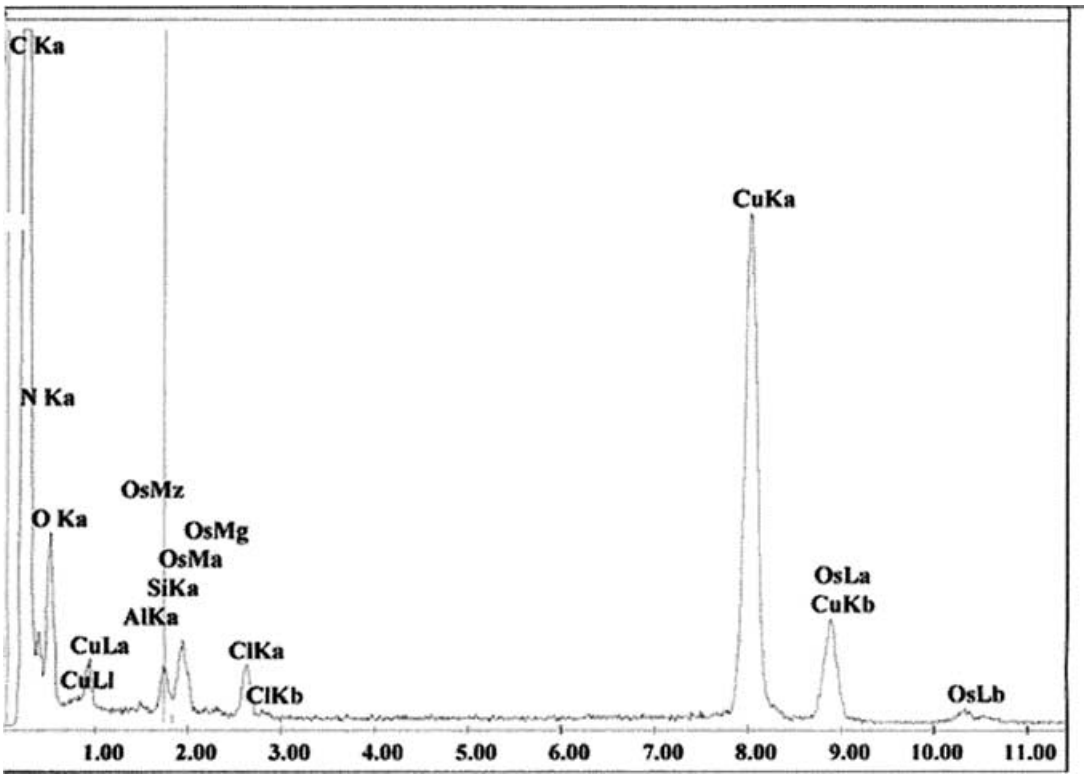

Figure 2 Electron probe radiographic analysis showing the presence of silicone line (Si). Other elements represent elements of grid and peaks of energy-dispersive spectrometry (Ka, La or Ma).

ALT (3, 4). This finding demands further attention, and should raise a red flag of suspicion for silicone granuloma. Lack of a pre-operative history or suspicion of silicone injection makes the distinction from liposarcoma difficult and may lead to a complicated situation and unnecessary surgery. A history of silicone injection should be sought, especially in patients with a mass in a popular silicone-injected area, such as the lips. The diagnosis is also a challenge because the patient usually does not report to the physician about cosmetic treatment years ago (5).

The clinical and pathologic collaboration with sensitivity for eliciting the history will facilitate a pre-operative diagnosis because well-differentiated liposarcomas never have such numerous 'lipoblasts'.

References

1. Pimentel L, Barnadas M, Vidal D, Sancho F, Fontarnau R, Alomar A. Simultaneous presentation of silicone and silica granuloma. *Dermatology* 2002; **205**: 162–5.
2. Suzuki K, Aoki M, Kawana S, Hyakusoku H, Miyazawa S. Metastatic silicone granuloma: lupus miliaris disseminatus faciei-like facial nodules and sicca complex in a silicone breast implant recipient. *Arch Dermatol* 2002; **138**: 537–8.
3. Fanburg-Smith JC, Furlong MA, Childers ELB. Liposarcoma of the oral and salivary gland region: a clinicopathologic study of 18 cases with emphasis on specific sites, morphologic subtypes, and clinical outcome. *Mod Pathol* 2002; **15**: 1020–31.
4. Fletcher CDM. *Diagnostic Histopathology of Tumors*, 2nd edn. London: Churchill Livingstone, 1999; 1480–5.
5. Warner E, Lipa M, Pearson D, Weizel A. Silicone mastopathy mimicking malignant disease of the breast in Southeast Asian patients. *Can Med Assoc J* 1991; **144**: 569–71.