

Lymphoplasmacytic lymphoma in a patient with leaking silicone implant

Haematologica 2003; 88(10):e144

We present the unusual case of a patient with leakage of a silicone implant, developing lymphoplasmacytic lymphoma. A 55-year old woman consulted us because of recurrent unexplained low grade fever since 1985. In 1977 the patient had received silicone implants in both breasts. A mammography in 1992 showed a faint granular shadow, indicating leakage of the left silicone implant. Two years later, both breast implants were removed. In March 2002 an enlarged lymph node in the left axilla was detected and subsequently excised. Histopathology specimens showed foreign body granulomas due to silicone without overt signs of malignant lymphoma (Figure 1a). Physical examination in April 2002 showed no further enlarged lymph nodes. IgM was elevated up to 833 mg/dL (normal value <240 mg/dL). A work up of medical history indicated a slow increase of IgM during the last decade (1984: 237 mg/dL, 1991: 370 mg/dL, 1993: 577 mg/dL, 2001: 769 mg/dL, 2002: 833 mg/dL). Immune fixation showed a monoclonal IgM gammopathy of type kappa. Bone marrow puncture revealed 10% infiltration with lymphoma cells (Figure 1b). In flow cytometry lymphoma cells were CD19, HLA DR and CD27 positive, CD5 and CD10 negative. Therefore we diagnosed lymphoplasmacytic lymphoma.

DNA was extracted from paraffin blocks and amplified using two primers (FR3A and LJH) recognizing the CDRIII region of the immunoglobulin heavy chain gene according to standard protocols.¹ Analysis of the PCR products by acrylamide gels run on an ABI Prism 377 using GeneScan 3.1 software, showed monoclonal peaks of identical size (Figure 1c + d). We think it is likely that leaking silicone stimulated the immune system of our patient as indicated by the low grade fever. Symptoms of

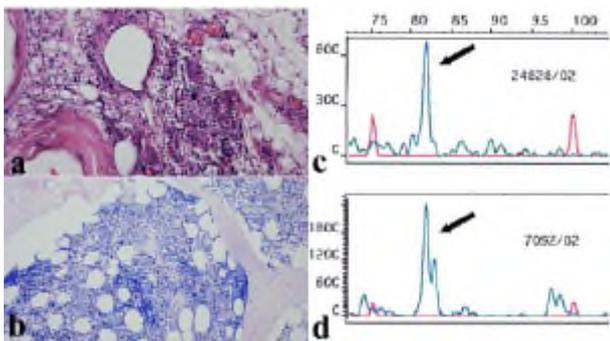


Figure 1. A histopathology specimen of the axillary lymph node showing foreign body granulomas (a) and a specimen of bone marrow (b) indicating a peritrabecular pattern of infiltration with lymphoma cells. Electrophoretograms. Products of the polymerase chain reactions using primers recognizing the CDRIII region of the immunoglobulin heavy chain are shown in panel C (lymph node) and in panel D (bone marrow). The red line represents the size standard and the blue lines the tissue samples from the lymph node and bone marrow, respectively. Both types of tissue show a prominent monoclonal peak of about 82 bp (arrows).

fever, chronic fatigue syndrome and connective tissue diseases have been reported for patients with silicone implants.² Explantation of implants improved symptoms in over half of the patients.² Induction of specific antibodies against a silicone surface associated antigen has been described.³ A coincidence of silicone implants and multiple myeloma has been reported.⁴ Furthermore, induction of myeloma by injection of silicone into mice has been shown.⁵ In summary we propose that stimulation of the immune system by silicone led to the development of a malignant B-cell clone, which could not only be detected in the B-cells surrounding the foreign body granuloma in the draining lymph nodes of the silicone implant, but which also infiltrated the bone marrow of our patient.

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Acknowledgments: D.M. Kraemer is supported by grants

(Bayerischer Habilitationsförderpreis 2000, Wilhelm Sander

Stiftung 1999.119.2)

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