



## Short reports and correspondence

### Leakage and silicone lymphadenopathy with cohesive breast implant

Since the silicone breast implant was introduced in the early 1960s, it has been widely used for cosmetic and reconstructive breast surgery. Although a recent review by the Department of Health (IRG report)<sup>1</sup> has shown no relationship between the silicone breast implant and systemic complications, leakage of the silicone into the tissue and migration to the regional lymph nodes remains a clinical concern. New implants filled with cohesive silicone were introduced a decade ago. It was widely suggested that the cohesive gel implants are less likely to leak even if the shell ruptures. The IRG report included a similar suggestion.<sup>1</sup>

We present a case of a 44-year-old lady who had bilateral cohesive breast implants for cosmetic reason. Twelve months after her surgery, she presented with a palpable lymph node in her left axilla. Fine needle aspiration biopsy of the lymph node revealed silicone lymphadenopathy and MRI of the breasts revealed rupture of the left breast implant. The ruptured implant was subsequently replaced (Fig. 1) and the lymph node was excised. Histological examination showed a 4 × 4 cm<sup>2</sup> lymph node, entirely replaced with silicone particles (Fig. 2).

Silicone is a synthetic polymer (chain) of dimethylsiloxane. It exists in fluid, gel and solid form according to the length of the polymer. The

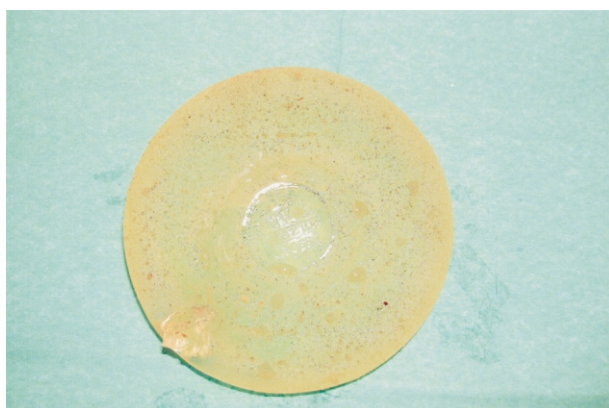


Fig. 1 The ruptured implant after removal.

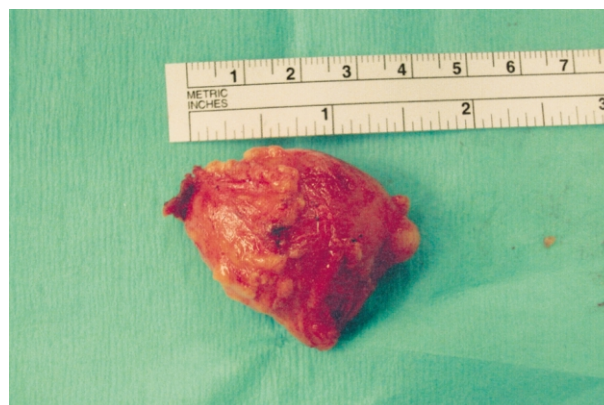


Fig. 2 The excised lymph node was entirely replaced with silicone particles.

fluid form has a small and simple chain while the solid form has a longer and more complicated chain. Leakage and migration into the tissue was linked more to silicone with smaller size chain.<sup>2</sup> However, silicone migration and lymphadenopathy is well-documented complication with the solid form, e.g. joint replacement<sup>3</sup> and testicular prosthesis.<sup>4</sup>

This case raises concerns about the suggestion that cohesive gel containing implants are less likely to leak and the associated implication that lymphadenopathy is less likely.

Although leakage and migration is linked to implants filled with softer semi-liquid silicone, we believe that it could also happen with more cohesive form of silicone gel containing implants.

## References

1. Department of Health, the report of the Independent Review Group, Breast implants: Information for women considering breast implants. [www.doh.gov.uk/implants](http://www.doh.gov.uk/implants).
2. LeVier RR, Harrison MC, Cook RR, Lane TH. What is silicone? *Plast Reconstr Surg* 1993;**92**:163.
3. Roux SP, Bertucci GM, Ibarra JA, Blatt G, Ashworth CR. Unilateral axillary adenopathy secondary to a silicone wrist implant: report of a case detected at screening mammography. *Radiology* 1996;**198**(2):345–6. Feb.
4. Doherty AP, Mannion EM, Moss J, Ockrim JL, Christmas TJ. Spread of silicone to inguinal lymph nodes from a leaking

testicular prosthesis: a cause for chronic fatigue? *BJU Int* 2000;**86**(9):1090.

H. Shaaban<sup>a</sup>, S. Jmor<sup>b</sup>, R. Alvi<sup>a</sup>

<sup>a</sup>Mersey Regional Plastic Surgery Centre,  
Whiston Hospital,  
Liverpool, UK

<sup>b</sup>Southport and Ormskirk District  
General Hospitals,  
Ormskirk, UK

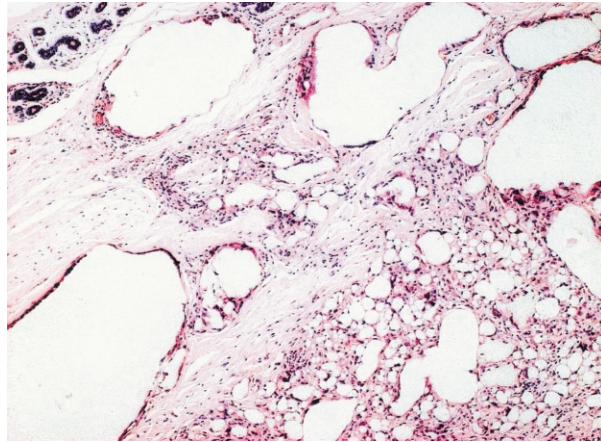
doi:10.1016/S0007-1226(03)00181-4

### Histological appearances of Trilucent™ breast implant capsules

There have been several papers published on Trilucent implants, discussing patient satisfaction, inflammatory response, explantation and chemical analysis of the triglyceride filter, following recall of Trilucent implants by the Medical Devices Agency (MDA) in 1999.<sup>1</sup> A small number of these studies have examined the histological appearances of the explanted capsules.<sup>2-5</sup> We have examined 58 Trilucent Breast Implant capsules both macroscopically and microscopically. The capsules were removed from 34 women following recall by the MDA. To the best of our knowledge there were no complications associated with the implants.

Thirty-three of the 58 cases when examined macroscopically had numerous small yellow nodules on the capsule surface. These yellow nodules were presumed to be lipid. There was no evidence of acute inflammation or calcification. In 44 cases there was a variable foreign body response together with chronic inflammation and refractile nonpolarising material within the capsules, assumed to be oil that had leaked from the implant (Fig. 1). All of the 33 cases that had yellow nodules macroscopically, histologically showed refractile material in the capsule together with a foreign body response. Synovial metaplasia was identified in 14 cases, eight of which were associated with villous hyperplasia but not with a foreign body response or refractile material (Fig. 2). All cases with villous hyperplasia showed no evidence of foreign body response or leakage of oil.

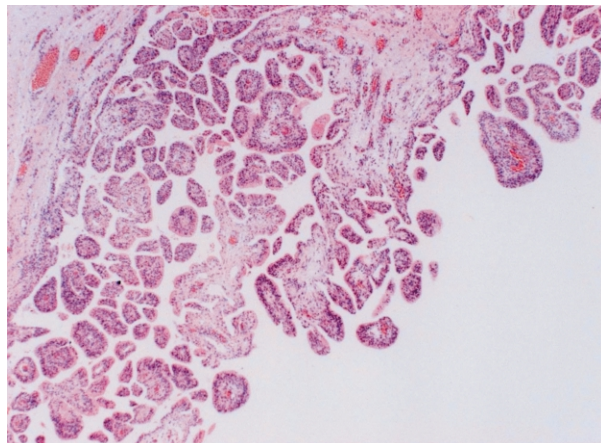
Original animal studies on the cellular reactions to oil-based implants found no foreign body reaction to the oils and the capsules were thin and soft on examination.<sup>6</sup> Recent published reports,<sup>2-5</sup> in contrast to the original animal studies, describe an inflammatory foreign body response to the implants



**Fig. 1** Florid inflammation with multinucleated foreign body giant cells surrounding refractile material (seen as empty spaces of variable size).

with the presence of lipid deposition in the capsular tissue. The majority of the reports describe four consistent features: intense inflammation with foreign body reaction, refractile material within the substance of the capsule, synovial metaplasia and villous hyperplasia. Of the 58 capsules we examined not all showed these four features in combination. When villous hypertrophy and synovial metaplasia occurred together there was no associated foreign body response or refractile material (oil). Flat synovial metaplasia was noted in seven biopsies, four of which showed no evidence of foreign body reaction or refractile material, but in the remaining three mild to moderate foreign body reaction and refractile material was present.

In summary, it appears that without leakage of the oil the response is synovial metaplasia with villous hypertrophy but following leakage of the oil a foreign body reaction of variable severity occurs. Leakage of oil was evident in 44 of 58 cases and as



**Fig. 2** Synovial metaplasia with florid villous hyperplasia.