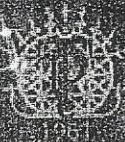


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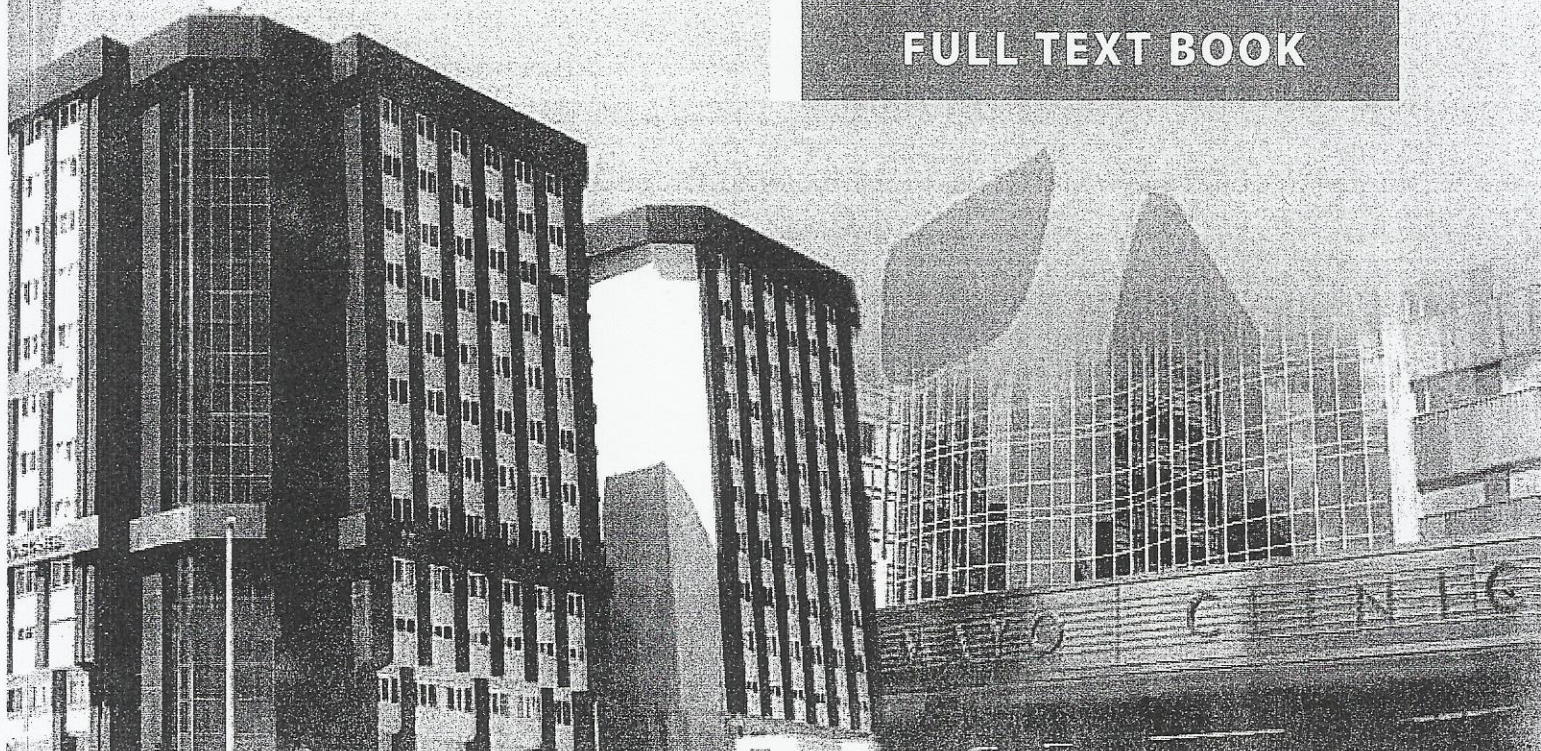
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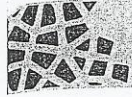
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A-060

## CAPSULAR CALSIFICATION MAY BE AN IMPORTANT FACTOR FOR THE FAILURE OF BREAST IMPLANT

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### Introduction

Nowadays, breast augmentation is one of the most common aesthetic surgical procedures in plastic surgery practice, but is not entirely free of complications, such as haematoma, seroma, implant displacement or rotation, capsular contracture, rippling, disfigurement, perforation and calcification in both early and late implantation period. Among them rupture of the implant in the way of tears or leakage, may be considered as an end point of the all complications, leading to finish the life-span of the prosthesis in vivo and needing explantation.

Presented here is a new possible reason for implant failure with a ruptured breast implant involving severe calcification, suggesting that calcification of either implant shell or fibrous capsule is capable of developing implant failure with tears or leakage in the older implants over time.

### Case report

The patient who was 39 years old, presented for complaining of left breast deformation which affected the symmetry between her both breasts. On coming to our clinic, she wanted symmetric breasts with correction of the left breast deformation completely. For her breast symmetry, 19 years ago, she underwent an operation for mastopexy in right breast and augmentation in the left which received a 250 cc gel-filled implant. On the examination of the left breast which was augmented subpectorally with gel implant previously, significant capsular contracture, namely Baker's score 3; deformation of the projection of the breast; and displacement of the implant laterally and inferiorly were observed, suggesting a rupture or bleeding of the implant (figure 1). As she requested explantation of her implant in order to change with the bigger one to provide better symmetry and shape, any further radiologic imaging methods to be able to demonstrate possible rupture of the implant shell was not used preoperatively.

At the operation, through an intraareolar incision, surgical dissection reached to the implant capsule after passing pectoral muscle by the operation of its fibres bluntly, without cutting, and then massive and extensive calcification of the capsule, and perforation of the implant at the front surface was encountered, showing clearly an intracapsular breast implant rupture which led to leakage of its gel into the capsule (figure 2). After removing the implant, capsulectomy was a mandatory procedure to cleanse both the gel spreading into the capsular cavity and extensive calcific plaques and particles which joined with capsular tissue. Both the ruptured implant and capsulectomy material was carefully assessed macroscopically to reveal mechanical properties of calcific plaques and particles as well as the shell of the implant (figure 3).

### Discussion

As well known, perforation of the gel-filled implants facilitates the whole calcification processes around the capsular tissue, sometimes resulting in large calcific plaques and particles, also in some instances bone formation which can be seen microscopically; however, periprosthetic calcification either over the implant or its capsule without any signs of tear or bleed can develop in both saline-filled and gel-filled prosthesis. It has been demonstrated that clinically evident calcification occurs frequently in the capsule of gel-filled implants, but rarely over its shell, whereas it develops mostly over the shell of saline-filled implants, but rarely in the capsule of it. An important feature of capsular calcification is the time of onset, which occurs several years after implantation and which is not seen clinically until the implants have been in place for more than 10 years<sup>(1-5)</sup>. Peters W et al have been emphasised that calcification is most common in implants that have been in place for many years, in those that have ruptured, and in those that were inserted in the subglandular (versus the submuscular) plane<sup>(6)</sup>. Similarly, presented case had an implant inserted submuscularly 19 years ago and then a rupture developed with severe calcification.

When dealing with this case having severe calcifications around the capsule, it may be considered easily that such plaques and particles can injure the shell, leading to implant failure in the way of tear or bleed due to the mechanical properties of the calcifications. Once the implant gel leaks from the shell, and spreads over both the surface of implant and capsule, calcification process progresses rapidly with time. When severe calcifications such as hard plaques and particles take place, large tears causing clinically evident breast deformations is possible to develop.

### References

1. Barbosa MV, Nahas FX, Ferreira LM. Capsulectomy: a mandatory procedure in the presence of capsular calcification. *Plast Reconstr Surg*. 2006; 15;117(5):1654-5.

