A Rare Case of Two Different Kinds of Long-Lasting Breast Implants in the Same Patient

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Abstract

Sponge implants were used for aesthetic and reconstructive breast surgery 60 years ago. Major capsular contracture and its uncontrolled clinical symptoms were seen in nearly all cases. With the development of silicone gel implants these sponges were no longer used. This case report presents a patient who had aesthetic breast augmentation with polyethylene (Polystan) sponge implants. One of the implants lasted for 40 years, and the other implant was rejected because of a localized infection seven years after surgery, which was replaced with a silicone gel implant that lasted for 34 years.

Keywords: Polystan sponge, silicone gel implant, breast augmentation, capsular contracture

INTRODUCTION

In the 1950s, sponge implants were widely used in breast surgery before conventional silicone gel implants. Polyethylene sponge implants (Polystan) in different forms became popular as a new solution for severe complications caused by first generation sponge prostheses. However, these products caused complications at short notice. New developments in silicone gel implants in 1963 ended the era of sponges. This study presents a patient who had the longest implantation duration of two different kinds of breast implants (Polystan and first generation silicone gel implant) and two different results of Polystan implants.

CASE PRESENTATION

A 67-year-old patient who had primary breast augmentation with implants 40 years ago requested aesthetic consultation for smaller and symmetrical breasts. She had undergone augmentation mammaplasty with Polystan implants in Turkey in 1965. In 1969, she gave birth. Both breasts produced milk, but she did not breast feed based on her gynecologist’s recommendation. Milk drainage was done by pumping for three months after which no more milk was produced. In 1971, she had febrile disease; on the second day, spontaneous purulent drainage started from a 1 cm puncture in submammarial operation scar of the left breast. Drainage was not overflowing; it soiled two small gauzes in a day and lasted for three months. The left side implant was explanted and replaced with a silicone gel implant. Thirty-two years after the second operation, she fell on her left side of the chest. She explained that she felt a terrible sharp pain and something tearing inside during the fall. Three months later, the breast started to lose its firmness and the shape splayed, without pain or discomfort. During all these years the right breast was problem-free.

In 2005, physical examination revealed that breasts were asymmetrical (Figure 1). The right implant was hard, mobile and painless by palpation. It was classified as the Baker’s type IV capsular contracture. The left implant was semi-soft, mobile, painless and classified as Baker’s type III.

Mammography and ultrasonography showed no suspicious findings of malignancy. The prostheses were explanted, and dermal mastopexy using Wise pattern was performed with new silicone gel implants in March 2005, in Turkey (Figure 2).
The right implant was like a plastic ball filled as a skein. Its shield was intact under thin capsular tissue. No tears or ruptures on its surface were noted, and no calcification was found. When a 2-cm incision was made on the shield, approximately 20 cc white color, viscous odorless fluid came out. Strips were like shredded little pieces between 2 mm width and different lengths (Figure 3).

The left implant was ruptured, smooth surfaced with a dacron patch block on rear silicone gel implant (Figure 4). Its wall and inside gel was thick. There was approximately 30 cc freed silicone gel in the capsular space.

In a standard histologic examination of the capsular tissue using the hematoxylin–eosin dye, a dense accumulation of parallel organized collagen fibers and fibroblast-like cell population were found.

**DISCUSSION**

Insufficiency of autologous transplants and serious complications from paraffin and silicone fluid injections opened a new era of alloplastic implants used for breast augmentation. Between the 1950s and early 1960s, sponge implants were used for augmentation mammaplasty, but complications such as severe capsular contracture and loss of breast volume in a short time discouraged their usage. There are only a few publications that mention long term complications.

Polyethylene sponges were first used for aesthetic breast reconstruction after mastectomy by Naso. Results from Newman’s experimental study in rats encouraged the use of Polystan. Different types of Polystan sponge were produced, such as polyethylene fabric tapes cut by machine and then molded by hand into a ball or shredded strips enclosed in a casing. A major capsular contracture was developed a year later with Polystan as all other type of sponge implant cases. This caused squeezing breast, very tight, painful, and hard-ball looking. The breast also lost its firmness and size. Because of the complications and new developments in silicone gel implants in 1963, the era of sponge implants ended. The use of silicone gel implant for revision surgery in our case is a strong evidence that Polystan was not in market-use in 1971.

In the English literature four cases were reported in three publications regarding the long term results of Polystan used for augmentation mammaplasty. The type of implants in three cases was Polyethylene strips without casing. Two implants were 7 and 11 years old and were explanted for reasons of discomfort and aesthetic. Third patient with a 23 years old implant was published as a missed diagnosis of breast carcinoma. Fourth case was mentioned in Peter’s review as a different type of Polystan sponge that was shredded strips in a casing. The implant was 21 years old, but the author did not give the clinical history and reasons for surgery. The implants in our study were identical to Peter’s case. The facts highlighted in this study, longest duration of Polystan and rejection of implant, have not been mentioned in any case reports published before.

One of the implants remained for 40 years despite developing a Baker’s type IV capsular contracture. It seemed that squeezing and hardness of the breast were tolerated well by the patient. The only reason for explanting was aesthetic correction of appearance.

The other implant was rejected because of a localized suppurative infection. Complications always appeared following trauma like falling on the breasts in long term cases. In our
case I believe pregnancy was figured as a trauma. Hormones made structural changes in the breast tissue during pregnancy; furthermore, milk production might have triggered a new inflammatory response to a controlled foreign body reaction between the implant and breast parenchyma. Hormonal effect was shown as a reason for massive fluid accumulation in the periprosthetic capsule in one case report. Any pregnancy after implantation has not been reported in similar cases so far. This might be another supporting reason for the explanation of a hormonal role in implant rejection.

The silicone implant used for revision was a first generation product with a Dacron patch. It was found ruptured in its intact capsular tissue. New generations of silicone gel implants have been developed over the years based on an extensive number of experimental and clinical studies. Despite complications, the safety of silicone breast implants was confirmed by the FDA. However, it has also been reported that these are not life-long devices. In spite of Baker’s type III capsular contracture and rupture, which is most probably caused by trauma, 34 years of implantation for a first generation silicone gel implant is a remarkable addition to the literature.

CONCLUSION

Polystan implants almost always caused severe capsular contracture and loss of breast firmness in the first 2 years and then needed explantation. These products were not safe and were not used after the 1960s. In this case report, late rejection and longest duration were highlighted as unusual additions to the literature. These two points for Polystan and notable long duration of a first generation silicone gel implant all happened in the same patient. In my opinion, the findings of this case may be considered as important data for breast implants history. It is important to note that the patient had already undergone corrective mammoplasty with 3rd generation silicone gel implants that are being used for the last nine years without any complications.

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