

## Case Report

# Does giant breast tumour have an increased complication risk for subcutaneous mastectomy and reconstruction?

Yusuf Kenan Coban, Nazim Gumus\*

Sutcuimam University School of Medicine, Plastic Surgery Department, Kahramanmaras, \*Numune Hospital, Plastic Surgery Department, Adana /Turkey

**Address for correspondence:** Yusuf Coban, Hastaneler caddesi, Týp Fakultesi Dekanlýđý, Kahramanmaras, Turkey.  
E-mail: cobanyk@ksu.edu.tr

### ABSTRACT

Prosthetic breast reconstruction after subcutaneous mastectomy has some complications such as skin necrosis, loss of areola-nipple, haematoma, seroma, infection, displacement of implants, areola nipple disposition and inadequate skin construction resulting in skin wrinkles. We discuss whether giant breast tumour has an increased complication risk after the surgery, in this paper which reports a patient with giant breast tumour i.e., a large recurrent fibroadenoma in the same breast. Subcutaneous mastectomy was performed without skin reduction through submammary incision. Total muscular coverage was provided for immediate reconstruction using 350 cc gel- filled breast implant. Though haematoma or seroma didn't exist, superficial skin necrosis developed subsequently. Spontaneous epithelisation was observed all of the necrosis area to cover this area in a few weeks. Initially, skin coverage and areola nipple position on the breast was acceptable, but 8 months after the operation, skin reconstruction was not good enough to provide good skin envelope. Just as as skin lack or insufficiency is a severe problem in breast reconstruction, excess skin may be another trouble for providing an acceptable breast shape.

### KEY WORDS

Breast reconstruction, giant breast tumour, implant, skin excess, wrinkles

### INTRODUCTION

Subcutaneous mastectomy and immediate reconstruction are the most common procedures for the treatment of benign recurrent breast mass in recent years. Prophylactic surgery for breast cancer is usually another indication for the same. Although subcutaneous mastectomy and immediate reconstruction are not an aesthetic intervention, aesthetically successful results have been reported in the literature.<sup>[1-4]</sup> Thus, most surgeons prefer immediate reconstruction to late reconstruction after subcutaneous mastectomy, avoiding psychological effects of

mastectomy on the patients. Immediate reconstruction is possible with either autologous tissue or prosthesis. Reconstruction using mammary prostheses has more advantages than reconstruction with autologous tissue regarding operation time and donor site morbidity. Moreover, prosthetic reconstruction has an easier surgical technique than autologous tissue reconstruction. Prosthetic breast reconstruction after subcutaneous mastectomy has some complications such as skin necrosis, areola-nipple loss, haematoma, seroma, infection and implant displacement. Areola nipple disposition and inadequate skin construction resulting in skin wrinkles may be other complications of

reconstruction. All of these may occur after subcutaneous mastectomy and immediate reconstruction. Since complication rates have been studied previously in normal breast volume in the literature, we discussed whether giant breast tumour had an extra complication risk after surgery, in this study which included a patient with giant breast tumor.

## CASE REPORT

Our patient was 29 year-old. Her major complaint was right breast mass which was growing for about 3 to 4 months. She had got severe pain, induration and breast enlargement. She had undergone 3 surgical interventions in 6 years because of recurrent fibroadenoma in the same breast. We admitted the patient with these findings [Figure 1]. After the physical examination, breast and axillary evaluation was made with ultrasound. 4 masses of varying diameters were found in the right breast. The largest one was 7.7 x 11 cm in size and the others were 6.5 x 4.7 cm, 6.5 x 4.6 cm and 5.3 x 3.8 cm respectively. Some glandular tissue was restricted to the upper breast according to the sonographic view. Fine needle aspiration biopsy was made from the largest of breast masses. It showed a fibroadenoma histopathologically. We planned a subcutaneous mastectomy and immediate reconstruction using breast prostheses. Areola nipple complex was 22 cm from midsternal notch, So areola nipple repositioning was not required in surgical planning. It has been noted that there was severe glandular ptosis and skin tension. In addition, there was an incision scar at the axillary region due to former excision of breast masses. So, subcutaneous mastectomy was performed through submammary incision without skin reduction. Skin flap thickness was approximately 1-1.5 cm. Total muscular coverage was provided for immediate reconstruction using 350 cc gel- filled breast implant. A suction drain was inserted into the submuscular and subcutaneous pocket. It was taken out 5 days later.

## RESULT

Skin flap perfusion at the lower half of the breast got compromised on the 4th day postoperatively. Though haematoma or seroma didn't exist, superficial skin necrosis developed on subsequent days [Figure 2a and b]. This was treated conservatively. Spontaneous epithelisation was observed over all of the necrotic area in a few weeks and surgical intervention was not required.

Prosthetic infection or exposure did not take place. Initially, skin coverage and areola nipple position on the breast was acceptable, but 8 months after mastectomy, skin reconstruction was not enough to provide good skin envelope without wrinkles. Although we taped the areola-nipple complex for fixing it on the center of the breast postoperatively, uncontrolled skin contraction pulled it laterally. Moreover, the prosthesis was displaced medially [Figure 3a and b]. 1 year after the 1<sup>st</sup> operation, we recommended reoperation for the revision of right breast and to get symmetry between the breasts, but as the patient was satisfied, second intervention was not accepted. Pathologic examination of mastectomy materials diagnosed a benign phylloides tumour different from the previous fine needle biopsy result.

## DISCUSSION

Subcutaneous mastectomy has some early postoperative complications such as haematoma, seroma, skin necrosis, areola nipple loss, infection and exposure of the implant in reconstructed cases.<sup>[5,6]</sup> Skin necrosis is of great importance, if the breast was reconstructed with an implant. Skin flap thickness, surgical trauma, subdermal vascular plexus, previous incision scars on the breast and preferred surgical technique which may compromise flap perfusion, have an effect on skin viability. Although, haematoma, seroma and surgical trauma on skin are important factors to disturb skin perfusion, skin necrosis may occur even if they don't exist. It has been demonstrated that on the healthy breast, while the nipple was showing a very high perfusion as compared to the other breast skin zones, after the mastectomy the perfusion pattern of the nipple was very low.<sup>[7]</sup> Some authors have recommended two-stage subcutaneous mastectomy for avoiding skin necrosis.<sup>[6]</sup> Another way of avoiding this complication is that reconstruction should be completed in two stages with tissue expanders and permanent round or shaped implants.<sup>[8]</sup> We observed superficial skin necrosis in our case after the reconstruction. This might have been caused by large skin envelope which was not decreased. In nearly normal breast volume, there is possibility of skin necrosis after subcutaneous mastectomy, breast skin necrosis may occurs even if in gynecomastia patients who has much smaller breast mount corresponding to the female breast size. We suppose that in cases of increased breast volume like in a giant breast, there may have a tendency for skin necrosis. Generally, it is thought



**Figure 1:** Preoperative view of the right breast mass: Right lateral view of the giant breast. (Previous incision scar placed in the axillary region)



**Figure 3a:** Anterior view of the breast shape, 2 months after the operation, while the breast shape was deforming (medial displacement of implant, areola malposition and insufficient skin contraction resulting its wrinkles and redundancy)



**Figure 2a:** Superficial skin necrosis occurring lower half of the breast at 3 weeks after the reconstruction



**Figure 3b:** Lateral view; Note the persistence of skin wrinkles and excess



**Figure 2b:** Healing of the skin necrosis one month after the surgery. Areola- nipple and implant position were acceptable at this time, even if there were some skin wrinkles and redundancy on the lateral breast

that skin takes the underlying breast's shape in all breast surgery. That is to say, breast shape is determined by the breast gland.<sup>[9,10]</sup> It is expected that skin envelope after subcutaneous mastectomy will contract and reshape over the breast implant in a few months after surgery. Moreover, redundant and wrinkled skin, usually placed in the axillary region will shrink spontaneously after mastectomy.<sup>[11]</sup> These expectations have been made for normal breast sizes. For giant breast, progress of the healing of the skin envelope is obscure in the literature. It has been emphasized that the cosmetic appearance of the reconstructed breast is largely dependent upon the quantity of breast skin which remains after mastectomy in skin-sparing mastectomy. So, leaving as much skin as is possible significantly improves the natural appearance of the reconstructed breast.<sup>[11]</sup> But, in our patient, skin

redundancy was not helpful for getting a good breast shaping. Preoperatively, we had hoped that the excess skin would contract and drape during the postoperative period in a few months in view of the patient's young age and the fact that the rapid increase in size had been over a short time (nearly 4 months) from the normal breast size. It was theoretically possible to do a reduction in breast skin during the operation, but this meant an additional vertical scar. We decided to perform a subcutaneous mastectomy and immediate reconstruction with only a submammary incision because this did not require an areola-nipple reposition. If this patient had nearly normal breast volume, these complications would not have been seen and perhaps, a successful result would have been possible, like other such cases in the literature. In conclusion we feel that, just as inadequate skin is a severe problem in breast reconstruction, excess skin may also be a problem for consideration while planning for an acceptable breast shape.

## REFERENCES

1. Jarrett JR, Cutler RG, Teal DF. Aesthetic refinements in prophylactic subcutaneous mastectomy with submuscular reconstruction. *Plast Reconstr Surg* 1982;69:624-31.
2. Agaoglu G, Ozgur F, Erk Y. Unilateral virginal breast hypertrophy. *Ann Plast Surg* 2000;45:451-3.
3. Aygit AC, Altan A, Afsar Y. Breast reconstruction after subcutaneous mastectomy for extensive benign masses. *Breast J* 2004;10:163-4.
4. Silfen R, Skoll PJ, Hudson DA. Florid juvenile (cellular) fibroadenomatosis in the adolescent: A case for subcutaneous mastectomy? *Aesthetic Plast Surg* 1999;23:413-5.
5. Yii NW, Khoo CT. Salvage of infected expander prostheses in breast reconstruction. *Plast Reconstr Surg* 2003;111:1087-92.
6. Palmieri B, Baitchev G, Grappolini S, Costa A, Benuzzi G. Delayed nipple-sparing modified subcutaneous mastectomy: rationale and technique. *Breast J* 2005;11:173-8.
7. De Lorenzi F, Yamaguchi S, Petit JY, Rietjens M, Garusi C, Martella S, *et al.* Evaluation of skin perfusion after nipple-sparing mastectomy by indocyanine green dye. Preliminary results. *J Exp Clin Cancer Res* 2005;24:347-54.
8. Yiacooumettis AM. Two staged breast reconstruction following prophylactic bilateral subcutaneous mastectomy. *Br J Plast Surg* 2005;58:299-305.
9. Niamh C, Ian T. Subglandular breast reduction: The evolution of a minimal scar approach to breast reduction. *Plast Reconstr Surg* 2004;113:175-84.
10. Lejour M. Vertical mammoplasty and liposuction of the breast. *Plast Reconstr Surg* 1994;94:100-14.
11. Simmons RM, Adamovich TL. Skin-sparing mastectomy. *Surg Clin North Am* 2003;83:885-99.

1. Jarrett JR, Cutler RG, Teal DF. Aesthetic refinements in

### Author Help: Sending a revised article

- 1) Include the referees' remarks and point to point clarification to those remarks at the beginning in the revised article file itself. In addition, mark the changes as underlined or coloured text in the article. Please include in a single file
  - a. referees' comments
  - b. point to point clarifications on the comments
  - c. revised article with text highlighting the changes done
- 2) Include the original comments of the reviewers/editor with point to point reply at the beginning of the article in the 'Article File'. To ensure that the reviewer can assess the revised paper in timely fashion, please reply to the comments of the referees/editors in the following manner.
  - There is no data on follow-up of these patients.  
**Authors' Reply:** The follow up of patients have been included in the results section [**Page 3, para 2**]
  - Authors should highlight the relation of complication to duration of diabetes.  
**Authors' Reply:** The complications as seen in our study group has been included in the results section [**Page 4, Table**]