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CASE REPORT
Breast

A Periareolar Approach for Skin Cancer Adjacent Nipple–Areolar Complex

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Summary: The periareolar approach has been successfully used in our cosmetic patients, including cases of mastopexy, breast reduction, and severe gynecomastia surgery, demonstrating its efficacy in achieving favorable cosmetic outcomes. However, so far in the English literature, there is no report of using this technique for the reconstruction of skin cancer adjacent to the nipple–areolar complex. A 58-year-old woman presented with basal cell carcinoma on the skin of her right breast, adjacent to the areola. The tumor, measuring 4 × 4 cm, was surgically excised with clear margins. Reconstruction was performed using a periareolar approach, using a purse-string suture technique reinforced with subcutaneous buried sutures to minimize tension instead of using a skin graft or local flap for reconstruction. This method aimed to achieve minimal external scarring by camouflaging the scar at the junction between the chest skin and the nipple–areolar complex.
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Basal cell carcinoma (BCC) is the most prevalent form of skin cancer, typically occurring in sun-exposed areas such as the face and neck. BCC of the breast, particularly in the nipple–areola complex, is exceedingly rare in the literature.[1–3] Such cases require meticulous surgical intervention to ensure complete removal while preserving the aesthetic appearance of the breast. Traditional methods often involve wide tumor excision followed by reconstruction using skin grafts or local flaps, depending on the tumor's size and location.[4,5] However, these approaches can lead to complications such as hyperpigmentation in the case of skin grafts, or visible scarring when using local flaps on the anterior chest.

In our previous experience, surgical interventions were performed for severe gynecomastia. We successfully applied the periareolar incision combined with partial breast tissue excision. The evolution of the periareolar technique was notably advanced by the introduction of the purse-string, or round block, suture by Peled et al,[6] which built upon the Benelli[7] concept for correcting small to moderate ptosis and reducing areola diameter. The use of periareolar skin reduction techniques effectively prevents unsightly scars, confining them to the circumareolar region, where they are virtually inconspicuous from social distances. In this study, we present our experience with BCC adjacent to the nipple–areolar complex, involving wide excision of the tumor followed by immediate reconstruction using this technique. Our goal was to achieve a concealed scar that fades over time, thereby providing high aesthetic value for the patient.

CASE DESCRIPTION

A 58-year-old woman presented with a progressively enlarging lesion on the right chest wall near the areola at the 2 o'clock position (Fig. 1). The lesion, measuring 4 × 4 cm, had been present for approximately a year, with symptoms including occasional ulceration, bleeding, and recent rapid enlargement. The patient had a history of moderate sun exposure but no history of skin cancer. A provisional clinical diagnosis of BCC was made, which was subsequently confirmed by biopsy, and she was referred to the plastic surgery department for excision.

SURGICAL TECHNIQUE

The procedure began with preoperative markings made on the patient in an upright position. Two circular skin markings were drawn: one along the areolar border and another externally based on the tumor size. Under local anesthesia, wide excision of the tumor was then performed, removing the tumor with a 5 mm margin, resulting in a defect approximately 5 × 5 cm in size (Fig. 2).

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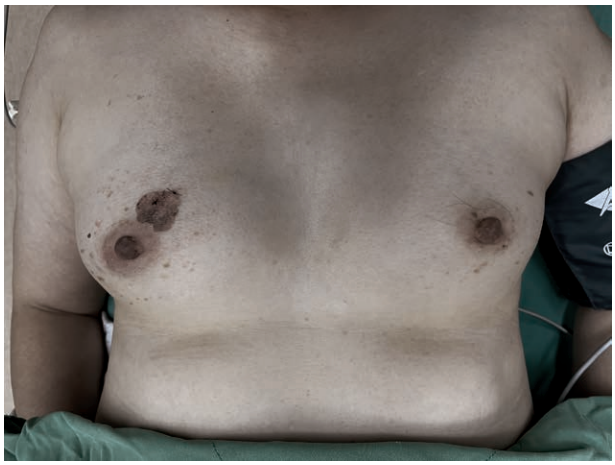

Fig. 1. BCC 4 × 4 cm in size at the right chest wall, adjacent to the nipple–areolar complex.

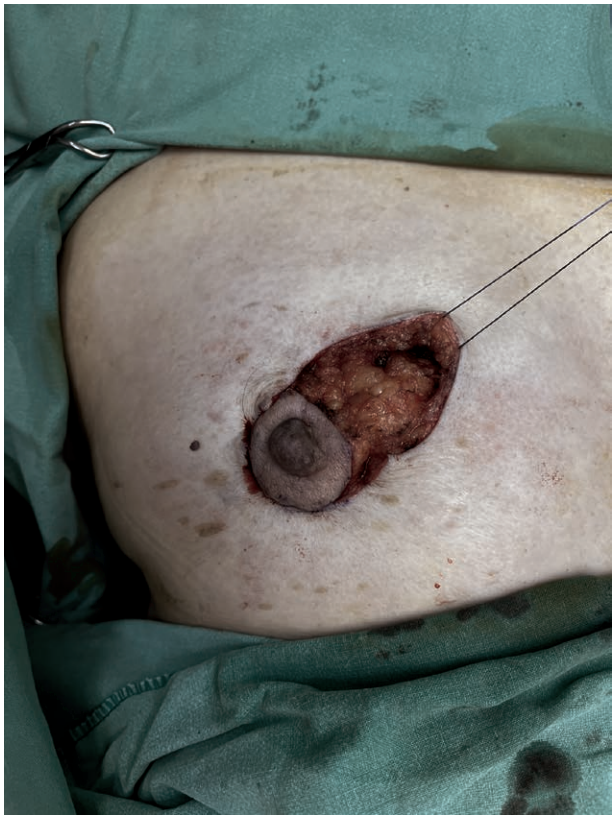

Fig. 2. The defect after wide excision, reconstructed using a periareolar approach with a purse-string suture.

Intraoperative frozen section analysis confirmed clear margins.

We used the Benelli[7] "round block" technique, which is ideal for upper pole skin tumors close to the areola. The technique involved de-epithelialization of the periareolar area with the nipple–areolar complex supplied by a central glandular pedicle. Local parenchymal remodeling with wide skin undermining was performed after tumor excision. The key technique to reduce wound tension involved performing a purse-string running suture with 2-0 Vicryl along the external circle incision. The dermal layer was closed with interrupted buried sutures using 4-0 Dexon, followed by a subcuticular suture, and external interrupted sutures with 5-0 Nylon (Fig. 3). The patient was discharged on the same day.

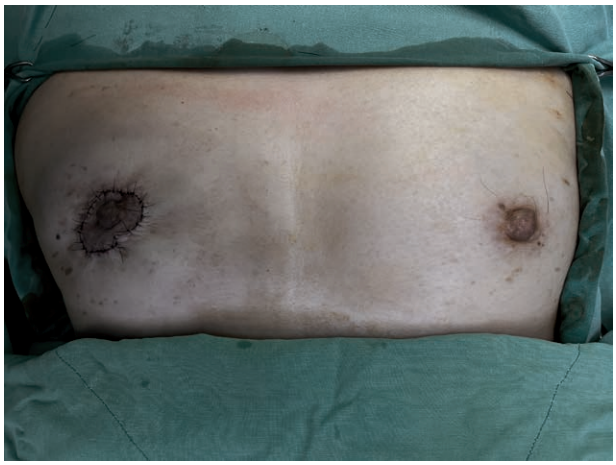

Fig. 3. Appearance immediately after surgery.

RESULTS

All incisions healed primarily, and the postoperative course was uneventful. Stitches were removed on the seventh postoperative day. A 6-month follow-up revealed no local recurrence of the tumor. The patient was satisfied with the cosmetic results and did not express concern about the widening of the areola and the mild asymmetry of the nipple–areola complex (Fig. 4).

DISCUSSION

BCC is the most common type of skin cancer, typically arising from prolonged exposure to ultraviolet radiation.[8] BCCs are slow-growing and rarely metastasize, but they can cause significant local destruction if not adequately treated. BCC on the breast is particularly rare,[9] and surgical excision remains the primary treatment to ensure complete removal and minimize the risk of recurrence.

The periareolar approach, involving an incision around the areola, has been widely used in cosmetic and reconstructive breast surgery.[10] As in previous cases, including breast reduction for gynecomastia and mastopexy for severe capsular contracture, the periareolar technique can be successfully applied in various breast procedures with favorable results. This versatility makes it a valuable option in both oncological and aesthetic breast surgery.

The innovative method of periareolar incisions provides excellent access to tumors located near the areola and results in minimal visible scarring, as the incision follows the natural pigmentation border of the areola. This approach leads to scars that become less noticeable over time, which is particularly beneficial for patients who are concerned with the cosmetic outcomes of their surgery.

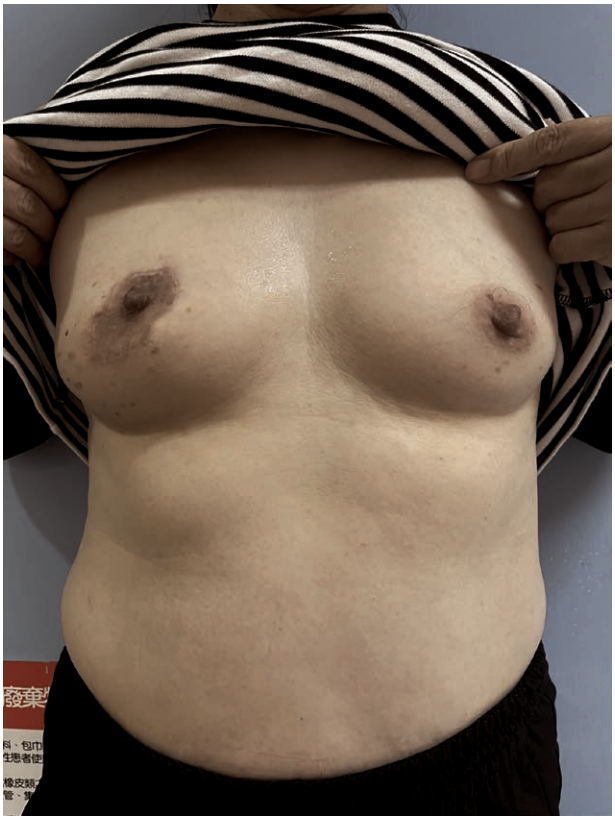

Fig. 4. Postoperative follow-up at 6 months.

However, some authors consider the periareolar approach less advantageous because it may not allow for significant skin excision or volume reduction, leading to limited access for larger tumors. For larger tumors or those located further from the areola, the periareolar approach may not provide sufficient access for complete excision. In such cases, additional incisions may be necessary, which could compromise the cosmetic outcome.

Long-term follow-up revealed that the areolar scar had widened due to increased tension on the incision. In the current patient, we improved the suturing technique by using interrupted buried sutures to close the subcutaneous dermal layer, which helped to reduce tension and minimize scarring.

The possible shortcomings of the periareolar approach include flattening of the breast and widening of the areola over time. This patient demonstrated the widening of the areola at 6 months after surgery. The interlocking periareolar suture technique, as described by Hammond et al,[8] should be considered as an option to help maintain the nipple–areolar shape. Another issue encountered was the mild asymmetry in periareolar skin excision in oncological patients compared with the symmetrical skin excision in cosmetic cases. This should be thoroughly discussed with the patient before the procedure. In cases where the patient has very high expectations, a secondary procedure can be performed later to create symmetry, once it is confirmed that there is no tumor recurrence on the affected side.

CONCLUSIONS

The periareolar approach for reconstructive breast surgery following wide excision of BCC is a promising technique. It ensures complete tumor removal while achieving excellent cosmetic outcomes.

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DISCLOSURE

The authors have no financial interest to declare in relation to the content of this article.

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