Immediate Nipple-Areola Reconstruction Following Excision of Bowen's Disease

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Bowen's or Paget's disease involving nipple is not an uncommon event. Surgical excision with nipple-areola reconstruction is usually required for cosmetic reason. Immediate reconstruction of the deformity during operation is time-saving to both patient and the surgeon. We reported immediate areola-nipple complex reconstruction of a male patient suffered from chronic arsenism with a Bowen's disease (BD) on his nipple. No tumor recurrence or sequela was noted at 8-year follow-up. He was satisfied with the good cosmetic result.(Dermatol Sinica 24: 275-277, 2006)

Key words: Nipple areola complex reconstruction, Paget's disease, Bowen's disease, Chronic arsenism

INTRODUCTION

Bowen's disease (BD) is an in situ squamous cell carcinoma, first described by Bowen in 1912. If left untreated, it progresses to invasive squamous cell carcinoma in 3-5% of patients. Although surgical excision is the gold standard of treatment, it can raise a significant aesthetic concern for tumor at specific anatomic units, such as the face or nipple. Immediate and convenient methods for reconstruction can bring higher satisfaction for both patients and surgeon. We present an immediate nipple areola reconstruction of a male nipple Bowen's disease patient with good cosmetic results.
CASE REPORT

A 60-year-old man lived in an endemic area of chronic arsenism with the history of drinking deep-well water for more than twenty years. He visited the Department of Dermatology, National Cheng Kung University Hospital because of a slow growing plaque on his left nipple for 1.5 years. On examination, a scaly erythematous, verrucous plaque measuring 2.5 x 2.5 cm was noted on the upper half of his nipple. Typical arsenic punctate hyperkeratosis was observed on his palms and soles. Several small BDs were also noted on his trunk. BD was confirmed histopathologically. Although small lesions were treated successfully with cryotherapy, patient refused the treatment for nipple BD due to intolerable pain associated with the procedure. Daily topical 5-Fluoro-uracil (5-FU) was prescribed. He quitted the medication after 2-week application because of painful erosion developed on the applied skin (Fig. 1A, 1B). We finally decided to excise the tumor under local anesthesia. Reconstruction of nipple-areola complex was performed immediately after excision with a modified Bell flap (Fig. 1E, Fig. 2) by using the residual lower half areola. The operation was smooth without any complication. No tumor recurrence was noted at the eight-year follow-up (Fig. 1C, 1D). The patient was satisfied with the cosmetic outcome.

DISCUSSION

BD is an in situ squamous cell carcinoma, presenting as a slow growing erythematous plaque with a crusted scaly surface. Patients with chronic arsenism typically manifest multiple skin cancers, mostly BDs, on non-sun-exposed skin. The risk of progression to invasive squamous cell carcinoma ranges from 3% to 20%. Different treatment modalities have been applied for treating BD, including curettage/cautery, cryotherapy, topical 5-FU, topical imiquimod, CO2 laser, photodynamic therapy, and excision with or without skin graft. Surgical excision remains the gold standard of treatment.

Fig. 1
Bowen’s disease involving the left nipple in a 60-year-old man with chronic arsenism. (A) The tumor is ulcerated after a 2-week 5-fluoro-uracil application. (B) Close-up view of the lesion. (C) Symmetry and long-term projection of nipple at 8-year follow-up. (D) Close-up view of the nipple. (E) Immediately postoperatively, Bowen’s lesion was excised and reconstructed with the lower half residual areola and nipple.

Fig. 2
Schematic figures of the modified Bell flap by using the residual lower half areola. (A) Elliptical excision of the tumor. (B) A triangular skin above the wound is excised and undermined. A semicircular island flap is created with proper undermining after incision along the areola. (C) The flap is rotated and sutured in position as indicated in the direction of the arrows shown in the figure. (D) A new nipple-areola complex is formed.
with a high successful cure rate. However, surgical intervention for tumor at specific anatomic units, such as the face or nipple, raises a significant aesthetic concern and tissue preservation without compromising the tumor removal is highly desirable. In case of sufficient nipple-areola complex remained after tumor excision, proper nipple-areola reconstruction can be achieved with good cosmetic results. The presence of nipple and areola is well correlated with patients’ satisfaction in the breast reconstruction surgery.

Several nipple-areola reconstruction techniques have been developed; such as Bell flap, star flap with/without modification and skate flap. The main goal of reconstruction is the symmetry of nipple with long-term projection. We adapted a technique modified from Bell flap to reconstruct patient’s nipple and areola (Fig. 2A-D). It consisted of a semicircular island flap, isolated from the lower half remained nipple. The flap was incised and undermined (Fig. 2B). The new nipple was formed by elevating the flap and folding into the shape of an inverted box (Fig. 2C, arrows at the lower part). The remainder of the circular island flap was circumferentially incised and partially undermined. Suturing the flap into a flat cone formed the new areola. The nipple was inset in the center of this cone, completing the new nipple-areola complex (Fig. 2D).

In summary, presence of nipple-areola complex is crucial for patients’ body imaging and self-esteem. Proper reconstruction when sufficient tissue remains after excision of tumor involving the nipple can offer good aesthetic results. Immediate reconstruction of nipple-areola complex is a timesaving procedure and can be performed under local anesthesia. We presented a patient who received such an operation with good cosmetic outcome and no recurrence after 8 years.

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REFERENCES