JPRAS Open 41 (2024) 320–325

Contents lists available at ScienceDirect

JPRAS Open

journal homepage: www.elsevier.com/locate/jpra

Case Report

Nipple reduction using the mushroom flap technique for male transgender

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ARTICLE INFO

Article history:
Received 6 December 2023
Accepted 14 July 2024
Available online 22 July 2024

Keywords:
Nipple reduction
Masculinizing chest wall surgery
Male transgender
Female-to-male surgery

ABSTRACT

Nipple reduction is a well-established procedure that is widely used and can improve the self-confidence of male transgender individuals. The nipple reduction procedure in male transgender individuals differs from that in cisgender females due to a greater disparity in postoperative nipple sizes compared to preoperative sizes. Flaps used in male transgender nipple reduction should be simple to avoid skin necrosis. We present the nipple reduction of a 25-year-old male transgender patient using the mushroom technique. A 6 mm circular line was drawn at the most prominent part of the apex of the nipple. Another circular line was created at the base of the nipple. The skin and subcutaneous tissue were removed. The original diameter of the nipple was reduced. The two circular lines were re-approximated and sutured.

Both right and left nipple height was 7 mm, and the width of the right and left nipple was 12 and 13 mm, respectively. The new nipple height and width of both sides at six months postoperative were 3 mm and 6 mm, respectively. The nipples were healed uneventfully, and the patient reported high satisfaction and self-

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https://doi.org/10.1016/j.jpra.2024.07.004

confidence. This method can be used as a promising alternative to previously described techniques.

Introduction

In gender-affirming surgery for trans males, chest wall masculinizing surgery is the primary procedure, which includes the removal of mammary tissue and excess skin and the reduction and repositioning of the nipple-areola complex.[1,2] Nipple reduction is a well-established procedure that is widely available and can help male transgender individuals achieve a more aesthetically pleasing appearance and self-confidence.[3,4] Native female and male nipples are different in all dimensions. A previous study of male nipples reported an ovalshaped, with an average diameter of 0.5 cm and a height ranging from 0.1 to 0.4 cm.[5] Owing to the different characteristics of male and female nipples, expectations and patient satisfaction may be different. Thus, the principle and surgical technique of trans-male nipple reduction may differ from those of female or cis-male nipple reduction.[6–9] Here, we present a mushroom technique of nipple reduction in a trans-male, including preoperative patient desires and postoperative results.

Case presentation

A 25-year-old trans male patient diagnosed with gender dysphoria was referred to our clinic for masculinizing chest wall surgery. The patient had a previous mastectomy with a concentric incision six months earlier. On preoperative physical examination, the patient has a well-healed concentric surgical scar in both areola areas. Both the right and left nipple heights were 7 mm, and the width of the right and the left nipple were 12 and 13 mm, respectively. The nipple sensation was measured with a pinprick test, and the patient was asked to rate the nipple sensation on a scale of 1–10, with 10 being the most sensitive and one being the most negative compared to before mastectomy. The sensory test result for the right nipple was 6/10, and the left nipple was 7/10. There was a desire to achieve a nipple height of 2 mm and a nipple width of 6 mm for the patient. Hormonal therapy was not taken by the patient.

Surgical procedure and results

The circular shape of the new nipple tip was designed under local anesthesia, with a diameter of 6 mm, and placed in the most convex part of the original nipple tip. A second circular line was created around the base of the nipple and then two circular lines were incised (Figure 1). The skin between the two circular lines was de-epithelialized. In order to reduce the diameter of the nipple height and its memory effect, the subcutaneous tissue on the side of the nipple was trimmed then the shape of the nipple looked like a baby mushroom.

The original nipple width was reduced by closing the lateral defect with absorbable sutures. The circular area at the apex of the nipple was sutured to the areola with absorbable sutures (Figure 2). At the end of the operation, both nipples measured 2 mm in height and 6 mm in width. The newly formed nipple was treated with a topical antibiotic and covered with a wound dressing. Wound healing at 2 weeks was uneventful. No skin necrosis and wound dehiscence were found. The sensory test result at two weeks postoperatively for the right and left nipple was 6/10 and 7/10, respectively. At six months of follow-up, the patient has not changed in both nipple sensations with the pinprick test.

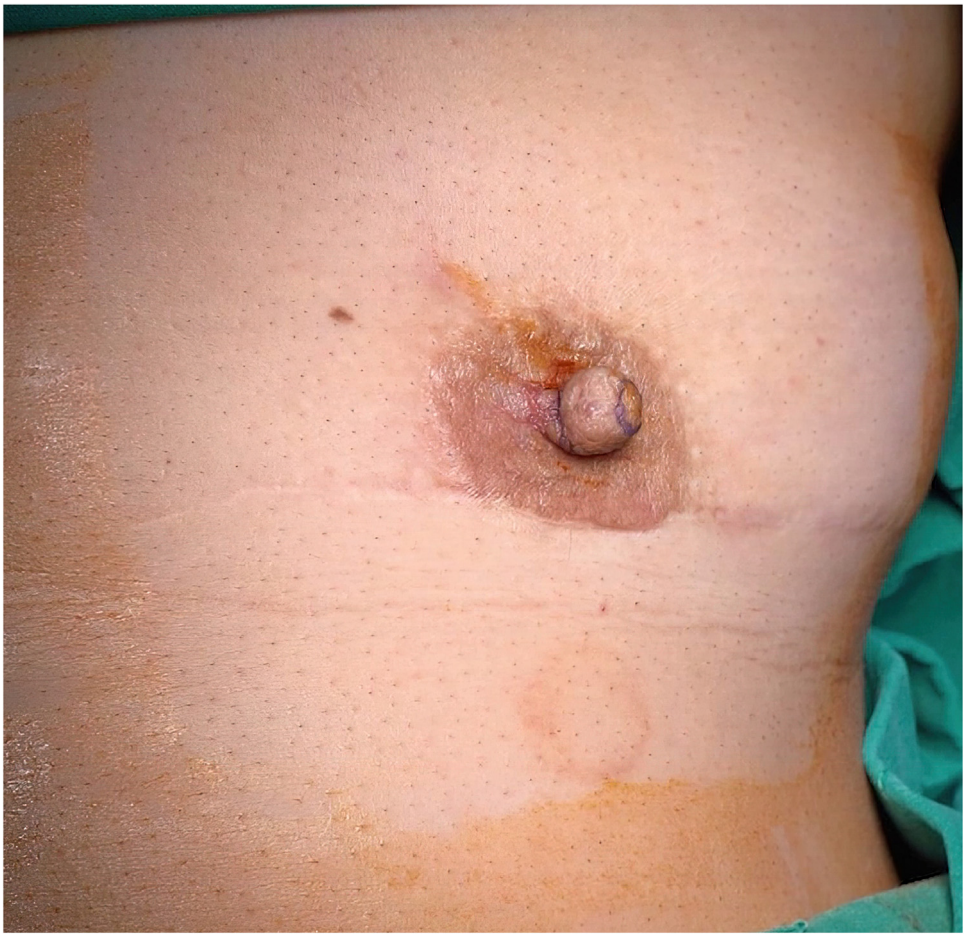

Figure 1. A circular shape was drawn at the most convex area of the apex and base of the original left nipple.

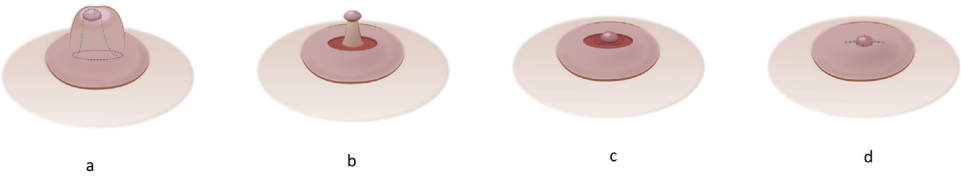

Figure 2. Illustration of nipple reduction using the mushroom technique: a) Preoperative design with two circular lines (blue dot lines), the delineated line represents the remaining soft tissue between the apex and base of the nipple (green dot line), b) The shape of the nipple after the skin between the two circular lines was de-epithelialized and trimmed, c) The remaining nipple was pushed into the base, d) Reduction of the areolar base and suturing of the nipple-areolar complex. (For interpretation of the references to color in this figure legend, the reader is referred to the web version of this article.)

The new nipple height and width of both sides were 3 mm and 6 mm, respectively. The patient reported a degree of satisfaction at 5/5 and self-confidence at 5/5 on a scale of 1–5, with five being the most positive and one being the most negative. Preoperative and postoperative images are presented in Figure 3a and b.

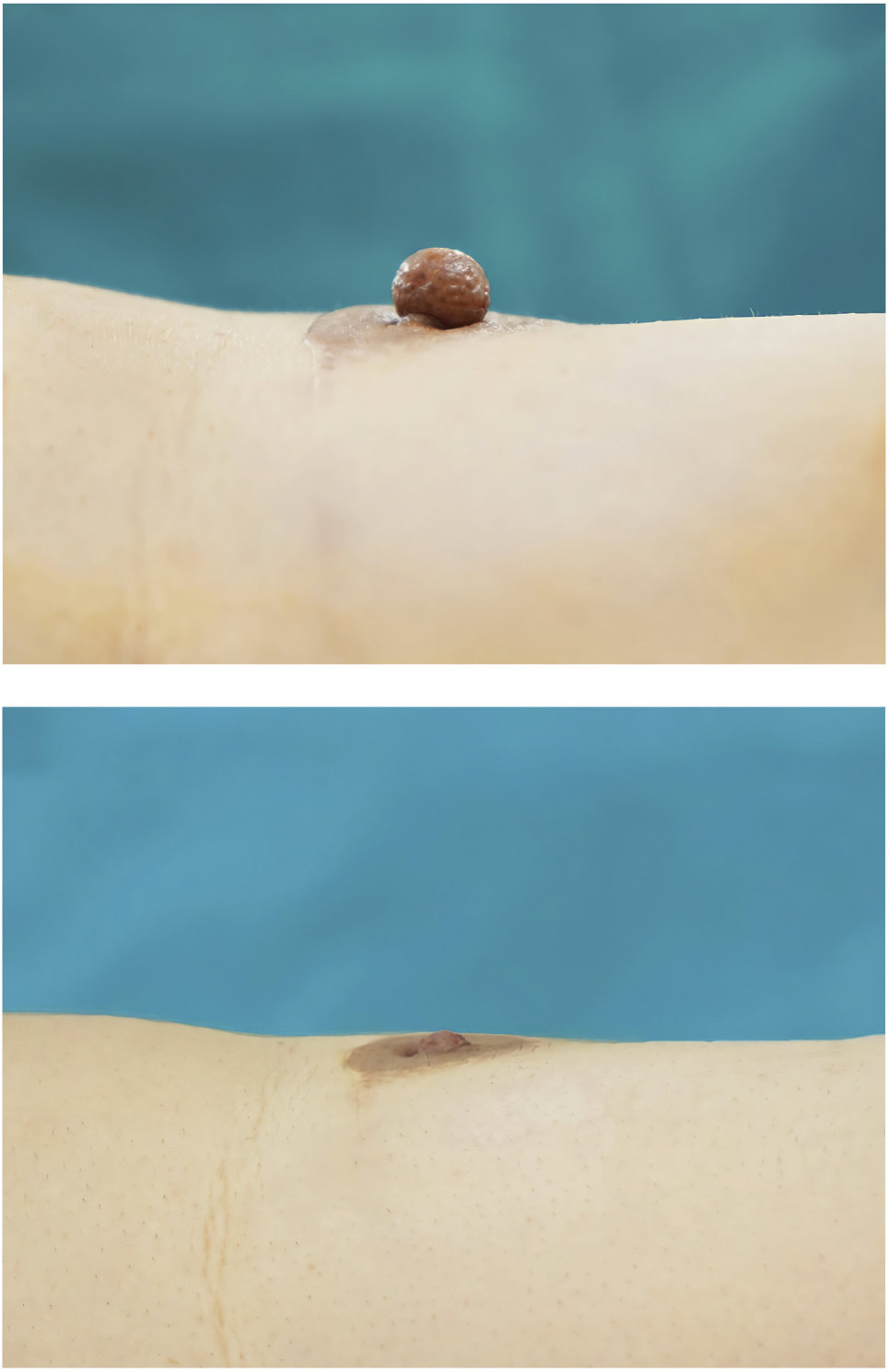

Figure 3. Preoperative (3a), and six months postoperative (3b).

Discussion

Mastectomy with nipple reduction is the primary and one of the most essential gender-affirming surgeries for trans males. This procedure is considered to improve individuals' self-confidence and quality of life and reduce the psychological burden of male transgender individuals. The process involves not only mammary tissue removal but also mastectomy and nipple-areola complex resizing and repositioning. The nipple contains mammary ducts and soft tissue without dominant blood vessels. Based on Rusby et al.'s findings on breast duct anatomy in the human nipple,[10] which preserves the central part of the nipple with intact ducts, we assert that nipple necrosis is highly improbable with our technique, which prioritizes maintaining the central part of the nipple with intact ducts. Reconstruction of the nipple-areolar complex (NAC) in the trans-male population according to the different characteristics of the nipple in males and females is critical for excellent aesthetic results and patient satisfaction.[1–4] Based on our practice in the field of chest wall masculinization in trans males, NAC necrosis has been noted during masculinizing subcutaneous mastectomy with a concentric or extended concentric circular incision due to low blood perfusion to the NAC. Therefore, nipple reduction in trans male patients is commonly performed as a staged operation. The triple-flap nipple reduction method for *cis* female nipple reduction described by Filipe et al. involves three symmetrical triangular flaps to reduce height and width.[6] Nevertheless, the circumference of the new nipple base was unchanged, and a surgical scar was created at the tip of the nipple compared to our technique, which has no scar at the apex of the new nipple. As of our knowledge, multiple flaps used in a small nipple in male transgender have a high possibility of nipple necrosis. Ying-Yang flap for male nipple reduction using a sinusoidal wave incision was reported.[7] However, the apex of the new nipple also has a scar, and the nipple base is still broad compared to our technique. Dali Mu et al. reported a circular flap in hypertrophic male nipples using a simple method.[8] In this method, the remaining portion of the nipple is folded down and sutured in the original nipple diameter. The new nipple diameter remains unchanged and the apex of the new nipple is not in the center to achieve a natural appearance. The immediate result of the new nipple height is more than with our method. In our observation, a male transgender person usually desires a flat nipple height. The Eryngii method of nipple reduction for trans males has been described using a 4-mm diameter dermal punch knife at the center of the apex of the nipple.[9] Nevertheless, the apex of *cis* female nipples always has a cleft at the nipple tip.[9] The new nipple tip may contain a cleft or bifid shape. Our surgical technique uses the most prominent part of the nipple tip instead of the center. The new diameter of the nipple was set at approximately 4–6 mm, depending on the individuals' anatomy and preferences. This patient requested the new nipple width and height as 6 mm and 2 mm, respectively.

The limitations of the mushroom technique include nipple-based concentric scarring. Therefore, patients need to be aware of the possibility of hypertrophic scarring or keloid formation. The results at 6 months postoperative were uneventful; no nipple necrosis and keloid were found, and nipple sensation was unchanged compared to preoperative levels. Long-term spring-back of nipple height caused by the pushing force from below exerted by the remaining core tissue of the nipple may occur. Surgeons should learn and practice how the skin and soft tissue between the apex and nipple base can be removed to adjust the spring-back effect of the new nipple. The mushroom technique can reduce both the height and width of the nipple, allowing for adaptation to any nipple size.

The mushroom flap technique might be an alternative way of nipple reduction in trans male patients. Further studies should be performed to allow for statistical analysis.

Declarations

Ethical Approval: This study was performed according to the principles of the Declaration of Helsinki. The study protocol was approved by the Institutional Review Board of the Royal Thai Army Medical Department (protocol number: IRBRTA 084/2565).

The patient provided written informed consent for publication.

Funding

This study did not receive funds or other support.

Declaration of competing interest

The authors declared no conflict of interest.

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