



## Case Report

# A successful breastfeeding after vertical scar reduction mammoplasty with superior pedicle: A case report

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## ABSTRACT

**Introduction:** Most of patients undergo reduction mammoplasty for aesthetic or therapeutic reasons without consider the effect on breastfeeding function. Vertical scar mammoplasty with superior pedicle is expected to be a breast reduction procedure that can keep maintain the function of breastfeeding. This is the first recorded report of breastfeeding after vertical scar reduction mammoplasty with superior pedicle in Indonesia.

**Presentation of case:** A 23 years old woman presented to the outpatient clinic with enlargement of both breast for 3 years. Physical examination showed bilateral breast enlargement. No tenderness, nodules, nor axillary lymph node enlargement were found. The patient was managed with vertical scar mammoplasty with superior pedicle. The patient was followed up with complication of skin excess and scarring on the bilateral submammary folds. We performed excision and resection procedures to eliminate the skin excess and scars without further complications. The patient was married and gave birth to her first and second child after two and five years following mammoplasty. The patient was able to provide exclusive breastfeeding for both of her children.

**Discussion:** Vertical scar mammoplasty with superior pedicle surgery is a surgical technique that combines a superior pedicle for the areola and performs a central-inferior quadrant resection for breast reduction. It only takes the tissue and glands that are located in the lower quadrant and still maintains the surrounding tissue and glands. This technique also maintains the integrity of nipple-areola complex (NAC) which also important in the lactation process

**Conclusion:** Vertical scar mammoplasty with superior pedicle can be one of the superior techniques in breast reduction which can maintain the breastfeeding function thereby increasing patient satisfaction.

## 1. Introduction

Reduction mammoplasty among adolescent girls has recently increased and become one of the most common breast operations performed [1,2]. It is the 8th most common surgical procedures performed by plastic surgeon globally, with approximately 534.294 breast reduction surgeries performed in 2018 [3]. Over the years, the standard “inverted T” breast reduction procedure still quite widely used. However, the horizontal/submammary scar that is formed still become a major handicap. This condition causes many surgeon to create another alternatives procedure to minimize this effect. The new pattern that have emerged such as the L scar, inverted T scar with a minimum horizontal component, periareolar scar, and the vertical scar [4]. For the last years, vertical scar technique for reduction mammoplasty has gain

more importance, because this technique is associated to shorter scar and eliminate the horizontal scar at the inframammary fold [4,5].

Until now, the main objective of the reduction mammoplasty procedure is to reduce the size of the hypertrophic breast with appropriate redraping of the skin while maintaining a viable nipple-areola complex (NAC) [6]. Some patients undergo breast surgery for aesthetic or therapeutic reasons at an age where they have not yet experienced pregnancy or breastfeeding. Most patients do not ask about the effect of surgery on breastfeeding function [7].

In order for the goal of reduction mammoplasty to be achieved, the surgeon must first determine two options: what incision to be given and what pedicle to be used to retain the NAC [8]. Vertical scar reduction mammoplasty is a breast reduction procedure that is currently being used. This procedure is considered capable of increasing patient satisfaction in terms of physical and cosmetic benefits and reducing

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**List of abbreviations**

NAC	Nipple-areola complex
BMI	Body mass index
WHO	World Health Organization

postoperative complications [1,9]. The use of the vertical scar procedure also has the advantage of maintaining the breast pedicle so as to maintain the vascularization of NAC [10] that is important for breastfeeding function.

In this study, we aim to evaluate the breastfeeding function after vertical scar reduction mammoplasty with superior pedicle procedure. It is the first recorded report of breastfeeding after vertical scar reduction mammoplasty with superior pedicle in Indonesia. This paperwork has been reported in line with the SCARE 2018 criteria [11].

### 1.1. Presentation of case

In April 2009, a 23 years old woman came to the outpatient clinic complaining of progressive enlargement of both breasts for 3 years. The patient also complained that she often felt breathless, soreness of neck and shoulders, and easily became tired. The patient also admitted that she lacked confidence in her body appearance. The patient started menarche at the age of 14. Family history of similar diseases or breast cancer was denied and she did not take any drugs.

On physical examination, the patient's weight was 43 kg, height 153 cm, and body mass index (BMI) 18.4 kg/m<sup>2</sup>. Physical examination revealed bilateral breast enlargement, widening areola, and subcutaneous vein dilation. Palpation of the breast revealed soft consistency, and no tenderness, nodules, nor axillary lymph enlargement were found. We assessed the patient with bilateral mammary hypertrophy (Fig. 1).

Vertical scar mammoplasty with a superior pedicle surgery was performed by a plastic surgeon, under general anaesthesia. The patient had no postoperative complications and was discharged after 7 days (Fig. 2). We made 2 follow up after the breast reduction procedure. The 1st follow up was one week after surgery and the 2nd follow up was one month after surgery. When we followed up the patient, the incision wound was healing and there was no complaints expressed by the patient. In October 2009, the patient came again at our outpatient clinic with skin excess and scarring on the bilateral submammary folds. We performed excision and resection procedures to eliminate the skin excess and scars (Fig. 3). There were no further complications after the second operation and the patient was discharged after 7 days. After one month, the patient did the follow-up at the outpatient clinic and no further complication was found (Fig. 4).

In 2011, the patient got married and gave birth to her first child. The patient said that there was no decrease in sensitivity in the nipple and areola area. In addition, the patient was also able to provide exclusive breastfeeding for 6 months. At the time of giving birth to her second child in 2014, the patient also did not feel any significant complaints in

her breasts and was able to again provide exclusive breastfeeding for 6 months.

## 2. Discussion

In the last two decades, there have been many developments in breast reduction procedures with different results [4]. In general, breast reduction surgery aims to remove breast tissue (skin, adipose, and glands) and transposing the NAC which aims to form breasts that are smaller, symmetrical, look more attractive, and reduce complaints caused by massive and hanging breasts [8,12]. Vertical scar mammoplasty with superior pedicle surgery is a surgical technique that combines a superior pedicle for the areola and performs a central-inferior quadrant resection for breast reduction [13,14].

In our case, the patient was able to breastfeed after 2 and 5 years following breast reduction. Our patient was able to exclusively breastfeed her two children for 6 months each. A key factor of successful breastfeeding after breast reduction is the ability to retain the lobules of the breast gland and maintain sensitivity in the NAC [14]. Operating techniques that are able to leave an anatomical unit between the nipple and the remaining gland can maintain the galactophorus ducts, so that in theory it is able to maintain lactation function [15]. In addition, techniques that maintain the integrity of NAC are also important in the lactation process. This is because the stimulation that the nipple receives when the baby sucks the breast also initiates the release of prolactin and oxytocin which are needed for milk production [16,17]. In the vertical scar mammoplasty technique with a superior pedicle, it only takes the tissue and glands that are located in the lower quadrant and still maintains the surrounding tissue and glands. In addition, we chose a superior pedicle for her NAC because there is an anastomosis from the lateral thoracic artery and internal mammary artery which is able to provide optimal blood supply to the NAC [18].

Apart from its role in lactation function, the sensitivity of NAC also plays a role in secondary sexual function. In our case, the patient claimed to have no impaired sensations with her NAC. According to the patient, the sensitivity did not change either before or after surgery. This is because the nerve supply for the NAC comes from the medial and lateral cutaneous branches of the fourth intercostal nerve from the medial and superior quadrant of the breasts, so that the upper pedicle technique preserves more sensory innervation of the breasts compared to the use of other pedicles [19,20]. The vertical scar mammoplasty procedure with a superior pedicle only involves performing resections of the lower quadrant and leaves intact tissue in the superior and medial quadrants so as to maintain NAC innervation.

To our knowledge, there are only 2 meta-analysis studies that compared the differences in pedicle usage during breast reduction to breastfeeding success. Thibaudeau et al. [21] stated that there is no significant difference between the amount of tissue excised, technique, or nipple sensitivity with breastfeeding success. However, the study stated that many works of literature reported the failure of breastfeeding because the patient did not make any breastfeeding attempt. Another study conducted by Kraut et al. [22] stated that the use of a pedicle that preserved the entire column of subareolar parenchyma increases

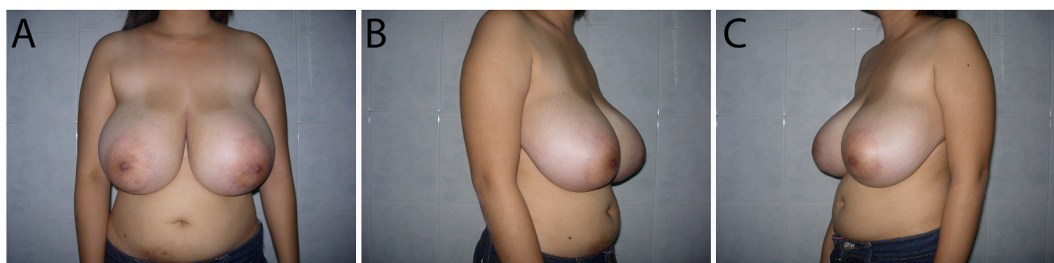


Fig. 1. Pre-operative breasts (A) Anterior view (B) Left lateral view (C) Right lateral view.

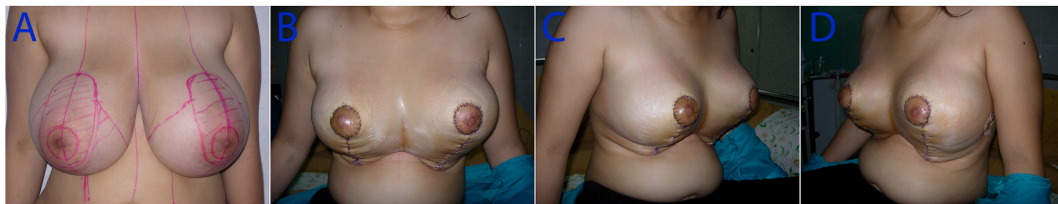


Fig. 2. (A) Breast marked for surgery (B) 7th day post-operative breast anterior view, (C) Right lateral view, (D) Left lateral view.

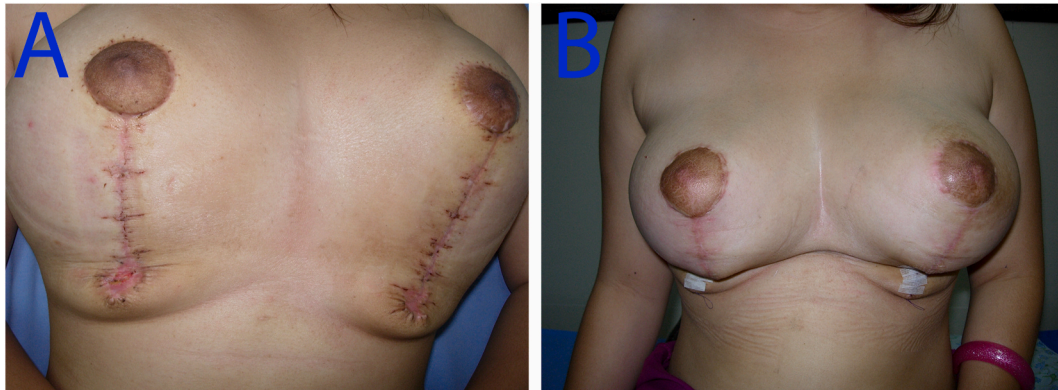


Fig. 3. (A) Breast scar and skin excess after one year following vertical scar mammoplasty with superior pedicle, (B) Post scar excision and skin resection.

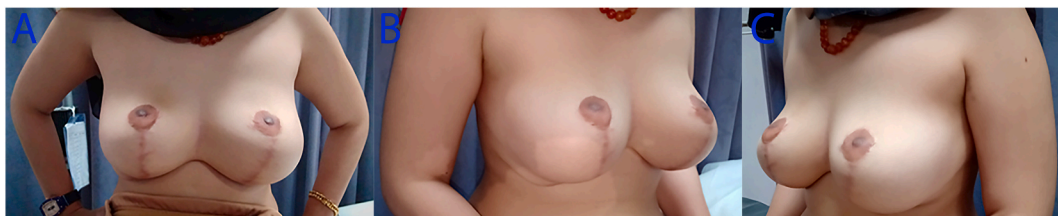


Fig. 4. (A) Anterior view of the breast after one month following scar excision and skin resection, (B) Right lateral view, (C) Left lateral view.

breastfeeding success. However, there are limitations in this literature where only 6 out of 51 studies had low to medium risk of bias. Studies that had high risk of bias showed an overestimation of the breastfeeding success rate. Most of the literatures which analyzed in both studies used different definition of successful breastfeeding. The majority of studies only followed the patient until less than a month (approximately 2–4 weeks) postpartum. Even though, the definition of exclusive breastfeeding by World Health Organization (WHO) is successful to breastfeed until the baby reaches 6 months of age [21,22]. There still no studies that give clear conclusions about which breast reduction technique gives a better outcome for breastfeeding success.

### 3. Conclusion

Vertical scar mammoplasty with superior pedicle can be one of the superior techniques in breast reduction. This is because this technique can maintain the breastfeeding function thereby increasing patient satisfaction. However, there is a need for further prospective studies involving multiple subjects and using more objective parameters in assessing postoperative breast function. We also suggest to create a consensus to define a successful breastfeeding after breast reduction surgery with a follow up until 6 months to equate the definition of exclusive breastfeeding.

### Consent of patient

Written informed consent was obtained from the patient for publication of this case report and accompanying images. A copy of the written consent is available for review by the Editor-in-Chief of this journal on request.

Provenance and peer review.

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### Appendix A. Supplementary data

Supplementary data related to this article can be found at <https://doi.org/10.1016/j.amsu.2020.11.049>.

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