

# One Stage Surgical Treatment of the Tuberous Breast: Augmentation Combined with an Unfurling Procedure

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For the patients-especially for the young women - the congenital deformity of the breast is a problem for the psychosocial development in the adolescence. Many operative procedures for correction of tuberous breast have been described in recent years. Most of these methods however fail to address the issue of the contracting ring with unstable results. Our surgical technique for the correction of tuberous breast deformities is a single stage approach with a combination of an augmentation with anatomical silicone implant for the hypoplasia of the gland. A form correction of the breast glandular tissue by an unfurling procedure is done to correct the constricting ring that herniates into the nipple-areola complex. We describe our surgical technique with suggestions for achieving optimal results. Our combined treatment is based on the fact that the existing breast hypoplasia treated with a silicone implant would not correct the deformity of the breast gland. Therefore, the simultaneous correction of the constricted breast gland is performed and gives patients a longlasting stable result in one single procedure. (J Korean Soc Aesthetic Plast Surg 15: 165, 2009)

**Key Words:** Breast, Breast implantation, Surgical procedure

## I. INTRODUCTION

Congenital breast deformities, including the tuberous breast, affecting teenage women unilaterally or bilaterally are rare entity.<sup>1</sup> In the literature, there is no widely accepted nomenclature, and are many similar descriptions like “snoopy breast”, “constricted breast”, “herniated areolar complex” or “lower pole deformity”.<sup>2</sup> In our clinic, we use the classification of tuberous breast deformities of von Heimburg et al.(1996)(Fig. 1).<sup>2</sup>

Rees and Aston first described this deformity in 1976.<sup>3</sup> There are many methods which are described as one or two stage procedures and include the correction with or without the use of a silicone implant or tissue expander. Although various techniques for the correction of the herniation of the nipple-areolar complex can be found in the literature,<sup>1,4,5</sup> flaps from the submammary fold<sup>6,7</sup> or glandular flaps<sup>8,9</sup> have been used for the treatment of the tuberous breast.

We present in this article our experience using anatomic silicone gel implants in combination with an unfurling procedure of the gland as an opportunity for single stage approach with good outcomes.

## II. IDEA INNOVATION

### Surgical Technique

Preoperative markings are done in a standing position of the patient. The midline of the patient and the horizontal base laterally and medially are marked. This distance determines the selection of implant diameter. The new inframammary fold is marked from the planned final nipple position to the fold. This distance is approximately 60% of the implant height (Fig. 2).

For the procedure, the patient is lying in supine position under general anaesthesia. The incision site is inferior periareolar. An areola reduction in this case can be also corrected. A plane of correction is created between the skin and subcutaneous tissue and the gland tissue and continuous inferiorly to the level of the pectoralis fascia (Fig. 3). For a good blood supply and a good implant coverage, it is important to stay close to the glandular tissue and take care to protect enough subcutaneous tissue of both the lower parts of the breast. The future implant pocket dissection

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**Fig. 2.** Preoperative markings are done in a standing position. The new inframammary fold is marked.

is performed in an atraumatic manner in a subglandular plane.

The breast tissue is then incised from posteriorly in an anterior direction, thus allowing an “unfurling” of the lower pole downward in the lower quadrants of the breast. By this procedure, a glandular flap with a superior blood supply is created. The breast opens up while this flap rotates downwards (Fig. 3). For a better spreading and an easier fixation of the flap, we make an additional superficial vertical incision backside of the performed glandular flap (Fig. 3).

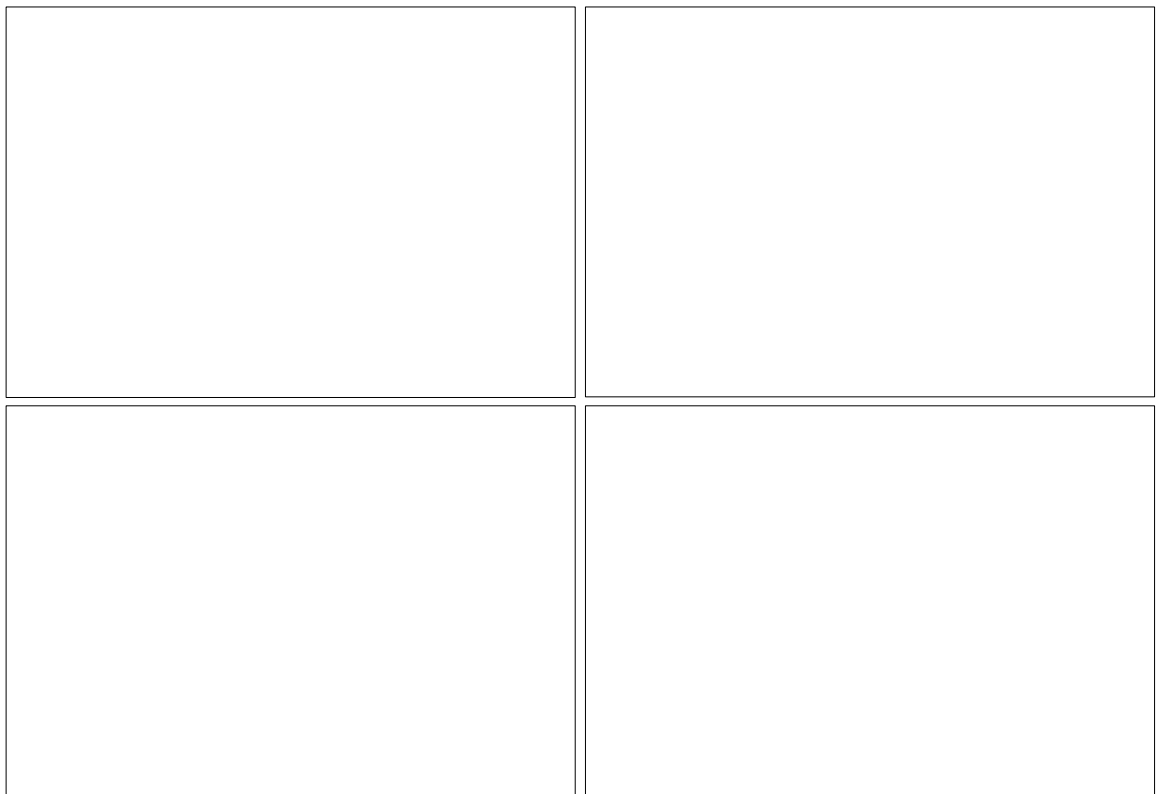
**Fig. 1.** The classification of tuberous breast deformities (of von Heimburg et al. 1996): Type I: Hypoplasia of the lower medial quadrant. Type II: Hypoplasia of the lower medial and lateral quadrants, sufficient skin in subareolar region. Type III: Hypoplasia of the lower medial and lateral quadrants, deficiency of skin in the subareolar region. Type IV: Severe breast constriction, minimal breast base.

Before the silicone anatomical implant is placed subglandular in a routine manner, silicone drainage is placed. After a correct positioning of the implant, the unfurled glandular breast flap is spread in the lower quadrants over the implant and fills up the inferior pole (Fig. 3). Routinely we use a Style 410 MM anatomical implant (Allergan®). The flap is fixed as low as possible with long lasting 3-0 absorbable interrupted PDS sutures. The implant pocket is closed by 3-0 Monocryl absorbable running sutures in a deep dermal layer.

After correction of the hypoplasia, the constricted ring of the gland and the lower pole hypoplasia, the areolar herniation and hypertrophy are treated. Therefore two circles are drawn on the areola. For the inner circle, an areolotome is used as a reference sizer. The skin between these circles is deepithelialized. This will reduce the diameter of the nipple-areolar complex. The periareolar deep dermal suture is made by the technique of Benelli<sup>10</sup> with a 3-0 PDS long-lasting dissolvable material running suture and 4-0 Monocryl single stitch sutures. For the final intradermal layer, we use a 4-0 Prolene non resorbable running suture.

A supporting paper hypoallergenic multilayered thickness tape covers the breast for three to five days. A sport bra and a compression belt (“Stuttgarter Gürtel”) are used for six weeks.

**Fig. 3.** (Left) Dissection between the skin and the glandular tissue to the pectoralis fascia in both lower quadrants of the breast. \* = new inframammary fold. (Center, left) Incision direction for the glandular flap development and after forming a subglandular pocket for the implant. (Center, right) Vertical backward incision for a better spreading of the glandular flap. (Right) After a correct positioning of the implant the unfurled glandular breast flap is spread in the lower quadrants (A) over the implant and fills up the inferior pole.



**Fig. 4.** (Above) Preoperative view of a 19 year old patient with a tuberous breast Type IV. (Below) 3 weeks after surgery. Style 410MM 180g (Allergan®) implants were used in this patient.

### III. Discussion

In this paper, we have described a personal experience in the

treatment of the tuberous breast with particular emphasis on the use of a one-stage procedure to correct the condition. We demonstrated this with the combination of an augmentation of the

breast volume by an anatomical silicone implant, and breast glandular form correction with similar treatment of the constricting ring and areola reduction, and we were able to correct any form of tuberous breast deformity in one-stage.

The extremely hypoplastic tuberous breast as a congenital deformity must be regarded as a severe malformation. Numerous articles published on this subject demonstrate difficulty to develop satisfactory surgical solutions. The severity of the deformity ranges from mild hypoplasia of the inferior medial quadrant (Type I) to major hypoplasia of a severe breast constriction with the absence of all four quadrants and a minimal breast base (Type IV).<sup>2,11-13</sup> The technique developed by Ribeiro et al.<sup>9</sup> with the transaction of the constricting ring in a horizontal axis and the development of a flap from an inferior portion of the breast is very similar to ours. The difference of Ribeiro's technique from ours is that he divided the glandular tissue of the breast from the anterior part and filled this up with an inferior pedicle flap from the both lower poles of the breast. This procedure is easy to perform by a periareolar approach, however, the disadvantage in this case is the impossibility to place a silicone implant in a subglandular position because it might devascularize the flap. This procedure is also possible in all cases when a silicone implant is not desired by patient. However, the majority of patients having the congenital breast tissue have a hypoplastic breast.

The use of an implant alone leads to a double-crease deformity in many cases because the constricted base is not released. The constriction could be released in two stages by the use of a tissue expander and a silicone implant. In our opinion, this two stage procedure never successfully treats the problem of the double-crease deformity caused by the constricted ring. Additional two stage procedure requires a long period of time and is often a psychological trauma for patients with poor late results.

Puckett et al.<sup>14</sup> described the unfurling procedure of the gland in the same manner, except additional superficial vertical incision for a better spreading of the flap. He preferred placing the implant in a subpectoral position. In our patients, we preferred an implant placement in a subglandular plane to maximize the effect of the implant with an expanded skin envelope. In skinny patients with

insufficient tissue in the upper quadrants (pinch test <1.5 cm), we perform a dual plane procedure with a subpectoral dissection in the upper quadrants and a subglandular dissection in the lower pole. This allows adequate implant coverage in the upper part of the breast and maximizes stretching effects of the implant on the constricted lower parts of the breast.

A helpful surgical approach is demonstrated for correction of the hypoplastic tuberous breast. We believe that our technique is simple, technically easy and yields consistently good results. The advantage is a high patient comfort since it is a one stage procedure. Correction of the breast form with the glandular flap, the augmentation with an anatomical silicone implant, and the areola reduction in a final step can solve all problems associated with the tuberous breast deformity in one step.

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