

## Feasibility Study of a Variant Procedure of Radical Breast Ductectomy (Dolichectomy) with a Perinipple Incision

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### Rezumat

#### *Fezabilitatea exciziei ductale radicale prin incizie perimamelonară*

Papilomatoza și ectazia ductală recurentă ar putea fi tratate prin excizia canalelor galactofore terminale. În acest studiu descriem o procedură modificată miniinvasivă de excizie a canalelor galactofore terminale prin abordul perimamelonar al jumătății inferioare sau superioare a mamelonului. Această tehnică evită o incizie periareolară mult mai extinsă și are rezultate estetice excelente.

Cuvinte cheie: incizie perimamelonară, papilomatoză, ectazie ductală, excizie ductală

### Abstract

Papillomatosis and recurrent duct ectasia could be treated with terminal lactiferous ducts excision. In this study we describe a modified miniinvasive procedure of terminal lactiferous ducts excision with a perinipple approach to the lower or upper half of the nipple. This technique avoids the much more extensive periareolar incision and has excellent aesthetic results.

Key words: perinipple incision, papillomatosis, duct ectasia, duct excision

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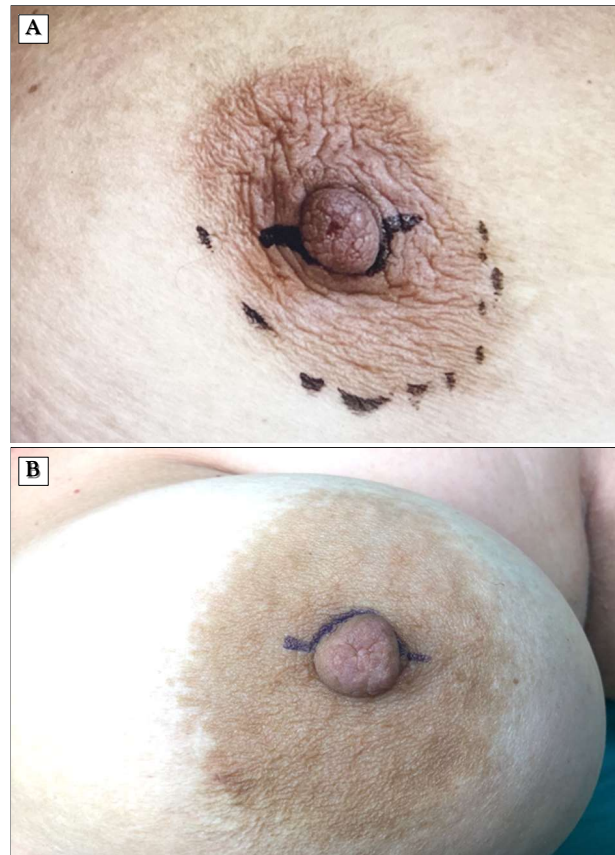
## Introduction

Breast-conserving techniques are possible in most cases of breast pathological conditions (including cancer) aiming to preserve breast, areola and nipple shape. In conditions affecting small areas (in relation to the size of the breast), it must be emphasised that oncoplastic techniques are not necessary. In general, excisions of less than 20-80 grams of tissue have no adverse cosmetic outcomes. However, in larger affected areas with more breast tissue removed, adverse cosmetic outcomes are a common finding. In general, if more than 20 percent of the pre-surgical total breast volume is removed, conventional approaches are not satisfactory to obliterate post excision cavity (1).

For certain cases approached with standard techniques, as in under nipple conditions [e.g., papillomatosis and recurrent duct ectasia (2)], conventional approaches could result in skin dimpling, distortion of breast-areola-nipple contour, and displacement of the nipple-areolar complex. These regional alterations may not be apparent for many weeks after excision.

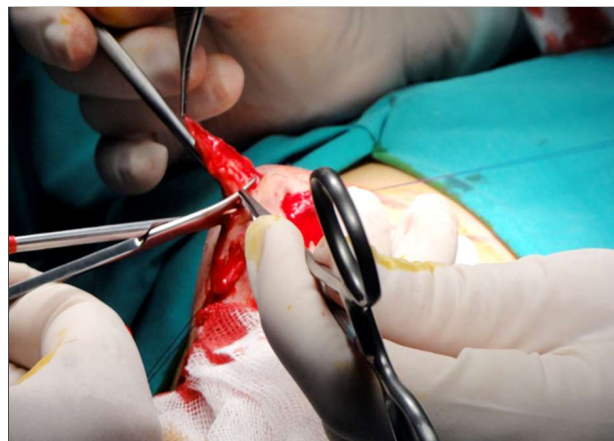
## Surgical Technique

1. Circular incision around the nipple (upper or lower half) and 1 cm horizontally right and left in the areola (modified Zervoudis's Transnipple Pyramidectomy which incises only the nipple horizontally (3) (Figs. 1A, 1B). This could be considered, also, a "major" modification of Pitanguy's technique. However, in our technique, there is minimal tissue damage and no similarity in the final result (4,5).
2. Section of the ducts from the origin (nipple) until 3-4 cm deep as a triangle (pyramid shape (Fig. 2).
3. Hemostasis with bipolar diathermy.
4. Section of the ground horizontally to create two parts half circles (flaps).
5. Suture of one flap to the other as stair steps to overlap the flaps with vicryl 3/0. Repeat, if necessary, a second step of stitches, creating two levels sutured flaps.

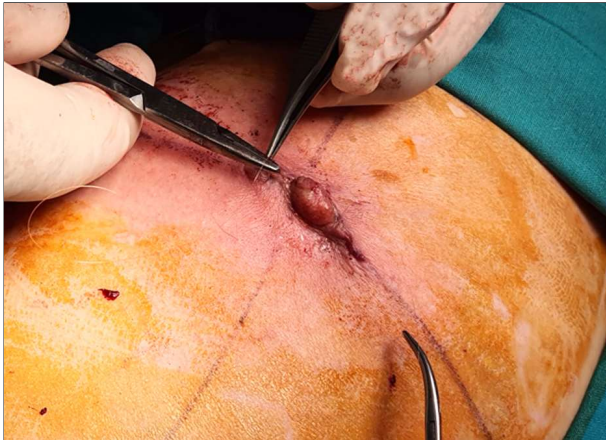


**Figure 1.** (A) Scheduled perinipple incision (lower half). (B) Scheduled perinipple incision (upper half).

6. To suture the cavity, the remaining tissues behind the nipple are approached together with sutures placed in a figure of Greek P (Π) or "circular" stitches oversewing (like a colporrhaphy procedure). The last "circle" is



**Figure 2.** Global duct excision (like pyramid shape)



**Figure 3.** Skin incisions are sutured with dissolvable stitches



**Figure 4.** Skin incisions completely sutured (final result)

sutured to the chorion of the areola with vicryl 4/0.

7. Skin incisions are sutured with dissolvable stitches (suture areola-areola and areola-nipple with monocryl 6/0) (Figs. 3, 4).
8. Dressings are placed (compression pad and bra without drain).
9. Antibiotics: Cefuroxim or Amoxil with Clavulanic acid for 5 days.
10. A cream with hyaluronic acid is applied on the scar for one month to “decrease” it.

Full wound restoration is expected two weeks after the procedure with excellent aesthetic results (Figs. 5A, 5B).

We performed 12 cases, in 8 cases for papillomatosis, and in 4 cases for multiple duct ectasia. All cases were derived from 3 hospi-

tals (University Hospital of Ioannina, Rea Hospital, University of Goias & Arango Cancer Hospital). A written informed consent form was signed by the patients.

## Results

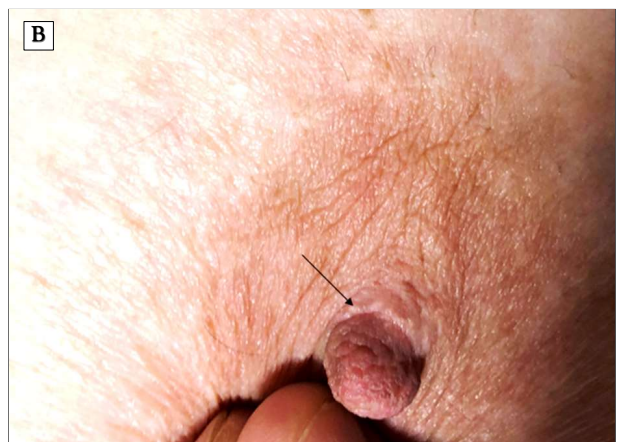
### Complications

No rejection reactions were observed [0/12 (0%)].

A slight hematoma was found in one case (1/12 (8%)).

Delayed healing was observed in one case (1/12 (8%)).

Cosmetic results assessed very good in all cases and there were excellent correlations between the “objective” assessment and the



**Figure 5.** (A) Excellent aesthetic result after perinipple incision (lower half). (B) Excellent aesthetic result after perinipple incision (upper half).

patient self-assessment of the aesthetic outcome [12/12 (100%)].

## Discussion

Mammary duct ectasia is a benign breast disorder of unknown aetiology [Wood 2021 (6)] involving terminal lactiferous ducts and surrounding tissues, commonly presenting with nipple discharge and skin retraction, with a palpable mass. In severe cases, as the disease progresses with more ducts and surrounding tissues involved, inflammatory changes may occur. The usual approach of the condition is conservative. However, in severe cases mentioned above, surgery could be necessary with complete excision of the involved ducts and the peripheral inflamed tissues [e.g., with Hadfield procedure (7,8)]. Similarly, such excisions could be necessary in papillomatosis (multiple papillomas). Such tissue removals could result in cosmetic problems due to tissue defects.

Furthermore, microdochectomy (9) was considered as the “gold-standard” for definitive diagnosis and treatment of persisting nipple discharge (10), although the method could “over-treat” many cases that are self-limited.

In this study, we describe a new mini-invasive procedure of terminal lactiferous ducts excision with a perinipple approach (Zervoudis technique). Anatomically, a large percentage of lactiferous ducts reside close to the skin surface of the nipple and, surgically, there are about 9 to 12 major ducts. Thus, with a perinipple incision of the lower or upper half of the nipple, these ducts could be successfully approached avoiding the much more extensive periareolar incision. In other perinipple procedures, the lower half of the nipple is mainly preferred (11). With careful and minimally haemorrhagic approach, the majority of lactiferous ducts can be removed. We published a few years ago another technique for selected resection of a pathological duct in case of papilloma or single duct

ectasia. The technique called “transnipple pyramidectomy is available for one or two pathological ducts [Zervoudis et al 2007 (5)]. When a radical dochectomy is necessary, another technique should be performed. We described a variant technique of Hadfield radical ductectomy with a perinipple incision.

## Conclusion

We describe a new mini-invasive procedure of terminal lactiferous ducts excision with a perinipple approach without major surgical complications and excellent aesthetic results.

## Conflict of Interest

The authors declare that they have no conflict of interest.

## Ethics Approval

Ethics approval was obtained by the Scientific Committees of the Hospitals.

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