

## LEFT SUBCUTANEOUS TOTAL MASTECTOMY WITH SENTINEL NODE FOR DUCTAL CARCINOMA IN SITU WITH IMMEDIATE BREAST RECONSTRUCTION BY PROSTHESIS AND SYMMETRIZATION OF THE RIGHT BREAST BY ENLARGEMENT PROSTHESIS: A CASE REPORT

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### ABSTRACT

We report the case of a 52-year-old female patient, postmenopausal for 7 years, who consulted us for left mastodynia, with small breasts on clinical examination, in whom the diagnosis of ductal carcinoma in situ of the left breast was retained. We performed a total subcutaneous mastectomy, removing the nipple-areolar plate, harvesting two sentinel lymph nodes and two non-sentinel lymph nodes, placing a vicryl plate, immediate reconstruction of the left breast using a 325 cc prosthesis and symmetrization of the right breast by mastopexy using a 250 cc enlargement prosthesis, with a satisfactory final result for our patient.

**KEYWORDS:** Ductal carcinoma in situ of the breast; total subcutaneous mastectomy; sentinel node; non-sentinel node; breast reconstruction; breast prosthesis.

### INTRODUCTION

Ductal carcinoma in situ (DCIS) is a proliferation of malignant cells in the ductal structures of the mammary gland without crossing the basal lamina.

It is often discovered on mammography by the presence of microcalcifications. The overall prognosis is good, but invasive local recurrence can lead to late metastases. Basic treatment is conservative surgery with radiotherapy, but mastectomy is sometimes necessary in cases of lesion extension, multicentricity or small breasts. Axillary curage is contraindicated. Sentinel lymph node sampling is recommended where there is a potential risk of microinvasion, especially in the case of extensive, high-grade lesions. The main risk factors for local recurrence are young age ( $\leq 40$  years), incomplete excision, and high nuclear grade with comedonecrosis.

### CASE REPORT

52-year-old patient, postmenopausal for 7 years, presenting with left mastodynia. Mammography showed punctiform calcifications grouped in clusters at the junction of the upper quadrants of the left breast. There are no suspicious nodular or cystic lesions, and no axillary adenopathy on breast ultrasound. The left breast

is classified as ACR BI-RADS 4. Examination of the right breast was unremarkable.

The biopsy of the left breast showed scattered foci of compact carcinoma in situ of intermediate nuclear grade, with no invasive lesions within the limits of the samples submitted.

No lesion suspected of malignancy on TAP scan.

After subcutaneous injection of nanocolloid at 4 cardinal points of the left breast, scintigraphy revealed two focal hyperfixed foci on the extension of the left axillary chain, the hottest of which, closest to the tumour, was marked on the skin.

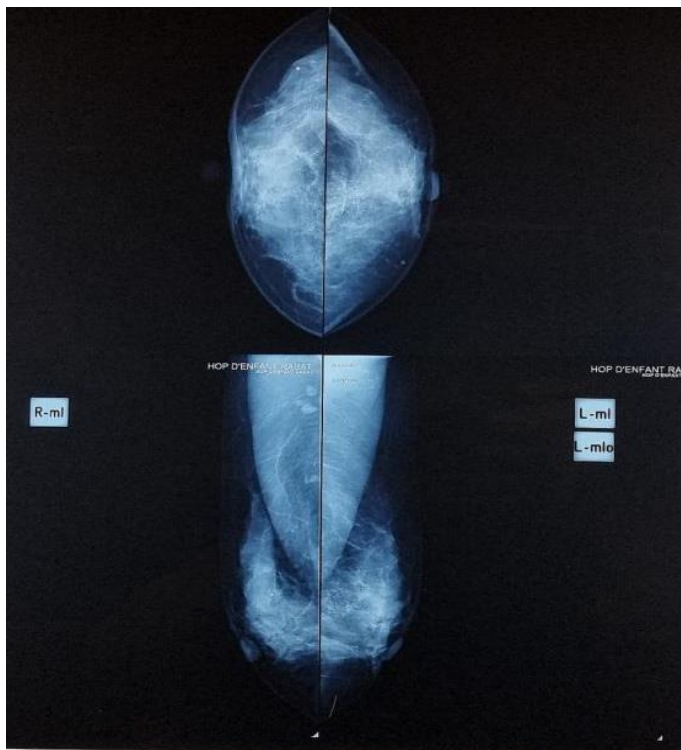
After discussion at a multidisciplinary coordination meeting, we performed a total left subcutaneous mastectomy, removing the nipple-areolar plate with isotopic detection of the sentinel node by gamma probe, and excision of two sentinel nodes and two non-sentinel nodes, placement of a vicryl plate and immediate reconstruction of the left breast using a 325 cc prosthesis and symmetrization of the right breast by mastopexy using a 250 cc enlargement prosthesis after incision

under the right breast fold and repair of the retromuscular lodge.

Anatomopathology of the surgical specimens showed  
 - Morphological appearance of a compact, cribriform intracanal carcinoma of high nuclear grade, with necrosis measuring 2.3 cm in the largest focus.  
 - No invasive elements.

- Deep border at 0.2 cm.
- Nearest lateral border greater than 0.5 cm.
- Sentinel lymph nodes: 04N-/04N.
- pTisNsn0 (AJCC 2017).

Post-operative follow-up is straightforward, with a satisfactory result for the patient.



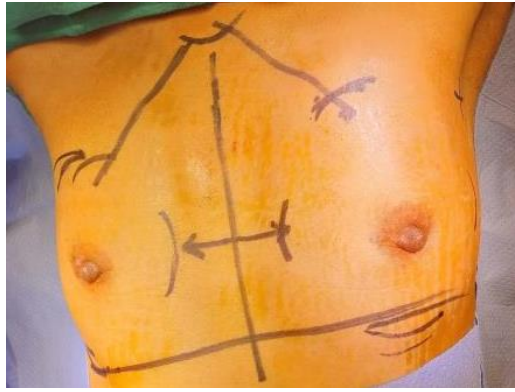
**Figure 1: Mammogram of the left breast showing punctiform microcalcifications grouped in clusters at the junction of the upper quadrants.**



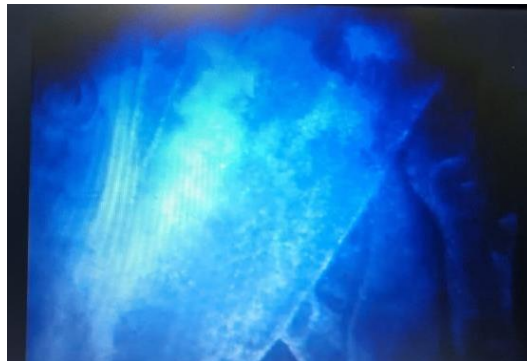
**Figure 2: Initial appearance of the patient's two small breasts.**



**Figure 3: Isotopic identification of the sentinel lymph node. The warmest and closest node marked to the skin.**



**Figure 4: schematic before the operation.**



**Figure 5: Isotopic detection of two sentinel lymph nodes by gamma probe.**



**Figure 6: Identification and removal of two sentinel nodes and two non-sentinel nodes.**



**Figure 7: Two sentinel lymph nodes and two non-sentinel lymph nodes sent for anatomopathological examination.**



**Figure 8: Total left subcutaneous mastectomy, with removal of the nipple-areolar plate.**



**Figure 9: The left breast total mastectomy specimen, identified by two threads on the upper side and one thread on the inner side, sent for anatomopathological study.**



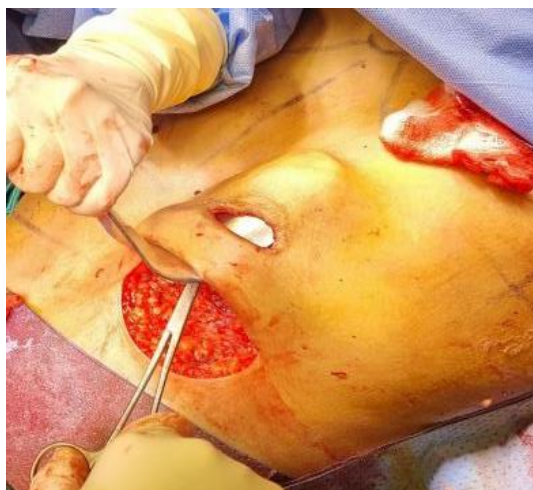
**Figure 10: Results after subcutaneous mastectomy.**



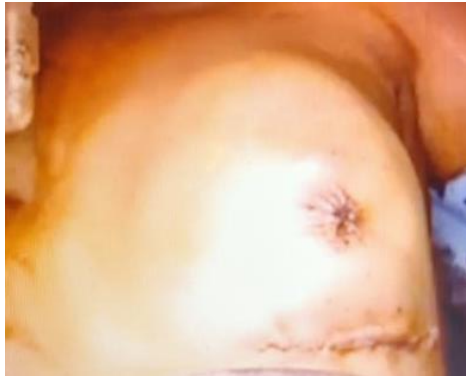
**Figure 11: Vicryl plate installation.**



**Figure 12: immediate reconstruction of the left breast with the 325 cc prosthesis.**



**Figure 13: Location of the prosthesis.**



**Figure 14: Result after reconstruction of the left breast.**



**Figure 15: incision under the right mammary fold.**



**Figure 16: Symmetrization of the right breast by mastopexy using a 250 cc enlargement prosthesis.**



**Figure 17: Final result after symmetrization.**

#### **DISCUSSION**

CCIS corresponds to the first stage of breast cancerization, midway between atypical ductal hyperplasia and invasive cancer.<sup>[1]</sup>

Most of the time, the lesion is not palpable and patients are asymptomatic.<sup>[2]</sup> CCIS is often diagnosed following a screening mammogram showing microcalcifications.<sup>[3]</sup>

CCIS corresponds to real tumour proliferations, but localized within the galactophoric ducts, thus not

crossing the basement membrane.<sup>[4]</sup> The pathologist must specify: architectural type (micropapillary, cribriform, massive or comedocarcinoma), nuclear grade (low, intermediate or high), presence or absence of necrosis, histological size (maximum dimensions in mm), status of excision margins (with measurements).

CCIS is a specific anatomico-clinical entity requiring specific management. In most cases, the standard treatment consists of partial mastectomy combined with adjuvant irradiation. The main risk factor for recurrence is the status of the excision margins, currently set at 2 mm.<sup>[5]</sup> This threshold is controversial, given the high rate of positive excision margins and consequent revision surgery in CCIS. According to several recent studies, a higher threshold (10 mm) should be recommended.<sup>[6,7,8]</sup> Surgical dilemma between quality carcinological resection with healthy excision margins and aesthetic results.

CCIS is treated surgically. Conservative treatment (partial mastectomy) is proposed if technically feasible, or radical treatment (total mastectomy) if necessary. In the case of partial mastectomy, if the margins are healthy, adjuvant radiotherapy is given to the operated breast. The decision to undergo radical treatment is favoured by several parameters<sup>[7]</sup>, often linked to the risk of recurrence: young age<sup>[9,10]</sup>, low breast volume, family history, genetic mutation, patient choice. Age plays a role in the risk of recurrence<sup>[11]</sup>, and the prognosis is poorer in younger women. Radical treatment is also favoured by the characteristics of the lesion: multicentricity, high risk of micro-invasion. The size of the lesion increases the risk of microinvasion.<sup>[12]</sup> If the lesion is palpable, histological lesions often extend beyond the macroscopic limits of the lesion.<sup>[13]</sup>

Histologically, nuclear grade is an important prognostic factor<sup>[14]</sup>, as is the presence of comedonecrosis<sup>[15]</sup>, since it is associated with a risk of microinvasion.<sup>[16]</sup>

Total mastectomy may be indicated when the margins of healthy tissue are strictly less than 2 mm after conservative surgery, or after unsatisfactory surgical resection of the margins depending on the volume of the breast<sup>[5]</sup>, or in the case of extensive and/or multifocal lesions, or at the patient's request (often in the context of a BRCA1 or BRCA2 mutation), in which case the sentinel lymph node(s) must be removed, as the risk of micro-invasion increases beyond a lesion size of 2.5 cm.<sup>[17]</sup> For this reason, it is essential, in the case of partial mastectomy, to choose an incision bearing in mind the risk of secondary mastectomy, and consequently to include it in the skin resection territory in the case of total mastectomy, which may be envisaged in conjunction with immediate breast reconstruction with preservation of the skin sheath. Total mastectomy is also indicated in the event of recurrence of CCIS.<sup>[5]</sup> Breast reconstruction may be immediate or deferred.

Pure CCIS does not lead to lymph node metastases, but there is a risk of finding one or more micro-invasive or invasive foci on the final pathological specimen. This risk is mainly correlated with lesion size and high nuclear grade. Axillary curage has been almost completely abandoned.

Sentinel lymph node sampling is justified in the case of mastectomy and sometimes in the case of conservative surgery, but with radiological or clinical aspects suggesting the possibility of invasion.<sup>[17]</sup>

CCIS irradiation is modelled on that of invasive cancer, generally delivering a dose to the breast of 50 Gy in 25 fractions of 2 Gy, with or without a pericatricial boost of 10-16 Gy. Lymph node irradiation is never performed.

There are many risk factors for recurrence of CCIS after surgery. Young age<sup>[9,10]</sup>, absence of adjuvant irradiation, nuclear grade<sup>[18,19,20]</sup>, tumour size, presence of comedonecrosis<sup>[15]</sup> and invasive excision margins are the most frequently found factors.

Different surgical techniques have been described for each tumour location, quadrant by quadrant.<sup>[21]</sup> The aim is to pass widely and more easily away from the tumour margins. These different techniques are classified into two levels. Level I is defined by exeresis of less than 20% of the gland and the absence of skin exeresis; level II concerns glandular exeresis of between 20% and 50%, requiring skin exeresis and secondary symmetrization.

CCIS is an indication of choice for level I and II oncological techniques. In contrast to invasive carcinomas, there are few data in the literature concerning oncoplasty in CCIS.<sup>[22]</sup>

In CCIS, both surgical approaches should be considered preoperatively: either conservative surgery with level I or II oncoplasty, or total mastectomy with possible immediate reconstruction. Careful selection of patients eligible for either surgical strategy should be recommended, to limit the need for iterative surgical procedures and guarantee carcinological safety.

In our described case, the patient has CCIS with small breasts, we performed a total left subcutaneous mastectomy removing the areolar-nipple plate with excision of two sentinel nodes and two nonsentinel nodes, immediate reconstruction of the left breast with a 325 cc prosthesis, and symmetrization of the right breast by mastopexy using a 250 cc enlargement prosthesis.

## CONCLUSION

Ductal carcinoma in situ is a malignant cell proliferation within the galactophore ducts, often asymptomatic, most often discovered following a screening mammogram showing microcalcifications. Treatment is surgical with adjuvant radiotherapy. Total subcutaneous mastectomy in the case of small breasts, with removal of the sentinel

lymph node and immediate reconstruction of the operated breast with symmetrization of the contralateral breast, gives a satisfactory aesthetic and psychological result for the patient.

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