

Infraclinal Breast Cancer about a Case

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Abstract

Case Report

Infraclinal breast cancer is a cancerous lesion discovered incidentally during mammography for another reason, or during routine screening, when clinical examination of the breasts and lymph nodes is normal. Breast cancer is the most common cancer in women worldwide, and is a general disease for which there is currently no means of primary prevention, since its etiology is multifactorial and not completely understood. Early detection of breast cancer is of paramount importance in reducing the high death rate from this condition. Mammography remains the most sensitive and specific examination for detecting subclinical breast cancer. The management of patients with infraclinal mammographic abnormalities requires close collaboration between the radiologist, cytopathologist and surgeon. Surgical treatment of these infraclinal forms is mainly conservative. We report the case of a 59-year-old patient who, on mammography performed as part of the pink october screening campaign, presented with ACR type C glandular-greasy breasts, a macrocalcification with a clear center in the left superior-external quadrant, and a cluster of dusty microcalcifications in this quadrant. Breast ultrasound showed a lesional area in the left superior-external quadrant measuring 84x56 mm and containing calcifications, while the clinical examination was normal, with no axillary adenopathy. Breast MRI showed a mass-like enhancement in the superior-external quadrant of the left breast measuring 10x9x16 mm. Microbiopsy of the left breast showed a nonspecific infiltrating adenocarcinoma of SBR grade II modified by Ellis and Elston, presence of an intermediate-grade intracanal component, absence of peritumoral vascular emboli. A left tumorectomy with indocyanine green fluorescence staining and excision of two left axillary sentinel lymph nodes were performed. Anatomopathological study of the surgical specimens showed a non-proliferating, non-atypical fibrocystic mastopathy with non-lesional surgical excision limits, and the two sentinel lymph nodes were free of tumour cells. Discussion of the patient's file at the multidisciplinary coordination meeting concluded that the biopsy had removed the entire tumour focus. The patient was placed under close surveillance every three months and prescribed letrozole.

Keywords : Infraclinal Breast Cancer, Non-Specific Breast Adenocarcinoma, Ductal Carcinoma in Situ of the Breast, Indocyanine Green, Sentinel Lymph Node, Tumorectomy, Partial Mastectomy, Radiotherapy, Chemotherapy, Aromatase Inhibitors.

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INTRODUCTION

Breast cancer is the most common cancer in women worldwide in terms of incidence and mortality in both developed and developing countries [1]. It is a general disease for which there is currently no means of primary prevention, due to its multifactorial etiology. It is a pathology for which diagnostic means are currently being developed, ranging from early detection to the demonstration of infraclinal lesions. It may be curable, or at least have a better prognosis when detected early. Early detection enables conservative surgical treatment

with less psychological and medical burden, and a better prognosis for the patient.

Organized breast cancer screening is based on mammography [2], and its widespread use will lead to the discovery of more and more infraclinal lesions.

Infraclinal breast cancer is a cancer discovered by chance during routine screening mammography, with a normal clinical examination. It accounts for 20% of breast cancers in Western countries and the United States, thanks to the deployment of

organized screening and improved imaging techniques. Surgical treatment of these infraclinical forms is always conservative, except in the case of carcinoma in situ, where microcalcifications extend to the entire mammary gland. The indocyanine green fluorescence detection technique enables sentinel lymph node excision.

From an anatomopathological point of view, there may be a discordance between the diagnosis of malignancy on the initial biopsy and the absence of a malignant lesion on the surgical specimen, due to the fact that the biopsy has removed the entire tumor focus in the case of a small tumor.

Adjuvant treatment with radiotherapy, chemotherapy or hormone therapy is required after conservative surgery.

CASE REPORT

59-year-old patient, gravida 2, para 2, treated for dermatomyositis under corticosteroid therapy, presented at screening mammography, as part of the pink october screening campaign, with American College of Radiology (ACR) type C glandular-greasy breasts in terms of breast density, a macrocalcification with a clear center, following a vascular pathway, in the left superior-external quadrant (SEQ), benign in appearance, and a focus of dusty microcalcifications in the left SEQ, grouped in clusters in this quadrant, no architectural distortion, and no thickening of the subcutaneous tissue or nipple retraction.

Mammary ultrasonography showed a lesional area in the SEQ of the left breast at 2h and 3cm from the nipple, hypoechoic, attenuating, poorly limited, with blurred contours and a long vertical axis, containing calcifications, measuring 8x56 mm, dilatation of the right retromammary milk ducts measuring 5 mm in diameter, with echogenic content, absence of any suspicious nodular or cystic lesion of the right breast, absence of skin thickening and absence of axillary adenopathy. The breasts were classified as ACR BI-RADS III for the right breast, and ACR BI-RADS IVc for the left breast.

Clinical examination revealed symmetrical breasts with no palpable tumor and no axillary adenopathy.

MRI of the left breast shows a mass-like enhancement at the level of the SEQ of the left breast, poorly limited with regular contours in diffusion-restricting T1 and T2 hyposignal, intensely enhanced at early time after gadolinium injection according to a type 2 curve, measuring 10x9x16 mm, located 15 mm from the pectoralis major muscle and 66 mm from the nipple. A contiguous cystic lesion measuring 4x5 mm in T1 hyposignal and T2 hypersignal, non-enhanced, is associated with a few infracentimetric left axillary lymph nodes, the largest of which measures 8 mm in minor axis.

In the right breast, right retromammary ductal ectasia with fluid content in T1 hyposignal measuring 5.6 mm, nodular mass-like enhancement in T1 hyposignal, T2 hypersignal and diffusion, enhanced after injection in connection with an intramammary node.

Microbiopsy of the SEQ of the left breast yielded 05 fragments, including 04 cores and one microfragment, with the smallest measuring 0.6 cm and the largest 1 cm, showing non-specific infiltrating adenocarcinoma of SBR grade II modified by Ellis and Elston, presence of intermediate-grade cribriform ductal carcinoma in situ with necrosis, absence of peritumoral vascular emboli, positive estrogen and progesterone hormone receptors.

Thoraco-abdomino-pelvic scanner showed no secondary localizations.

The patient's case was discussed at a radiology staff meeting. Bilateral ductal dilatation, predominantly on the right, with echogenic content in places not vascularized by Doppler, was associated with lactation retention, which needed to be monitored.

After a multidisciplinary coordination meeting, a tumorectomy of the left breast with detection of the sentinel lymph node using indocyanine green was performed.

Subcutaneous periareolar injection of 4 ml of indocyanine green, visual follow-up of the lymphatic path to the axillary fossa, 1.5 cm vertical anterior axillary skin incision, fluorescence identification of two sentinel lymph nodes, with removal of these nodes; verification of the axillary fossa shows absence of fluorescence after removal of the two sentinel lymph nodes. A left partial mastectomy was performed using an external oblique skin incision, with a skin flap over the tumor at SEQ level, haemostasis and placement of 4 clips in the tumor bed after tumorectomy. Radiography of the surgical specimen showed a small opacity in place. The operation went off without a hitch, the post-operative follow-up is simple.

Anatomopathological examination of the surgical specimens showed a non-proliferating, non-typical fibrocystic mastopathy, with non-lesional surgical excision limits, and both sentinel lymph nodes were free of tumor cells and micrometastases.

The patient's case was discussed again at a multidisciplinary coordination meeting, which concluded, after rereading all the surgical specimens sent for anatomopathological study, that the biopsy had removed the entire tumor focus, given that it was a small tumor measuring 10x9x16 mm on breast MRI, with the decision to closely monitor the patient every three months and hormone therapy with letrozole as adjuvant treatment.



Figure 1 : breast ultrasound showing a lesional area in the superior-external quadrant of the left breast at 2 h and 3 cm from the nipple, hypoechogenic, attenuating, poorly limited, with blurred contours and a long vertical axis, containing calcifications, measuring 84x56 mm.

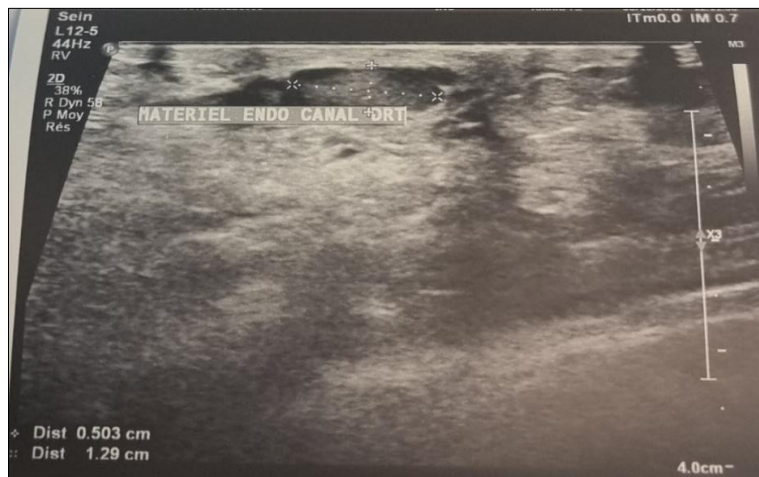


Figure2 : mammary ultrasound showing dilatation of the right retromammary galactophoric ducts measuring 5 mm in diameter, with echogenic content.

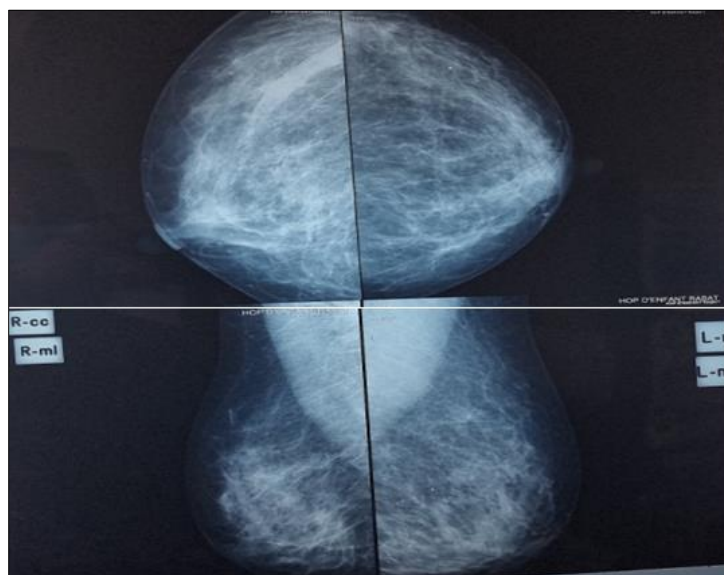


Figure 3 : mammography showing a macrocalcification with a clear center following a vascular path in the left superior-external quadrant, with a benign appearance, and a focus of dusty microcalcifications grouped in clusters in the same quadrant.

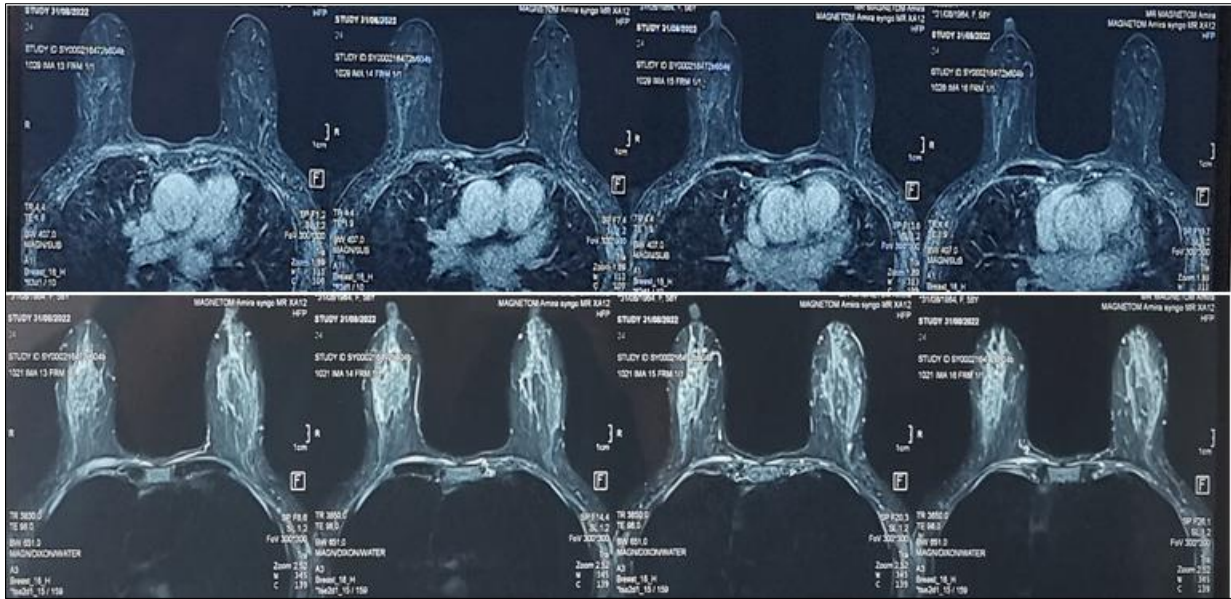


Figure 4 : Breast MRI showing a mass-like enhancement in the superior-external quadrant of the left breast, poorly defined with regular contours measuring 10x9x16 mm, located 15 mm from the pectoralis major muscle and 66 mm from the nipple, a few infracentimetric left axillary nodes, the largest of which measures 8 mm in minor axis.



Figure 5 : preoperative skin marking of the tumor on the left breast.

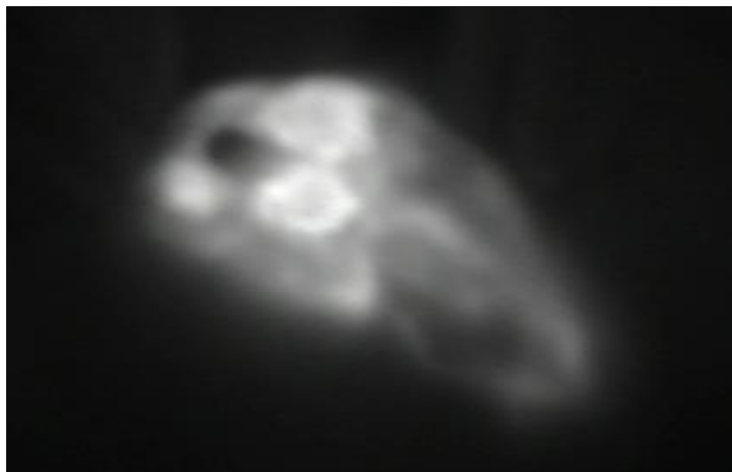


Figure 6 : fluorescence detection of two sentinel nodes in the left axillary fossa.

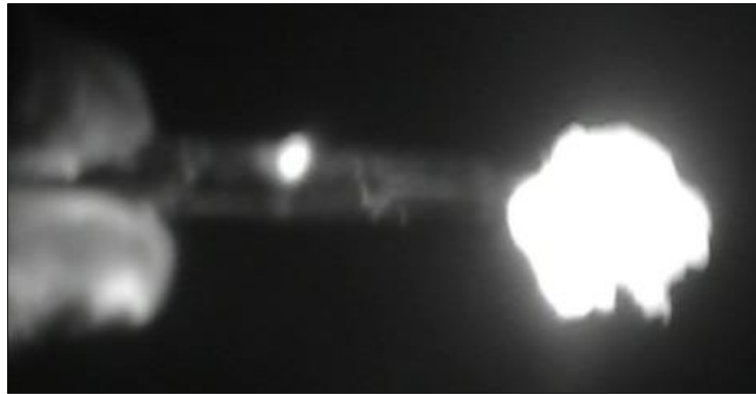


Figure 7 : checking the fluorescence of the first sentinel lymph node after removal.

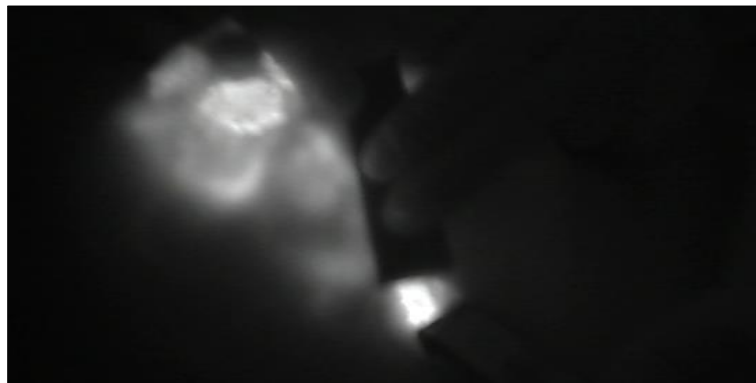


Figure 8 : fluorescence detection of the second sentinel node in the left axillary fossa.

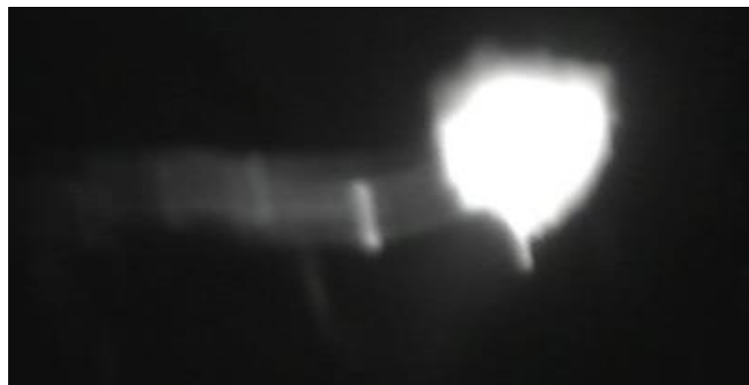


Figure 9 : checking the fluorescence of the second sentinel lymph node after removal.

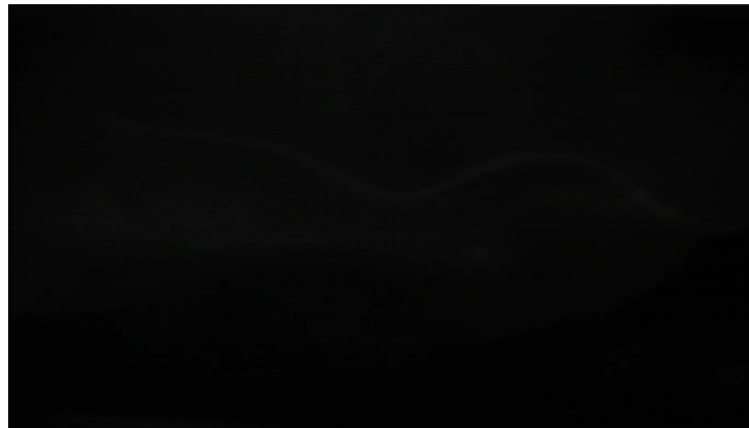


Figure 10 : verification of the absence of fluorescence in the left axillary fossa after removal of two sentinel lymph nodes.

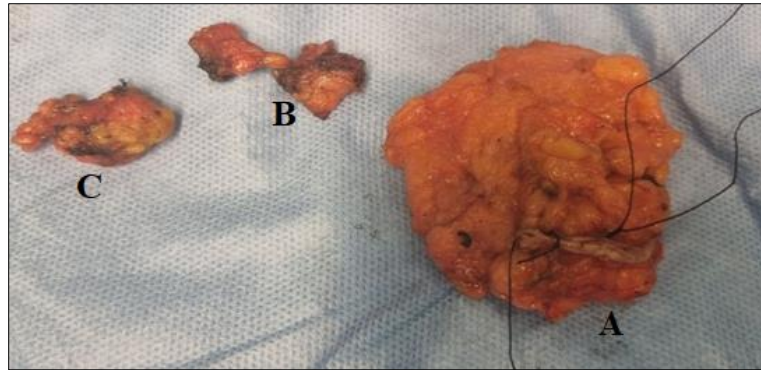


Figure 11 : surgical specimens sent for anatomopathological study : tumorectomy(A) oriented by one wire at the internal angle and two wires at midday. First sentinel node (B), second sentinel node (C), detected by indocyanine green fluorescence.

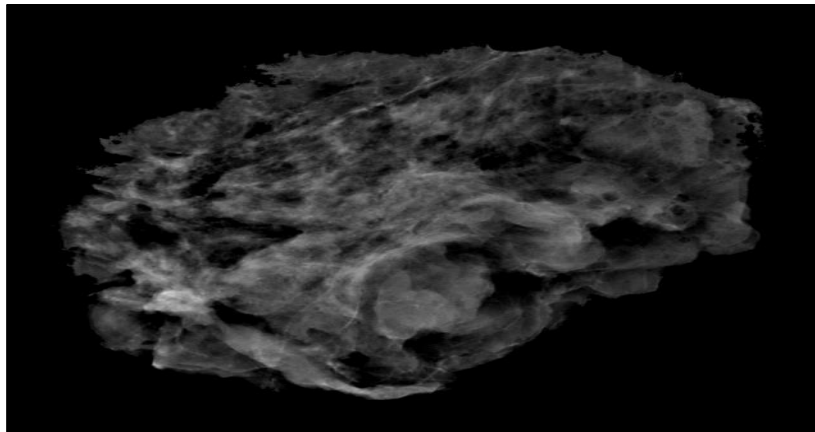


Figure 12 : peroperative radiography of the left tumorectomy specimen.



Figure 13 : skin closure after tumorectomy by external oblique skin incision in the left superior-external quadrant.



Figure 14 : the final aesthetic result at the end of the intervention.

DISCUSSION

Breast cancer is the most common cancer in women, with over 1.6 million cases worldwide each year. In Morocco, 40,000 new cases of cancer are diagnosed each year, according to the Ministry of Health [3]. Breast cancer is the most common cancer among women, accounting for 36% of cases [3].

Invasive or infiltrating cancer accounts for over 90% of all histological types of breast cancer [4]. The most common breast cancer (95%) is adenocarcinoma, which develops from the epithelial cells of the mammary gland. Infiltrating carcinoma includes the common infiltrating ductal carcinoma (IDC) (81%), IDC with predominantly intraductal component (4%), infiltrating lobular carcinoma (10%), which is usually bilateral, and even rarer forms. Non-specific infiltrating carcinoma is the most common histological type of breast cancer, accounting for around 80% of all cancers, and its clinical and radiological presentation differs according to grade of differentiation [5].

Infraclinical breast cancer is a cancerous lesion, or a lesion strongly suspected of being cancerous, discovered by chance during mammography for another reason, or during routine screening, when clinical examination of the breasts and lymph nodes is normal. In a retrospective descriptive study of 22 cases of infraclinical breast cancer over a 10-year period in Morocco, the frequency of infraclinical breast cancer was 0.98% [6].

Mammography is used to screen for breast cancer in women with no symptoms of breast pathology

[7]. The steady increase in the rate of infraclinical cancers is linked to the roll-out of organized screening and improvements in imaging techniques, leading to the discovery of ever-smaller infraclinical lesions.

A certain number of quality criteria must be respected, both in the production of mammography images and in their reading: availability of a dedicated view box, correct positioning of images, double reading, etc. [8]. Several studies have shown variability in the interpretation of mammographs [9, 10], and the importance of training [11].

A new approach to mammography interpretation is now widely adopted. Radiologists are encouraged to use one of five final Breast imaging reporting and data system (BIRADS) assessment categories for their descriptions of breast lesions, based on the positive predictive value of mammographic findings.

ACR BIRADS classification: ACR 0: when nothing can be concluded from the examination: investment is required (compare with a previous image, enlarge, locate, further examination). ACR 1: normal mammogram. ACR 2: images certainly benign. ACR 3: probability of malignancy less than 2%, stricter mammographic surveillance, two controls spaced 6 months apart and one annual control or histological verification. ACR 4: indeterminate or suspicious images requiring biopsy verification. ACR 5: images suggestive of cancer, undertake appropriate treatment. ACR 6: when there is histological evidence of malignancy, cancer already under treatment. LEGAL classification of microcalcifications [12]:

Tab. 1

Type	Radiological aspect	% of cancer
I	annular or arciform.	0%
II	punctiform, regular (round).	19%
III	dusty.	39%
IV	irregular punctiform (crystalline).	59%
V	vermicular or rods.	96%

The risk of malignancy is increased if microcalcifications are numerous (>20) grouped in clusters, polymorphic, or with a topography reproducing a geometric shape (triangle, quadrant).

The BI-RADS mammographic lexicon describes abnormalities encountered in mammography according to the images encountered: masses, calcifications, architectural distortion, special cases, and associated findings [12]. Four types of breast density are distinguished according to the BI-RADS mammographic classification [13], type 1: the breast is almost entirely fatty (greasy), type 2: there are scattered fibroglandular opacities (heterogeneous greasy) (25 to 50% gland), type 3: the breast tissue is dense and heterogeneous (heterogeneous dense), which could make it difficult to

detect small masses (51 to 75% gland), type 4: the breast tissue is extremely dense (homogeneous dense).

Mammography is the reference imaging test, whether performed as part of screening for asymptomatic women, or as part of a diagnostic work-up in the event of an abnormal clinical examination. Three types of images should be sought: opacities, calcifications and architectural ruptures [14].

Mammary ultrasound enables analysis of the rest of the mammary gland when microcalcifications are found, and is indicated in cases of architectural disorganization suspicious of malignancy in dense breasts, enabling ultrasound-guided biopsy and other interventional procedures [15]. It is used to characterize

a mass detected by mammography, and also in normal breasts with dense, non-radiolucent tissue [16].

Ultrasound provides more information in areas of increased density in young women, and in cases of cystic tumors, to differentiate between solid and liquid [17]. A recent study shows that the sensitivity of ultrasound in young women is significantly better than that of mammography [18].

Magnetic resonance imaging (MRI) screening is not recommended except in a selected population yet to be defined [19]. MRI of the breast must be performed bilaterally, and is designed to detect abnormal neoangiogenesis developed by the malignant tumor to ensure its growth. Injection of gadolinium reveals abnormal, early and intense focal contrast [14].

The diagnosis of malignancy can be confirmed on biopsy material. Histological sections can be used to confirm the infiltrative nature of a tumour and to specify its histopronostic grade. More samples are needed, and needles of sufficient calibre should be used to improve the sensitivity of the method [20]. Ultrasound microbiopsy is a high-performance technique with its limitations, which are rare in the case of fibrous breasts, very small lesions or subtle images [21].

The recommendations for stereotactic macrobiopsies are reserved for sub-clinical lesions classified as ACR 4 and, depending on the context, ACR 3. ACR 5 lesions are classically operated on by harpooning and then excision [22, 23]. Macrobiopsies should be performed in order to obtain histology for isolated microcalcifications or infracentric lesions classified as ACR 5. In such cases, an extemporaneous examination cannot be performed [24].

The practice of sentinel lymph node research in the management of infiltrating malignant lesions has led to a broadening of biopsy indications for ACR 5 lesions.

Microbiopsies using 11 to 18 G needles, performed either stereotactically or under ultrasound guidance, require several passes, on average 4 for opacities and 9 to 13 for microcalcifications [25, 26].

The management of detected infraclinical breast lesions is currently standardized, based on the ACR's BI-RADS classification, which guides treatment according to the probability of malignancy of the images [27]. For BI-RADS 4 and 5 lesions, percutaneous biopsy is recommended to clarify the diagnosis. The choice between the two sampling methods, microbiopsy or macrobiopsy, depends on the semiological elements of the imaging. Microbiopsies are best suited to nodular images (opacities), while macrobiopsies are particularly well-suited to microcalcifications. In the event of malignancy detected by percutaneous sampling, additional surgical exeresis is performed, as the first step

in locoregional treatment of these lesions. This exeresis, generally conservative for small lesions, will be preceded, in the case of non-palpable lesions, by the radiologist using a wire or injecting a dye (patent blue) or radioisotope (ROLL), which will enable the surgeon to target his breast surgery.

The most commonly used location technique for non-palpable breast tumors is harpoon location [28]. The major disadvantages of this technique are the risk of malpositioning of the harpoon by the radiologist and the risk of secondary displacement of the harpoon before or during surgery [28].

Despite the development of all these techniques, there are situations where histological examination of the surgical specimen does not confirm the type of lesion described during percutaneous sampling, especially in the case of very small images. There may be a discordance between the diagnosis of malignancy on the initial biopsy and the absence of cancer on the surgical specimen. This rate of white surgical specimens varies from 0 to 5% in the literature [29]. Faced with such false-positive biopsies, the question arises as to how to proceed.

True biopsy false-negatives are exceptional [30], and the rare cases described corresponded to lesions found on previously treated breasts (cytosteatonecrosis after previous surgery and/or radiotherapy), or even highly proliferating benign lesions (florid adenoma). A re-reading of the biopsy slides in the light of the histology described on the surgical specimen should enable the diagnosis to be rectified, if necessary by recalling the patient's previous breast history.

In front of a white specimen with a positive initial biopsy, an analysis of the management chain must be carried out, with a critical evaluation of all steps from the initial imaging. The causes of discordance are classified into three categories: lesion resected entirely by percutaneous biopsy, failure of excision, or biopsy misinterpretation (true false positive biopsies).

Adjuvant radiotherapy of these small lesions removed completely by macrobiopsy remains an unresolved question at present. It reduces the risk of local recurrence after conservative surgery, but the absolute benefit of this for very small and therefore low-risk lesions is less [30].

Indocyanine green is a water-soluble dye with hepatic elimination and biliary excretion. When illuminated by an infrared laser source, indocyanine green emits fluorescent light in the near-infrared spectrum that is invisible to the naked eye, but can be visualized using a near-infrared camera. It is injected subcutaneously to map the lymphatic network. It is used to locate the sentinel lymph node in breast cancer patients undergoing senological surgery and breast

reconstruction, but it has not yet replaced isotope marking, which remains the reference technique. Its use in senology has opened up new perspectives [31].

Axillary lymph node status is a major prognostic factor in breast cancer [32]. Axillary sentinel node exeresis and analysis is recommended in the absence of suspicious axillary adenopathy [33]. Technetium-99m isotope labeling is the reference technique for locating the sentinel lymph node [34], requiring a nearby nuclear medicine department and an injection of radioisotope the day before or the morning of the procedure. Sentinel node identification using indocyanine green is an alternative to isotope marking [35, 36].

Studies have compared technetium-99m isotope labeling and indocyanine green fluorescence in sentinel node search, with comparable detection rates for both methods [37]. The combination of these two techniques is clearly superior to the use of radioisotope alone [38, 39]. Indocyanine green can be used when technetium-99m is not available, or in combination with technetium-99m to increase the sensitivity of the procedure [37].

Indocyanine green could be used to guide the excision of non-palpable breast tumours [40, 41]. Injected directly into the center of the tumor under ultrasound control, indocyanine green would enable non-palpable breast tumors to be localized in the operating room, and limit unnecessary excision of healthy tissue.

In overweight woman, the search for the sentinel node using indocyanine green fluorescence may be more difficult than with isotope marking [42, 43]. In addition, indocyanine green fluorescence is attenuated by tissue, making it difficult to use in overweight woman.

Early detection of non-palpable breast lesions can increase breast-conserving surgery without compromising survival [44]. The quality of preoperative location of infraclinical lesions is fundamental, guaranteeing the outcome of surgery in terms of both carcinology and aesthetics [45, 46]. The most commonly used preoperative location technique today consists of a guide wire (harpoon, metal guide, etc.) positioned by a radiologist under ultrasound or mammography, depending on the type of lesion: mammography in the case of a focus of microcalcifications without ultrasound translation, and ultrasound in the case of an echogenic nodule.

The standard of care for patients with breast cancer calls for multimodal treatment, involving mainly conservative surgery, adjuvant chemotherapy and locoregional radiotherapy for all patients treated, hormone therapy whenever hormone receptors are positive, and, more recently, targeted therapies, which

represent a real advance in improving the prognosis of patients overexpressing the HER2 oncoprotein. The combination of all these therapeutic options offers a clear improvement in survival.

Surgery on non-palpable cancers requires the placement of an intramammary guide, which can be performed either in radiology or, in some centers, in nuclear medicine. Wire placement should always be close to the nodule, to facilitate the surgeon's procedure, and whenever possible, the wire should be placed under ultrasound guidance. Wire placement is associated with the drawing of a cross on the skin in line with the nodule in the operating position, indicating the depth of the nodule below the cross. Leads are often placed on the wire and on the nipple, and a mammography of the face and profile is taken with the wire in place. This procedure can be performed with or without local anesthesia. It is advisable to fix the wire to the skin, as cases of significant wire migration via the retroglandular fatty space have been reported. This technique has its drawbacks [46, 47], positioning the guide wire is not always technically straightforward, particularly in the case of dense breasts; once positioned, the guide wire may move before and during surgery, complicating the surgical procedure.

Using this technique, tumorectomy with healthy margins is not always a straightforward surgical procedure. A good spatial representation of the intraglandular portion of the lesion, not emerging from the harpoon, is essential to guide the resection. A sufficiently large resection of tissue, relative to the size of the lesion, is necessary to obtain an in sano resection. In addition, insertion of the guide wire is often painful and a source of discomfort for the patient. Isotopic localization of infraclinical breast lesions (Trilim) or radioguided occult lesion localization (ROLL) techniques are now considered new alternatives to standard preoperative localization of non-palpable breast lesions [48]. These techniques involve preoperative injection of a radioactive product (technetium 99m combined with a vector molecule) directly into the lesion under radiological control. Peroperatively, a gamma detection probe is used to locate the radioactive lesion for exeresis [45-51]. In recent years, some authors have described this technique in conjunction with the sentinel lymph node technique [52, 53].

Several principles should be observed when performing tumorectomy [54], preoperative localization of the non-palpable tumour, skin approach allowing easy monobloc exeresis of the tumor and remodelling by glandular approximation of the defect, exeresis of the tumor zone by removing the gland from the subcutaneous plane down to the prepectoral fascia, macroscopic clinical or imaging control of the lateral exeresis margins, recutting of the tumor bed opposite the zone judged to be borderline, orientation of resection specimens and recuts according to a pre-established

protocol with the pathology team, including identification of the edges likely to be resected in the event of microscopic damage, clipping of the tumor bed to facilitate targeting of radiotherapy superimpositions, approximation and suturing of the glandular edges, sometimes using a local rotation flap to avoid leaving a glandular defect. Conventional surgery is sufficient in around 80% of conservatively operated breast cancers. When the glandular exeresis cannot be filled by direct suture without leaving significant deformity, conservative surgery calls for so-called oncoplastic techniques. This involves using patterns described in aesthetic surgery to perform reduction plasty, with the chosen pattern adapted to the site of tumor removal. The surgeon aims to obtain microscopically healthy resection margins. Non-healthy resection margins are an independent risk factor for local recurrence after conservative radiosurgical treatment. The risk of local recurrence after conservative treatment is doubled if the margins are affected, and this risk is not compensated for by favorable tumor biology, the addition of hormonotherapy or radiotherapy superimposition [55].

A larger distance between the tumor and the last inked cell base does not reduce the risk of local recurrence, even in young women, or in cases of unfavourable tumor biology, in lobular cancers, or in cases of associated extensive in situ contingent. Conservative exeresis may be considered adequate and therefore does not justify revision if the definitive histological examination of the operative specimen does not reveal any tumor cells in the last inked cell base [56].

In spite of new, extended techniques, in this case therapeutic mammoplasty, enabling wide exeresis while remaining conservative, total mastectomy sometimes remains the only feasible local solution when the tumor/breast volume ratio does not allow conservative treatment, as in the case of extensive ductal carcinoma in situ [57, 58]. In invasive cancers, systemic treatment (chemotherapy or hormonotherapy) may provide a sufficient response to allow secondary conservative treatment. Total mastectomy is also indicated in the case of preoperatively diagnosed multiple tumors. The option of conservative treatment may be discussed when multiple foci are sufficiently close to one another to envisage their conservative monobloc resection in healthy margins, in which case an MRI may help to specify the extent of resection. Lastly, total mastectomy is recommended in cases of intramammary recurrence after conservative treatment, although some authors have demonstrated the possibility of a second conservative treatment in very select indications.

Radiotherapy is strongly recommended after conservative surgery. Although formal contraindications to radiation treatment are rare, such as p53 genetic abnormalities, certain circumstances may make radiotherapy difficult to perform, and should be

discussed on a case-by-case basis between the surgeon and radiotherapist, before the type of surgery is chosen: history of thoracic radiotherapy, coronary and cardiac involvement, particularly of left-sided lesions, significant respiratory insufficiency, scleroderma and lupus, mental disorders [59].

Adjuvant chemotherapy for breast cancer is a standard treatment, reducing the risk of relapse and death.

Hormonotherapy is a systemic treatment that inhibits the action of the female hormones that promote the growth of breast cancer cells, namely estrogens and progesterone, thereby reducing the rate of recurrence and death [60]. Hormonotherapy should not be administered at the same time as adjuvant chemotherapy [60].

Studies published to date show that aromatase inhibitors such as letrozole are superior to tamoxifen in terms of recurrence-free survival and metastasis-free survival in postmenopausal patients, whether prescribed at the outset or after 5 years of tamoxifen [48].

In our case, the patient underwent conservative surgery, namely tumorectomy with exeresis of two sentinel lymph nodes identified by indocyanine green fluorescence. Anatomopathology of the surgical specimens showed the absence of the malignant cells present on microbiopsy, which removed the entire tumor focus. Our patient did not benefit from post-operative radiotherapy, as she came in too late, and was put on letrozole with close medical surveillance.

CONCLUSION

Infraclinical breast cancer is usually discovered by chance during screening mammography, and has a different clinical presentation, with variable biological aggressiveness, giving it a different prognosis.

Conservative surgery for infraclinical breast cancer must be an imperative, and this means developing and promoting early diagnosis, implementing a mammography screening policy, informing and educating the public, raising awareness among healthcare professionals and training medical practitioners.

The situation of a positive biopsy with a white surgical specimen is rare, and requires multidisciplinary concertation between radiologist, surgeon and anatomopathologist in order to analyze all the steps involved in diagnosing whether this is a surgical oversight, a lesion that has been completely removed by biopsy, or an initial anatomopathological overestimation.

The constraint of managing infraclinical breast cancer is a combination of several factors, mainly the lack of widespread systematic screening and the vulnerability of the target population to early screening. Delayed diagnosis of these infraclinical tumors is a real

public health problem worldwide, particularly in developing countries.

Primary prevention of breast cancer remains difficult, given its multifactorial etiology. It is important that this cancer be included in national health policies.

REFERENCES

- Salim, E. I., Moore, M. A., Al-Lawati, J. A., Al-Sayyad, J., Bazawir, A., Bener, A., ... & Sobue, T. (2009). Cancer epidemiology and control in the arab world-past, present and future. *Asian Pac J Cancer Prev*, 10(1), 3-16.
- Hagay, C., Cherel, P., Becette, V., Ouhioun, O., de Maulmont, C., & Cvitkovic, C. (2000). Stereotactic biopsies on a dedicated table with a vacuum-assisted biopsy device (DBAA): about 300 foci of microcalcifications. 22nd National Days of the French Society of Senology and Breast Pathology. *Toulouse*, 261-75.
- Data source: Globocan 2018 Graph production: Global Cancer Observatory.
- Ravdin, P. M. (2009). Hormone replacement therapy and the increase in the incidence of invasive lobular cancer. *Breast disease*, 30(1), 3-8.
- Tardivon, A. (2016). Imaging women: senology. Cachan: *Lavoisier*, 42-3.
- Sara AIT ELFAQIR, Subclinical breast cancer, thesis in general medicine, marrakech 2023.
- Panieri, E. (2012). Breast Cancer Screening in Developing Countries. *Best Practice & Research Clinical Obstetrics & Gynaecology*, 26(2).
- Cambier, L. (2002). How to read a screening mammography (MAMMOTEST). *Journal de Radiologie*, 83(4 Pt 2), 521-528.
- Elmore, J. G., Wells, C. K., Lee, C. H., Howard, D. H., & Feinstein, A. R. (1994). Variability in radiologists' interpretations of mammograms. *New England Journal of Medicine*, 331(22), 1493-1499.
- Beam, C. A., Layde, P. M., & Sullivan, D. C. (1996). Variability in the interpretation of screening mammograms by US radiologists: findings from a national sample. *Archives of internal medicine*, 156(2), 209-213.
- Berg, W. A., D'Orsi, C. J., Jackson, V. P., Bassett, L. W., Beam, C. A., Lewis, R. S., & Crewson, P. E. (2002). Does training in the Breast Imaging Reporting and Data System (BI-RADS) improve biopsy recommendations or feature analysis agreement with experienced breast imagers at mammography?. *Radiology*, 224(3), 871-880.
- Lévy, L., Suissa, M., Bokobsa, J., Tristant, H., Chiche, J. F., Martin, B., & Teman, G. (2005). Presentation of the French translation of the Breast Imaging Reporting System and Data System (BI-RADS). *Gynecologie, Obstetrique & Fertilité*, 33(5), 338-347.
- Tabar, L., & Dean, P. (2002). Atlas of Mammography; 3EME Edition Medicine and Sciences Flammarion.
- Tardivon, A., & Malhaire, C. (2009). Breast cancer (I). Epidemiology, risk factors, imaging, Encycl Med surgery (Elsevier SAS, Paris), 34-8000-A-40.
- Tabar, L., & Dean, P. (2002). Atlas of Mammography; 3EME Medecine and Sciences Edition Flammarion.
- Lastier, D., Emmanuelle, S., & Agnès, R. « Breast cancer screening program in France: Results 2005-2006 ».
- Boisserie-Lacroix, M. (2006). Breast ultrasound: *new approaches Gynecology Obstetrics & Fertility*, 34, 1170-1177.
- Houssami, N., Irwig, L., Simpson, J. M., McKessar, M., Blome, S., & Noakes, J. (2003). Sydney Breast Imaging Accuracy Study: comparative sensitivity and specificity of mammography and sonography in young women with symptoms. *American Journal of Roentgenology*, 180(4), 935-940.
- Taourel, P. (2007). MRI and DCIS, the end of a dogma? *J Radiol*, 88, 1665-6.
- Penault-Llorca, F. (2002). coll, *Ann pathol*, 22, 150-157.
- Ernster, V. L., Barclay, J., Kerlikowske, K., Grady, D., & Henderson, I. C. (1996). Incidence of and treatment for ductal carcinoma in situ of the breast. *Jama*, 275(12), 913-918.
- Liberman, L. (2000). Clinical management issues in percutaneous core breast biopsy. *Radiologic Clinics of North America*, 38(4), 791-807.
- Barreau, B., Dilhuydy, M., Henriquès, C., Gilles, R., Valentin, F., & Audigey, I. (2001). al. Interventional imaging: indications, results and quality assessment. 23rd National Days of the French Society of Senology and Breast Pathology, *Strasbourg*, 455-73.
- European recommendations for quality assurance in the setting of mammographic screening for breast cancer. Report of pathologists of the working group "Breast Cancer Screening" of the European Union. *Ann Pathol* 1996, 16(5), 315-33.
- Velanovich, V., Lewis Jr, F. R., Nathanson, S. D., Strand, V. F., Talpos, G. B., Bhandarkar, S., ... & Ferrara, J. J. (1999). Comparison of mammographically guided breast biopsy techniques. *Annals of surgery*, 229(5), 625.
- Liberman, L., Dershaw, D. D., Rosen, P. P., Abramson, A. F., Deutch, B. M., & Hann, L. E. (1994). Stereotaxic 14-gauge breast biopsy: how many core biopsy specimens are needed?. *Radiology*, 192(3), 793-795.
- Liberman, L., & Menell, J. H. (2002). Breast imaging reporting and data system (BI-RADS). *Radiologic Clinics*, 40(3), 409-430.
- Lovrics, P. J., Cornacchi, S. D., Vora, R., Goldsmith, C. H., & Kahn moui, K. (2011). Systematic review of radioguided surgery for non-palpable breast cancer. *European Journal of Surgical Oncology (EJSO)*, 37(5), 388-397.
- Kouskos, E., Gui, G. P. H., Mantas, D., Revenas, K., Rallis, N., Antonopoulou, Z., ... & Markopoulos, C.

- (2006). Wire localisation biopsy of non-palpable breast lesions: reasons for unsuccessful excision. *Eur. J. Gynaec. Oncol.-IssN*, 392, 2936.
30. Rakha, E. A., El-Sayed, M. E., Reed, J., Lee, A. H., Evans, A. J., & Ellis, I. O. (2009). Screen-detected breast lesions with malignant needle core biopsy diagnoses and no malignancy identified in subsequent surgical excision specimens (potential false-positive diagnosis). *European Journal of Cancer*, 45(7), 1162-1167.
 31. Echaliier, C., Pluvy, I., & Pauchot, J. (2016, September). Use of indocyanine green angiography in reconstructive surgery: Brief review. In *Annales de Chirurgie Plastique et Esthétique* (Vol. 61, No. 6, pp. 858-867).
 32. Fisher, B., Bauer, M., Wickerham, D. L., Redmond, C. K., Fisher, E. R., Cruz, A. B., ... & NSABP investigators. (1983). Relation of number of positive axillary nodes to the prognosis of patients with primary breast cancer. An NSABP update. *Cancer*, 52(9), 1551-1557.
 33. Veronesi, U., Paganelli, G., Galimberti, V., Viale, G., Zurrida, S., Bedoni, M., ... & Veronesi, P. (1997). Sentinel-node biopsy to avoid axillary dissection in breast cancer with clinically negative lymph-nodes. *The Lancet*, 349(9069), 1864-1867.
 34. Krag, D., Weaver, D., Ashikaga, T., Moffat, F., Klimberg, V. S., Shriver, C., ... & Dowlatsahi, K. (1998). The sentinel node in breast cancer—a multicenter validation study. *New England Journal of Medicine*, 339(14), 941-946.
 35. Sugie, T., Kassim, K. A., Takeuchi, M., Hashimoto, T., Yamagami, K., Masai, Y., & Toi, M. (2010). A novel method for sentinel lymph node biopsy by indocyanine green fluorescence technique in breast cancer. *Cancers*, 2(2), 713-720.
 36. Guenane, Y., Gorj, M., Nguyen, V., Revol, M., & Mazouz-Dorval, S. (2016, June). Evaluation of green indocyanine interest compared to Technetium in sentinel lymph node detection in breast cancer. In *Annales de Chirurgie Plastique et Esthétique* (Vol. 61, No. 6, pp. 806-810).
 37. Sugie, T., Kinoshita, T., Masuda, N., Sawada, T., Yamauchi, A., Kuroi, K., ... & Toi, M. (2016). Evaluation of the clinical utility of the ICG fluorescence method compared with the radioisotope method for sentinel lymph node biopsy in breast cancer. *Annals of surgical oncology*, 23, 44-50.
 38. Zhang, X., Li, Y., Zhou, Y., Mao, F., Lin, Y., Guan, J., & Sun, Q. (2016). Diagnostic performance of indocyanine green-guided sentinel lymph node biopsy in breast cancer: a meta-analysis. *PLoS One*, 11(6), e0155597.
 39. Sugie, T., Ikeda, T., Kawaguchi, A., Shimizu, A., & Toi, M. (2017). Sentinel lymph node biopsy using indocyanine green fluorescence in early-stage breast cancer: a meta-analysis. *International journal of clinical oncology*, 22, 11-17.
 40. Aydogan, F., Ozben, V., Aytac, E., Yilmaz, H., Cercel, A., & Celik, V. (2012). Excision of nonpalpable breast cancer with indocyanine green fluorescence-guided occult lesion localization (IFOLL). *Breast Care*, 7(1), 48-51.
 41. Liu, J., Guo, W., & Tong, M. (2016). Intraoperative indocyanine green fluorescence guidance for excision of nonpalpable breast cancer. *World Journal of Surgical Oncology*, 14, 1-6.
 42. Coufal, O., & Fait, V. (2016). Use of indocyanine green and the HyperEye system for detecting sentinel lymph nodes in breast cancer within a population of European patients: a pilot study. *World Journal of Surgical Oncology*, 14, 1-6.
 43. Grischke, E. M., Röhm, C., Hahn, M., Helms, G., Brucker, S., & Wallwiener, D. (2015). ICG fluorescence technique for the detection of sentinel lymph nodes in breast cancer: results of a prospective open-label clinical trial. *Geburtshilfe und Frauenheilkunde*, 75(09), 935-940.
 44. Rampaul, R. S., Bagnall, M., Burrell, H., Pinder, S. E., Evans, A. J., & Macmillan, R. D. (2004). Randomized clinical trial comparing radioisotope occult lesion localization and wire-guided excision for biopsy of occult breast lesions. *Journal of British Surgery*, 91(12), 1575-1577.
 45. Buchberger, W., Niehoff, A., Obrist, P., DeKoekkoek-Doll, P., & Dünser, M. (2000, August). Clinically and mammographically occult breast lesions: detection and classification with high-resolution sonography. In *Seminars in Ultrasound, CT and MRI* (Vol. 21, No. 4, pp. 325-336). WB Saunders.
 46. Besic, N., Zgajnar, J., Hocevar, M., Renner, M., Frkovic-Grazio, S., Snoj, N., & Lindtner, J. (2002). Breast biopsy with wire localization: factors influencing complete excision of nonpalpable carcinoma. *European radiology*, 12, 2684-2689.
 47. Kaufman, C. S., Delbecq, R., & Jacobson, L. (1998). Excising the reexcision: stereotactic core-needle biopsy decreases need for reexcision of breast cancer. *World journal of surgery*, 22, 1023-1028.
 48. Luini, A., Zurrida, S., Paganelli, G., Galimberti, V., Sacchini, V., Monti, S., ... & Veronesi, U. (1999). Comparison of radioguided excision with wire localization of occult breast lesions. *British journal of surgery*, 86(4), 522-525.
 49. Nadeem, R., Chagla, L. S., Harris, O., Desmond, S., Thind, R., Titterrell, C., & Audisio, R. A. (2005). Occult breast lesions: a comparison between radioguided occult lesion localisation (ROLL) vs. wire-guided lumpectomy (WGL). *The Breast*, 14(4), 283-289.
 50. De Cicco, C., Pizzamiglio, M., Trifiro, G., Luini, A., Ferrari, M., Prisco, G., ... & Cassano, E. (2002). Radioguided occult lesion localisation (ROLL) and surgical biopsy in breast cancer. *QJ Nucl Med*, 46(2), 145-151.
 51. Tanis, P. J., Deurloo, E. E., Valdés Olmos, R. A., Rutgers, E. J. T., Nieweg, O. E., Besnard, A. P. E.,

- & Kroon, B. B. R. (2001). Single intralesional tracer dose for radio-guided excision of clinically occult breast cancer and sentinel node. *Annals of surgical oncology*, 8, 850-855.
52. Rönkä, R., Krogerus, L., Leppänen, E., von Smitten, K., & Leidenius, M. (2004). Radio-guided occult lesion localization in patients undergoing breast-conserving surgery and sentinel node biopsy. *The American journal of surgery*, 187(4), 491-496.
 53. Gray, R. J., Giuliano, R., Dawway, E. L., Cox, C. E., & Reintgen, D. S. (2001). Radioguidance for nonpalpable primary lesions and sentinel lymph node (s). *The American journal of surgery*, 182(4), 404-406.
 54. Monti, S., Galimberti, V., Trifiro, G., De Cicco, C., Peradze, N., Brenelli, F., ... & Paganelli, G. (2007). Occult breast lesion localization plus sentinel node biopsy (SNOLL): experience with 959 patients at the European Institute of Oncology. *Annals of Surgical Oncology*, 14, 2928-2931.
 55. Yang, S. H., Yang, K. H., Li, Y. P., Zhang, Y. C., He, X. D., Song, A. L., ... & Ma, B. (2008). Breast conservation therapy for stage I or stage II breast cancer: a meta-analysis of randomized controlled trials. *Annals of oncology*, 19(6), 1039-1044.
 56. Moran, M. S., Schnitt, S. J., Giuliano, A. E., Harris, J. R., Khan, S. A., Horton, J., ... & Morrow, M. (2014). Society of Surgical Oncology–American Society for Radiation Oncology consensus guideline on margins for breast-conserving surgery with whole-breast irradiation in stages I and II invasive breast cancer. *Journal of Clinical Oncology*, 32(14), 1507-1515.
 57. Desmoulins, I., Coudert, B., Coutant, C., Fumoleau, P. (2016). Principes des chimiothérapies adjuvantes et néoadjuvantes des cancers du sein localisés. Chapitre 10 Cancer du sein©, Elsevier Masson SAS.
 58. Kwong, D. L. W., McGale, P., Taylor, C., Correa, C., Cutter, D., Duane, F., ... & Darby, S. (2014). Effect of radiotherapy after mastectomy and axillary surgery on 10-year recurrence and 20-year breast cancer mortality: meta-analysis of individual patient data for 8135 women in 22 randomised trials. *The Lancet*.
 59. Adkins, F. C., Gonzalez-Angulo, A. M., Lei, X., Hernandez-Aya, L. F., Mittendorf, E. A., Litton, J. K., ... & Meric-Bernstam, F. (2011). Triple-negative breast cancer is not a contraindication for breast conservation. *Annals of surgical oncology*, 18, 3164-3173.
 60. Coudert, B. P., Largillier, R., Arnould, L., Chollet, P., Campone, M., Coeffic, D., ... & Namer, M. (2007). Multicenter phase II trial of neoadjuvant therapy with trastuzumab, docetaxel, and carboplatin for human epidermal growth factor receptor-2–overexpressing stage II or III breast cancer: results of the GETN (A)-1 trial. *Journal of clinical oncology*, 25(19), 2678-2684.