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(CASE REPORT)

Occult breast cancer: Unusually detected by left para sternal adenopathy

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Abstract

Occult breast cancer is a breast cancer that can often be revealed by axillary lymph node metastasis without a primary breast lesion.

Initially, the absence of a breast lesion was just clinical, but this definition has now been broadened to include the negativity of signs on mammography and ultrasound. management of patients with occult breast cancer is non-standardized and varied, ranging from simple surveillance to radical or conservative surgery, radiotherapy or systemic treatment. However, there is no consensus on the optimal management of these patients.

This type of cancer is usually detected by axillary adenopathy. We report a case of a non-routine occult breast cancer, detected after adenectomy of a left suprasternal adenopathy and not by axillary lymphadenectomy.

Our case showed other locations of occult breast cancer, other than axillary adenopathies, which remain the usual site of this type of cancer, illustrating that its natural history remains unclear.

Although there were variations in the management of our patient, given her particular context, our case illustrates the need for individualized treatment.

Keywords: Breast; Occult cancer; Axillary adenopathy; Para-sternal adenopathy

1. Introduction

Occult breast cancer, first described in 1907, is a breast cancer that can often be revealed by axillary lymph node metastasis without a primary breast lesion, with a reported incidence of between 0.12 and 1.67% [1].

Initially defined by the absence of a clinical breast abnormality, this definition has been broadened to include the negativity of signs on mammography and ultrasound. And to help clarify and try to standardize the definition of this type of cancer a study by A.Ofri and K.Moore in 2020 proposed to use 2 distinct terms: clinical occult breast cancer (cOBC) is defined as no lesion detectable on examination, mammography or ultrasound, and pathological occult breast cancer (pOBC) as extending beyond cOBC, includes a negative MRI and, if performed, a pathologically negative mastectomy specimen (when examined at 5 mm slices). [2]. The initial detection of an axillary adenopathy may be benign and probably of viral origin, but when a malignancy is found with no previously known homolateral breast cancer, bearing in mind that more than 50% of the primary originates in the breast [3], four options can be considered for the primary site of malignancy: ipsilateral occult breast cancer, contralateral breast cancer, tumors in other distant organs, and primary axillary malignancy itself.

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To date, the management of patients with occult breast cancer consists of lymph node dissection. but optimal management of the ipsilateral breast is non-standardized and varied, ranging from simple surveillance to radical or conservative surgery via radiotherapy or systemic treatment. Nevertheless, there is no consensus on the optimal management of these patients.

We report a case of a non-routine occult breast cancer, detected after adenectomy of a left suprasternal adenopathy and not by axillary lymphadenectomy.

2. Case study

Mrs A.H, aged 34, with no notable pathological history, history of her illness dates back to 2015 when the patient underwent a left sternal adenectomy in a public facility. Anapath findings in favour of dermal and subcutaneous infiltration by a fairly well-differentiated adenocarcinoma most likely of mammary origin, Immunohistochemistry: RH+, HER2 negative, ki67: 4%, Note that imaging such as ultrasound mammography, breast magnetic resonance imaging (MRI) and CT scans did not reveal any breast lesions.

Patient was subsequently lost to follow-up and did not receive adjuvant treatmen Having consulted in 2020 for recurrence with appearance of a thoracic nodule where she benefited from a second left para-sternal adenectomy. with Anapath in favor of cutaneous infiltration by a moderately differentiated adenocarcinoma whose immunohistochemical data point first to a mammary origin: GATA3+ , hormonal receptors + ,HER2-. With always the negativity of the clinical and radiological examination made of echo-mammography and thoraco-abdomino-pelvic scan.

She was then lost to follow-up another time, and was subsequently referred in 2021 for a 2nd recurrence, and underwent a PCR with a decision to undergo first-line chemotherapy.

Figure 1 Photo after 2nd recurrence

After the date of last treatment the patient, following the decision of the Pluridisciplinary Meeting, benefited from a left patey, a resection of the pre-clavicular left sternal adenectomy site with removal of the muscle opposite and skin graft taken from the thigh. Anapath findings in favour: simple adenosis associated with simple ductal hyperplasia on the mastectomy specimen with negative curage, and on the cutaneous lumpectomy specimen: cutaneous tissue dissociated by tumour proliferation,including immunohistochemistry in favor of a well-differentiated carcinomatous process compatible with a mammary origin with deep muscle infiltration (N.B.: no further surgery is possible), then referred for radiotherapy (end of treatment 04/11/2022), followed by Tamoxifen and oncogenetic consultation.

Figure 2 Photo after surgery

Figure 3 Photo on 4th postoperative day

Figure 4 Photo after staple removal

Figure 5 Photo a few days later

3. Discussion

Our case reflects the fact that occult breast cancer is not always detected by metastatic axillary lymph nodes, and the incidence of this clinical presentation, i.e. occult non-axillary breast cancer, is not illustrated in the literature.

Pentheroudakis et al. published a review of the literature in 2010 that included 24 retrospective studies, the incidence of breast cancer without an identified mammary primitive was 0.12 to 1.67%. [1] and according to Foroudi et al, this

incidence is reported to be 0.3 to 1% of all patients with breast cancer [4] , but only concerns axillary lymphadenopathy, which remains frequent.

In the absence of any consensus or data in the literature on what to do when faced with an occult cancer in which no breast tumor has been identified, the clinician is faced with a real difficulty in managing patients with axillary lymph node invasion by an adenocarcinoma of breast origin, all the more so if the invasion is in another location, as in our case.

Initial detection of this type of localization (axillary or other) of breast adenocarcinoma without known homolateral breast cancer could be a diagnostic challenge and problem.

Several imaging techniques have been investigated for the detection of occult primaries, and with the introduction of more advanced techniques, such as mammography and breast ultrasound, computed tomography (CT) and positron emission tomography (PET), the incidence of occult breast cancer has dropped, but remains insufficient to search for the primary, since the problem is still encountered regularly.

However, breast MRI can identify the primary tumor in around two-thirds of this population, and while its sensitivity is high, its specificity is much lower, as any lesion detected by MRI should be confirmed histologically [5]. This finding is confirmed by several studies, including a randomized multicenter study by Berg et al. that compared positron emission mammography with MRI in 388 patients with newly diagnosed breast cancer and concluded that MRI showed greater sensitivity in detecting additional cancers (53% vs. 41%)[2] , and another study by Ko et al, who found that MRI could identify a primary tumor in 83% of cases in patients with lymph node invasion and no primary found on ultrasound or mammography [6].

The American College of Radiology recommends the use of MRI for patients with occult breast cancer who have no evidence of a primary breast on conventional radiological examination (mammography and ultrasound) and clinical examination [7].

In our case, all examinations were negative, including MRI, thus meeting the definition proposed by A. Ofri and K. Moore in 2020: pOBC (pathological occult breast cancer), which consists of no lesion detectable on examination using standard techniques and a negative MRI.

Historically, radical mastectomy was the treatment of choice, but over time the therapeutic attitude has evolved towards an increasingly conservative approach, especially with MRI exploration, which has altered the locoregional treatment of occult breast cancer, leading to conservative breast surgery in a third of cases.

In the literature we have authors who advocate performing mastectomy to maximize tumor cytoreduction and avoid the need for continuous breast surveillance [8], while others argue that mastectomy is not necessary [8], and for some breast conservation with whole-breast radiotherapy is an option for patients with a diagnosis of occult breast cancer and negative preoperative MRI. [9-10]

In the article by Pavlidis and Pentheroudakis concerning tumours without a primary lesion, irrespective of location, the authors advocate minimally invasive locoregional treatment whenever possible, which improves patients' overall survival and recurrence-free survival[11] , and according to the literature review by Pentheroudakis et al, in the event of lymph node invasion by an unidentified breast tumour, recourse to radical mastectomy is frequent in 59% of cases [1]. teams in favour of this type of treatment justify such a breast procedure in order to optimize local control of the disease. And when comparing 5-year overall survival, Blanchard and Farley's study of 34 patients found a significant difference between the "mastectomy" and "therapeutic breast abstention" groups (73% versus 36%) [11]. Whereas the study by Sohn et al published in 2015 found no significant difference in terms of overall survival in 142 patients between those who had axillary curage alone, and those who had associated total or partial mastectomy [11].

Conversely, in the study by F. Couderet et al, overall survival at 5 years was 77.4%, while surgical and radiotherapy abstention was chosen for 69% of patients [11].

Although there is a general consensus that the primary treatment is lymphadenectomy, some researchers have suggested that exclusive radiotherapy with breast conservation is an option that remains little studied in the literature. However, it appears very interesting, according to the retrospective study by Vlastos et al. [12].

The use of systemic treatment is accepted, and was almost 100% in the study by F. Couderet al and Oluwadamilola M.et al [8]. However, there is little further evidence to guide the use of neoadjuvant chemotherapy, in the study by Rueth et

al (2015) among 36 patients defined as cOBC (33 of whom had pOBC); 25 patients had neoadjuvant chemotherapy with 80% complete pathological response in the axilla [2].

In our case, in order to optimize local control of the disease and given the recurrences that the patient has had, knowing that she received no adjuvant treatment after the first surgical procedure, and given that she has been lost to follow-up, the decision of our multidisciplinary meeting was to start with chemotherapy followed by an ipsilateral mastectomy, although the need for extensive breast surgery was less clear, resection of the pre-clavicular adenectomy site with removal of the muscle opposite and skin graft taken from the thigh, and after the definitive anapath the decision was to complete with radiotherapy followed by Tamoxifen and oncogenetic consultation.

There is thus no consensus on the optimal locoregional management of these patients with occult breast cancer, and as its natural history remains unclear, our case made it difficult to standardize management.

The current literature gives little consideration to the type of surveillance to be undertaken for this type of cancer. Systematic breast MRI surveillance could be justified in these very special cases, and should be the subject of further studies.

4. Conclusion

Our case showed other locations of occult breast cancer, other than axillary adenopathies, which remain the usual site of this type of cancer, illustrating that its natural history remains unclear.

Although there were variations in the management of our patient given her particular context, our case illustrates the need for individualized treatment. Despite ,that evidence to date suggests that better results are obtained if the homolateral breast is treated and given the equivalent results for whole-breast radiotherapy compared with surgery, further trials need to be carried out in this area to try to safely avoid mastectomy especially as the survival results encourage the practitioner to adopt minimally aggressive breast management in these patients.

Compliance with ethical standards

Disclosure of conflict of interest

No conflict of interest to be disclosed.

Statement of informed consent

Informed consent was obtained from all individual participants included in the study.

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