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LETTER / *Genito-urinary*

Intramammary metastasis of a psammocarcinoma of the ovary

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Psammoma bodies are spheres of calcium or concentric rounded laminar microcalcifications between 5 and 100 mm in size. They are due to modifications caused by necrotic phenomena.

Mammary metastases are extremely rare. The primary tumours are melanomas, lymphomas, ovarian and pulmonary carcinomas. It is very unusual for mammary metastases to be of ovarian origin: only a few cases have been reported in the literature [1—7]. The first requirement if a mammary nodule arises following ovarian cancer is to eliminate a primary breast tumour.

We report a case of mammary metastasis of an ovarian carcinoma. We will present the clinical and paraclinical signs which enable the diagnosis to be made, then we shall discuss the various treatment possibilities.

Observation

The patient was aged 36, married, without children, and with no particular history of disease. She had consulted 3 years previously for an increase in abdominal volume. Clinical examination revealed an abdominal/pelvic mass reaching the umbilicus. Abdominopelvic CT showed a mass of ovarian origin measuring 170/110 mm with moderately abundant ascites. Exploratory laparotomy objectified a left ovarian tumour measuring 180/110 mm. The cancer was classed as 2C on the FIGO classification.

A total hysterectomy was performed with omentectomy and biopsy samples taken from the parietal peritoneum and the omentum. The biopsy samples taken showed no abdominal extension. The extension assessment did not show any secondary localisation. The patient

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underwent six courses of chemotherapy with cyclophosphamide, Adriblastina® (doxorubicin) and cisplatin. Complete remission had been obtained by the time of the follow-up CT.

Postoperative recovery was uneventful and the patient was discharged from hospital on day 3 following the procedure. The anatomopathological study showed a papillary serous cystadenocarcinoma of the ovary. Three years after the end of her chemotherapy, the patient presented a nodule in the superior external quadrant of the right breast, measuring 2 cm in diameter and mobile relative to deep and superficial tissue. Examination of the lymph nodes did not reveal any mobile adenopathy. Mammography found a highly dense mass with a spiculated outline, without microcalcifications (Fig. 1) with an infracentimetric lymph node in the right axillary process.

An extended lumpectomy was performed, which objectified a papillary serous cystadenocarcinoma measuring 17 mm exhibiting psammoma bodies (Fig. 2). The margins of the exeresis were healthy. The procedure was completed by homolateral lymph node dissection which found three lymph nodes invaded of the 10 removed. Immunohistochemistry showed the absence of oestrogen and progesterone, BCL-2 and Her-2 receptors. The extension assessment was normal, comprising a thoracic X-ray and an abdominal, pelvic and thoracic CT scan. The breast was subjected to radiotherapy, and the patient underwent adjuvant chemotherapy associating cyclophosphamide, Adriblastina and cisplatin. After 14 months, no recurrence has been observed. All in all, this was a case of mammary and lymph node metastases of an ovarian cystadenocarcinoma.

Discussion

Mammary metastases represent 0.5 to 2% of the malignant lesions of the breast. They occur in the absence of any breast cancer risk factor. They may be synchronous or metachronous with the primary tumour, manifesting a few months or some years after discovery of the primary tumour [1—3,8—10]. Less than 300 cases of mammary metastases have been recorded in the literature, of which only 10 or so cases are of ovarian origin. A third of the primary tumours

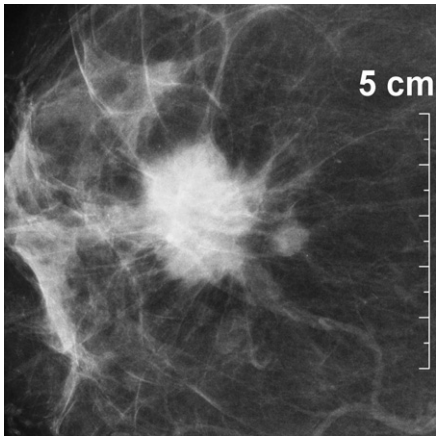

Figure 1. On mammography: a highly dense mass with a spiculated outline, without microcalcifications.

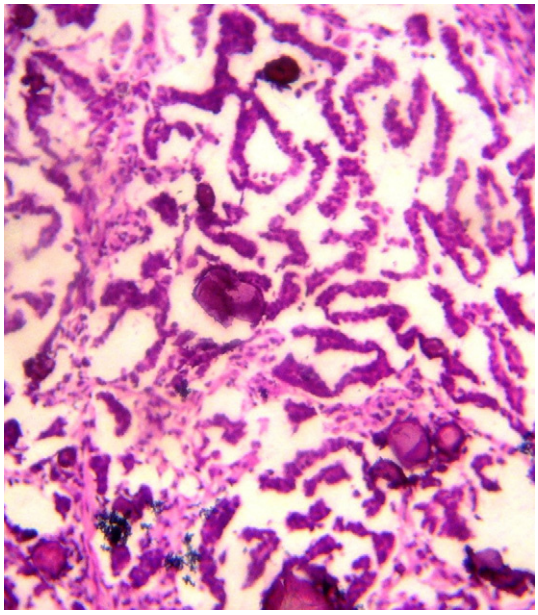

Figure 2. A histological cross-section (enlargement ×100): papillary serous cystadenocarcinoma of the ovary with psammoma bodies covered with barely atypical tumoral cells, with numerous spheres of calcium, H&E (haematoxylin and eosin) stained.

of mammary metastases are melanomas and lymphomas [8—10].

Papillary serous cystadenocarcinoma of the ovary with psammoma bodies is usually diagnosed in women aged between 30 and 50 years old, but it can also be found in women over 50.

The prognosis is relatively favourable compared with serous adenocarcinomas without psammoma bodies. Two hypotheses are proposed to explain the formation of psammoma bodies: the first is the formation of hydroxyapatite by tumoral cells in the process of necrosis, while the second is the effect of osteopontin, which is a protein involved in the mineralisation of bone tissue and which is thought to be produced by macrophages in tumoral lesions [6]. The greater the number of psammoma bodies, the greater the tumoral necrosis and the better the prognosis [1].

The anatomopathologist should be informed of the existence of the primary tumour. Histology can generally easily differentiate lesions of metastatic origin from lesions of primary origin. Unlike primary breast tumours, mammary metastases are generally well delimited and seem to displace the mammary ducts rather than arise from them [2,7], whereas in our case, the lesion presented a spiculated outline.

Mammary biopsy shows cells of different types and structure from those of mammary tissue with, on immunohistochemical analysis, a lack of oestrogen and progesterone, BCL-2 and Her-2 receptors [4]. It is difficult to differentiate between metastasis and primary cancer of the breast and the process has to be based on a series of clinical, radiological, and histological arguments. The presence of a primary cancer affecting another organ and the histological concordance between the primary site and the metastasis usually permits the decision to be made [4,5,8]. In our case, it was possible to confirm the metastatic nature

of the carcinoma from extemporaneous examination of the tumour.

The treatment of mammary metastases is palliative [3]. It is based on chemotherapy and surgery. The place of chemotherapy [9] is still marginal and uncertain owing to the rarity of these metastases and conditions that are often somewhat unfavourable for using it. The protocol most used is CAP, in which the treatment associates cyclophosphamide, Adriblastina and cisplatin. It is administered in six courses at 3-week intervals. The indications for surgical treatment of intramammary metastases are, on the other hand, controversial [2]. They do not constitute the subject of any consensus based on sufficiently high levels of evidence, and require multidisciplinary agreement of the various people involved in the patient's management (the surgeon, radiologist, anatomopathologist and radiotherapy oncologist).

Conclusion

Mammary metastases are extremely rare. Their originating from the ovary is exceptional, but this origin must be considered whenever any malignant lesion of the breast occurs. Treatment is palliative, and is based on surgery and chemotherapy.

Disclosure of interest

The authors declare that they have no conflicts of interest concerning this article.

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