MEDULLARY BREAST CARCINOMA

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Keywords: *breast carcinoma, medullary carcinoma, mammography, echography*

Abstract: *Medullary breast carcinoma is a special type of invasive ductal carcinoma, relatively rare, representing 2-7% of all breast neoplasms. Material and methods: We present the case of a patient who checked in due to an existing tumour mass in the left breast discovered three weeks before. Results: Digital mammography with Giotto Image revealed a lobulated opacity with blurred contours, of medium intensity located in the upper extern quadrant. Ultrasound examination revealed a solid mass with lobulated contours, an intensely hypoechogenic structure, with hyperechogenic pseudosepta. The microscopically examined material on sections after paraffin embedding led to the diagnosis of medullary carcinoma. Conclusions: Medullary carcinoma is a malignant well-defined, lobulated, rapidly growing tumour; sometimes, because of associated significant inflammatory reaction, it shows blurred contours. Mammography and ultrasound diagnosis is difficult due to the non pathognomonic aspect. One has to carefully consider all imaging characteristics as to avoid confusion with other well-defined tumours, especially the benign ones.*

Cuvinte cheie: *cancer de sân, carcinom medular, mamografie, ecografie*

Rezumat: *Carcinomul medular este un tip special de carcinom ductal invaziv, relativ rar, reprezentând 2-7% din toate neoplasmele mamare. Material şi metodă. Prezentăm cazul unei paciente care s-a prezentat cu o formaţiune tumorală la nivelul sânului stâng descoperită cu trei săptămâni înainte. Rezultate. Mamografia digitală efectuată cu un aparat Giotto Image a evidenţiat o opacitate lobulată cu contururi şterse, de intensitate medie, în CSE. Examenul ecografic a pus în evidenţă o formaţiune solidă cu contururi lobulate şi microlobulate, nete, structură intens hipoecogenă, cu pseudosepturi hiperecogene. Materialul examinat microscopic pe secţiuni după fixare la parafină a condus la diagnosticul de carcinom medular. Concluzii. Carcinomul medular este o tumoră malignă bine delimitată, lobulată, cu creştere rapidă; uneori, din cauza reacţiei inflamatorii importante asociate, prezintă contururi sterse. Diagnosticul mamografic şi ecografic este dificil, neexistând un aspect patognomonic. Trebuie analizate atent toate caracteristicile imagistice pentru a evita confuzia cu alte formaţiuni tumorale bine delimitate în primul rând cu cele benigne.*

INTRODUCTION

Invasive breast cancer is a heterogeneous disease from the point of view of pathology and clinical presentation. According to WHO 2003 classification of tumours of the breast, there are IDC 75%, ILC 10-15% and 10-15 % 16 entities of rare breast cancer.(1) Medullary carcinoma is one of them, namely the group with good prognosis and hormone receptor negative.(2,3) In this article we will present a case of medullary breast carcinoma.

CASE STUDY

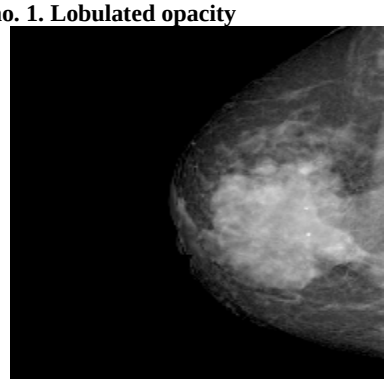
The aim of this article is to present the clinical, mammographical and histopathological characteristics of this particular form of invasive breast cancer.

We present the case of a patient, SA, aged 51, who checked in due to an existing tumour mass in the left breast discovered by the patient, three weeks before.

During consultation, the patient's breasts were symmetrical, presented a normal colour without any changes of the tegument. At the upper extern quadrant, we could palpate a painful firm tumour mass, partially adherent to the deep structures. Suspicious axillary adenopathies were not palpable.

Digital mammography with Giotto Image revealed a lobulated opacity with blurred contours, of medium intensity, size 3,6/3,2 cm located in upper extern quadrant (figure no. 1). Both breasts presented a homogeneous adipose structure of ACR 1 type without further abnormalities.

Figure no. 1. Lobulated opacity



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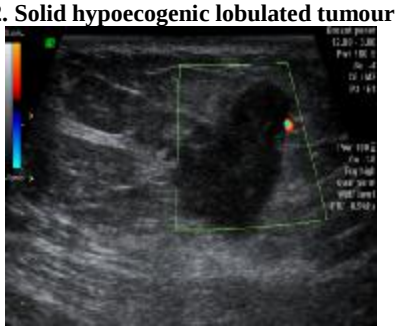
Ultrasound examination revealed a solid mass with lobulated and microlobulated contours, with the exception of the medial contour which was blurred, an intensely hypoechogenic structure, with hyperechogenic pseudosepta with posterior acoustic enhancement, moderately vascularised, of size 3,2/3,4 cm (figure no. 2).

Figure no. 2. Solid hypoecogenic lobulated tumour



Ultrasound showed no evidence of axillary, internal mammary or subclavian adenopathies with suspect features of secondary determinations.

Both imaging tests confirmed the absence of other pathological changes in the breasts.

The patient was referred to the surgery department where she underwent surgical excision of the tumour mass and axillary ganglions extirpation.

The anatomopathological examination macroscopically described a grey tumour of 2 cm, relatively encapsulated. The microscopically examined material on sections after paraffin embedding led to the diagnosis of medullary carcinoma (figure no. 3). The histopathological test of the axillary lymph nodes was negative for malignancy.

Figure no. 3. Medullary carcinoma - colour HE

DISCUSSIONS

Medullary carcinoma is a special type of invasive ductal carcinoma, relatively rare, representing 2-7% of all breast neoplasms.(2) It is more common in the young age, representing approximately 10% of all breast neoplasms in ages under 35, but the average age of occurrence is at 45-55 years old. In my casuistry, it represents only 2,4 % of the cases of breast cancer. It is more frequently found in the population carrying the BRCA 1 gene.(5) It may be multicentric in 8-10% of the cases and bilateral in 3-18%.(2,6)

Medullary carcinoma is a well-defined carcinoma, consisting of undifferentiated cells with small stroma and lymphoplasmocitic infiltrate. It is a tumour that pushes the adjacent tissues rather than infiltrating them. The typical medullary carcinoma must meet all the specific features in at least 90% of the tumour; otherwise, it is an atypical medullary carcinoma that is not clinically different from the common invasive ductal carcinoma with medullary features.(2,7)

Macroscopic characteristics are those of a well-defined tumour, lobulated and with nodular structure; it may partially show blurred contours due to rich lymphoplasmacytic cell infiltrate. Large tumours necrose frequently. Clinically, medullary carcinoma often appears as a mobile mass that grows quickly, and it is usually painful due to intense inflammatory response. The growth rate is among the fastest in mammary neoplasms. On palpation, it is an oval or lobulated, mobile and firm mass (but less firm than the common invasive ductal carcinoma); it might adhere to the adjacent tissues but only in few cases.(2,8) Clinically, it can be very similar to fibroadenoma. It measures between 1 and 4 cm and it is mainly located in the supero-external quadrant. The prognosis of this particular type of carcinoma is better than that of the common invasive ductal carcinoma, especially in masses smaller than 3 cm with no axillary metastatic adenopathies (89-95% survival at 5 years).(1,2,3)

In mammography, medullary carcinoma usually appears as a round, oval or lobulated opacity with circumscribed, and sometimes partially blurred contours of average intensity, without calcification.(9) It may present small satellite, even contiguous opacities, with micro-lobulated contours (in situ component).(10) In our case, the opacity presented blurred contours due to the associated important inflammatory component.

Ultrasound revealed a solid tumour with a round, oval or lobulated shape with circumscribed and partially faded/blurred contours, with hypoechogenic structure and posterior acoustic enhancement; it sometimes can present transonic zones in the interior caused by necrosis in large lesions. In some cases, the hyperechogenic aspect halo is also visible, characteristic for the malignant tumours.(9,11,12)

Ultrasound exam of the axilla can reveal large adenopathies that are usually only reactive, without metastatic determinations, characteristic for medullary carcinoma. Adenopathies present at microscopic examination only rich lymphoplasmacytic infiltrate and follicular hyperplasia.(13) Typical medullary carcinoma cannot be differentiated with sufficient accuracy from the atypical one through mammography and ultrasound.(7,10) There are features that may suggest one diagnosis or another. Thus, the perfectly circumscribed contours and the absence of calcifications and spiculations on mammography, as well as the net contours, the relatively homogeneous structure and the absence of posterior acoustic attenuation advocate rather for the typical medullary carcinoma.

Medullary carcinoma should be differentiated from all circumscribed, benign or malignant tumour masses such as: fibroadenoma, Phyllodes tumour, other circumscribed breast cancers and the non-Hodgkin lymphoma.

Fibroadenoma is the most common tumour under 35 years of age, it is well-marked throughout the circumference by a hyperechogenic pseudocapsule, it is oval and it generally presents a slow growing rate. The structure, the echogenicity and the posterior acoustic effects are highly variable and they cannot be elements of differential diagnosis. The presence of transonic areas inside is rare.(2,9,14)

Phyllodes tumour generally occurs in patients aged 45-49, it shows a rapid growth and a similar shape: round, oval or lobulated, circumscribed contours, its structure is less homogeneous and the presence of transonic zones inside is more often.(2,9,15)

Less frequently, the common or in situ invasive ductal carcinoma may appear imagistically similar to medullary carcinoma, and, in this situation, the diagnosis can be differentiated only histopathologically. Mammographic and ultrasound differentiation is easier for the atypical medullary carcinoma.

Colloid carcinoma can mime medullary carcinoma, but the age of occurrence is much higher (average age 65 years old), and its structure is more commonly isoechogenic with adipose tissue or it can even present a complex structure, with solid and fluid areas.(2,16)

The non-Hodgkin breast lymphoma most commonly appears at mammography as a more circumscribed, lobulated mass without calcification and at ultrasound, as a well- defined, highly hypoechogenic mass with posterior acoustic enhancement.(9,17)

Medullary carcinoma should be also differentiated from breast metastasis with a starting point in other organs, which are unique in about 75-85%, and appear as circumscribed masses and less as masses with faded/blurred contours at both mammography and ultrasound, in the last case presenting a hypoechogenic structure.(2,9,18)

CONCLUSIONS

Medullary carcinoma is a malignant well-defined, lobulated, rapidly growing tumour; sometimes, because of associated significant inflammatory reaction, it shows blurred contours. Mammography and ultrasound diagnosis is difficult due to no pathognomonic aspect. One has to carefully consider all imaging characteristics as to avoid confusion with other well-defined tumours, especially the benign ones.

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