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Gianluca NAZZARO, Francesca GERMINIASI, Emanuela PASSONI, Emilio BERTI

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Letters to the Editor

Ectopic Axillary Breast Tissue appeared in Pregnancy and revealed by Ultrasound

Running title: Ultrasound of Ectopic Axillary Breast Tissue

Gianluca Nazzaro, MD, Francesca Germiniasi, MD, Emanuela Passoni, MD, Emilio Berti, PhD

Dipartimento di Fisiopatologia Medico-Chirurgica e dei Trapianti, Università degli Studi di Milano, Unità Operativa di Dermatologia, IRCCS Fondazione Ca' Granda, Ospedale Maggiore Policlinico, Milano, Italy.

Corresponding author:

Gianluca Nazzaro, MD

Dipartimento di Fisiopatologia Medico-Chirurgica e dei Trapianti, Università degli Studi di Milano, Unità Operativa di Dermatologia, IRCCS Fondazione Ca' Granda, Ospedale Maggiore Policlinico, Via Pace 9, Milan, Italy

Telephone: +390255035205

Fax: +390255033562

Email: gianluca.nazzaro@gmail.com

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To the Editor

A 41-year-old Asiatic pregnant woman presented to our Clinic because of the appearance of bilateral axillary subcutaneous swelling during the first trimester of pregnancy, interpreted by her general practitioner as hidradenitis suppurativa. The woman was in good general health and did not take any therapy. She was at her first pregnancy and she did not report any gynecological complication. She never noticed any swelling or discomfort in the axillary area before, neither during menstrual period. No breast pathology was reported in her family medical history.

Clinical examination revealed a palpable mass, soft and movable, in the right axillary region; a smaller mass with the same characteristics was present on the other side (Fig. 1). Neither other skin lesion nor regional lymphadenopathy were observed. The absence of comedones allowed to exclude a clinical diagnosis of hidradenitis suppurativa.

Ultrasound examination of the axillary masses showed fibroductal tissue and lobules of fat, the same sonographic appearance of normal breast parenchyma (Fig. 2). The volume of the right mass was estimated to be around 34 cc while the left one 2 cc. Doppler examination revealed slow-flow vessels (Fig. 3). Neither rudimentary nipples nor areola were observed on the skin .The diagnosis of hidradenitis suppurativa was definitely ruled out and the diagnosis of aberrant breast tissue (ABT) was made.

Three months after delivery, dermatological and ultrasound examinations were repeated: the masses appeared grown in size and were more painful; at sonography perilesional vascularization was increased.

Ultrasound is the best imaging tool used to evaluate both palpable and non-palpable masses differentiating between the most common causes of axillary swelling (i.e. lipomas, lymphadenopathies, sebaceous and follicular cysts, hidradenitis suppurativa) [1]. Axillary hidradenitis suppurativa, the first clinical diagnosis that our patient received, is easy to rule out with sonography, since the typical findings have been described in 2013 by Wortsman and colleagues

[2]: widening of the hair follicles, dermal-epidermal thickness, dermal pseudocysts, fluid collections and fistulous tracts.

Ectopic breast tissue (also known as ABT) is an embryogenetic malformation that occurs during the mammary ridges regression at the first weeks of gestation. Mammary ridges (also known as milk-line) are two bands of modified sweat glands extending from the axilla to the inguinal region which appear between the fifth and the seventh week of gestation. In normal breast development, the mammary ridges regress, except for two small portions in the pectoral region. If the regression is incomplete, the aberrant tissue will lead to ectopic breast tissue [3,4].

The original classification by *Kajava et al* [5] has been simplified and the ectopic breast tissue is distinguished into three major categories: supernumerary breast tissue, ABT and polythelia.

Supernumerary breast tissue, also known as polymastia, is an ectopic organized ductal system with or without nipple and/or areola, which can communicate with the overlying skin; it typically occurs along the “milk line”, also far away from the normal breasts. In comparison, ABT only consists in an island of breast tissue without any relationship to the overlying skin, often located very close to the normal breast position. Indeed the axilla is the most commonly involved site (bilateral or confined to the right side) [6], followed by the inframammary area [1, 3, 4]. When only supernumerary nipple or/and areolae are present, without any glandular tissue, the term polythelia is used [3, 6].

The ectopic breast tissue is observed in 2% to 6% of the population [4], occurring more frequently among Japanese people and less frequently among whites [1, 6].

The ectopic breast tissue undergoes hormonal changes exactly as the normal breast tissue does. The hormones typically involved are oestrogens, progesterones, prolactin, and human placental lactogen. [1] For this reason, before puberty the accessory tissue is often completely asymptomatic while after puberty, in particular during menstrual period, pregnancy or breast feeding, it usually becomes symptomatic with swelling, pain, volume increase. [1, 3, 6] Even an iatrogenic hormonal

stimulation may unmask an ectopic breast tissue, as we reported in a patient affected by complete androgen insensitivity syndrome [7].

The possibility of malignant transformation of ectopic breast tissue should always be considered even if there is no evidence of a higher prevalence of cancer than in normal breasts. Since small ectopic masses are not always clinically evident and often are asymptomatic until puberty or further, they are not detected and malignant transformation may be recognized belatedly. Therefore, the poor outcome of cancer arose in ABT [8] may be due to a delayed diagnosis and a lack of awareness in the medical community [9]. Once diagnosis of ectopic breast tissue is made, periodical screening is mandatory, exactly as normal breasts. [3,5] The surgical option is not always necessary and is often a cosmetic choice [1], therefore our patient chose to be followed sonographically every six months.

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References

1. Lim HS, Kim SJ, Baek JM, *et al*. Sonographic Findings of Accessory Breast Tissue in Axilla and Related Diseases. J Ultrasound Med 2017; 36 (7): 1469-1478
2. Wortsman X, Moreno C, Soto R, Arellano J, Pezo C, Wortsman J. Ultrasound in-depth characterization and staging of hidradenitis suppurativa. Dermatol Surg 2013; 39 (12): 1835-42.
3. Grama F, Voiculescu Ș, Vîrga E, Burcoș T, Cristian D. Bilateral Axillary Accessory Breast Tissue Revealed by Pregnancy. Chirurgia (Bucur) 2016; 111 (6): 527-531
4. Oudsema R, Simpson W, Szabo J, Margolies LR. The mammary ridge-A case report of multiple ectopic breast masses. Clin Imaging 2017; 45: 34-36.
5. Kajava Y. The proportions of supernumerary nipples in the Finnish population. Duodecim 1915; 1: 143-70
6. Ghosn SH, Khatri KA, Bhawan J. Bilateral aberrant axillary breast tissue mimicking lipomas: report of a case and review of the literature. J Cutan Pathol 2007; 34 Suppl 1: 9-13.
7. Nazzaro G, Genovese G, Brena M, Passoni E, Tadini G. Aberrant breast tissue in complete androgen insensitivity syndrome. Clin Exp Dermatol 2018; 43 (4): 491-493.
8. Marshall MB, Moynihan JJ, Frost A, Evans SR. Ectopic breast cancer: case report and literature review. Surg Oncol 1994; 3:295
9. Gutermuth J, Audring H, Voit C, Haas N. Primary carcinoma of ectopic axillary breast tissue. J Eur Dermatol Venereol 2006; 20: 217

Legend

Fig. 1. soft and movable masses located in (a) the right and (b) left axillary region

Fig. 2. Ultrasound reveals fibroductal tissue and lobules of fat.

Fig. 3. At Doppler examination, slow-flow vessels surrounding fat lobules