CASE REPORT

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Evaluation of giant galactocele with ultrasound and shearwave elastography findings

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ABSTRACT

Giant galactocele is a rare bening cystic form of milk products of the breast. Giant galactocele's sonographic features are described in many reports, but shear wave elastography (SWE) findings are not fully known. Galactocele ultrasound findings have been described, but some lesions are confusing. SWE may show a hard tissue-like finding in the galactocele and may be confused with malignancy especially in the chronic lesions. In the present case report, we aimed to present routine sonographic and SWE findings of a giant galactocele in a 29 year old woman.

Key Words: Giant galactocele, Shearwave elastography

Introduction

Galactocele, defined as a benign cystic collection of milk products of the breast, containing milk or a milky liquid, it is due to the accumulation of secretory fluid following the obstruction of a galactophore duct (1) Ultrasonography (US) is the first imaging method after the questioning the patient and clinical examination. Using US, galactoceles are visualized as round or oval structures, the appearance of which depends on the proportions of fluid, protein and fat that they contain (2). Shear wave elastography (SWE) examination using ultrasound elastography (USE) is a popular imaging procedure for obtaining elasticity information of breast lesions. As far as we know, SWE of galactoceles has not been yet reported. In this case report, we aimed to define routine sonographic findings and SWE findings of giant breast galactocele in a young woman.

Case Report

A breastfeeding young woman who is 29-year-old age presented with a giant hard breast mass on the left side. Pregnancy was 8 months ago. Since the patient noted an increase in the volume of the left breast over one month, she consulted in our service. Hard mobile giant mass appeared with physical examination of the left breast and there was a significant increase in left breast size. The milk secretion was noticed at the bilateral breast. No skin thickening was observed and axillary lymph nodes were not revealed at US. A non-vascularized, hypoechoic cystic mass with intensive content in the lower quadrant of the left mammary gland was revealed by US. It was with a clear margin measuring 9x10 cm (Figure 1). The echogenicity of cystic mass was rather homogeneous and there was posterior enhancement. Then the ARFI elastograms were obtained (Our USG device Siemens S 2000). Measurements were made at 3 different locations within the galactocele and the mean of these measurements was taken as the shear wave velocity (SWV) value of the lesion. The lesion showed increased stiffness in SWV (maximum stiffness in blue) and the mean SWV value was 7 m / s. (Figure 2 a-b). The patient underwent aspiration of the galactocele with the fine needle. The 360 cc of milky fluid was aspirated (Figure 3). Cytopathologic examination was negative for malignant cells and revealed milky content. Based on USG findings and histopathological findings, the lesion was diagnosed as galactocele. When the cyst was drained, full treatment was provided.

The galactoceles can have sonographic appearance in a wide range and mimic other lesions of the mammary gland, both benign and malignant. The recent childbirth and lactation period are warning to the diagnosis and a well-defined lesion presence with some distal acoustic enhancement may be diagnostic. Many patients are treated with needle aspiration of the lesion, which is also a diagnostic tool (3). The appearances of the internal contents from homogeneous to heterogeneous which are essentially milk products, containing about 10% solids,

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Fig. 1. Ultrasound examination of the breast reveals a hypoechoic giant cystic mass with regular margins

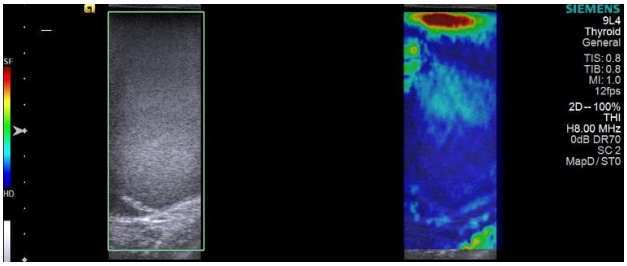

Fig. 2. Shear-wave elastographic images of cystic breast mass. a) Cysts typically appear mostly dark blue (ie, hard) on this type of elastography b) Two-dimensional shear wave elastograms for the cyst was a maximum SWV of 9.93 m/s.

desquamated epithelium and fat are variable (3).

Galactoceles may be visualized as a complicated cyst like lesion mimicking breast cancer or a heterogeneous mass with a pseudo-solid appearance containing hypoechoic and hyperechoic materials due to various amount of old milk, water and proteinaceous material. Nevertheless, they may suggest benign lesion with well-defined margins at B-mod US. 4). Elastography is a method of imaging based on tissue stiffness or hardness similar to clinical palpation with ultrasonography for malignancy. Elastography is a method for quantify stiffness unlike a physical examination that allows only the subjective judgment of the stiffness of a lesion (5). SWE has good diagnostic performance for distinguishing between malignant and bening breast lesions (6). The numeric values that distinguish soft and stiff tissue are designated as shear wave velocity (SWV). Most malignancies have stiffness but bening lesions such as cysts are typically soft. In our case the giant cystic lesion has high stiffness. In the present case, the maximum SWV was 9.93 m/s, which was similar to those of malignant lesions. In this case, high elasticity values were confusing. This result in the gigantic galactocele was associated with intense proteinaceous

Fig. 3. Liquid from aspiration of galactocele with fine needle

content. In clinical practice, galactocele can be discovered during or after breastfeeding or extremely rare, later in life, even after menopause and sometimes the gray scala US image may not be typical for galactocele. Sometimes the gray scala US image may not be typical for galactocele. Elastography may help to distinguish the suspicious viscous galactoceles from a benign cyst form but this approach needs to be confirmed with more clinical information (7). In this case, despite the high values in SWE, it was not difficult to diagnose with breastfeeding period, young age and US findings. In some chronic cases, high SWV values can be confusing and may be the cause of unnecessary biopsy. Therefore, the lesions that are not typical of malignancy, regardless of SWV results must first be identified with grayscale and doppler characteristics. Sometimes, it should be kept in mind that the elastography values may be misleading.

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