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# Nodular sclerosing adenosis: Case report

## Nodüler sklerozan adenosis: Olgu sunumu

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**Abstract**
Sclerosing adenosis (SA) is a benign proliferative type of breast disease affecting the acinar, myoepithelial and connective tissue in the terminal ductal lobular units. Sclerosing adenosis, which gives a nodular appearance on mammography and ultrasonography, is defined as nodular sclerosing adenosis (NSA). NSA is an atypical radiological presentation of SA. Such lesions may arouse suspicions about the reliability of the diagnosis when they receive a diagnosis of SA in the needle biopsies. Therefore, it should be kept in mind that SA may rarely be seen as a nodular mass.
**Keywords**: Nodular sclerosing adenosis, Breast, Ultrasonography, Mammography

**Öz**
Sklerozan adenozis (SA) terminal lobuler ünitte asiner, miyoepitelyal ve konnektif dokuyu etkileyen benign proliferatif tipte bir meme hastalığıdır. Mammografide ve ultrasonografide nodüler ve vizualize SA, nodüler sklerozan adenozis (NSA) olarak tanımlanır. NSA, SA'nın atipik bir radyolojik presentasyonudur. Bu tarz lezyonlar ince ve kalın iğne biyopsilerinde SA tanısı aldığında tanının güvenilirliği açısından kuşku uyandırabilir. SA'nın nadir olarak nodüler kitle şekilde görülebileceği akılda tutulmalıdır.
**Anahtar kelimeler**: Nodüler sklerozan adenozis, Meme, Ultrasonografi, Mammografi

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### Introduction

Sclerosing adenosis (SA) is a benign proliferative type of breast disease affecting the acinar, myoepithelial and connective tissue in the terminal ductal lobular units and a subtype of adenosis [1]. SA is a differential diagnosis that has a broad spectrum of shapes which can mimics a variety of breast lesions in ultrasound (USG) and mammography (MG), including even malignancy [2-4].

SA is defined as an adenosis tumor or a nodular sclerosing adenosis (NSA) when presented as a clinically palpable mass and as a nodular lesion in USG or MG [2]. The lesion without lobulation and without heterogeneity forming a well circumscribed mass is a very rare presentation at the age of perimenopause. This case is presented with histological and radiological findings in the purpose to emphasize this atypical presentation of SA.

### Case presentation

A 45-year-old female patient admitted to the hospital with complaints of breast pain in right side. There was no family history about breast cancer and also any drug. The patient was in perimenopausal ages and her menstrual cycles was regular.

MG was performed with Giotto Tomo digital mammography device. Images were taken on craniocaudal (CC) and mediolateral (MLO) standard plans. The breast pattern was ACR type B. Partially superposed a nodular density was revealed on the upper-outer quadrant in the right breast (Figure 1).

USG was performed with Toshiba S 300 sonography device and used 14 MHz high resolution linear probe. A well-circumscribed, ovoid and uniform, hypoechogenic nodular mass was seen. The Mass dimension was 21x10 mm (Figure 2) No flow signal was seen in Doppler USG (Figure 3). The patient underwent a true-cut biopsy.

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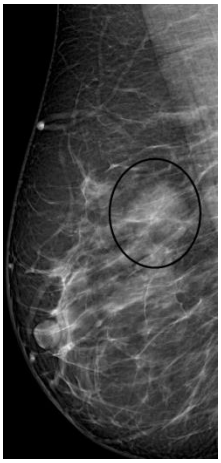

Figure 1: In MG, right superficial nodular opacity is observed in the right breast, which is seen in the upper outer

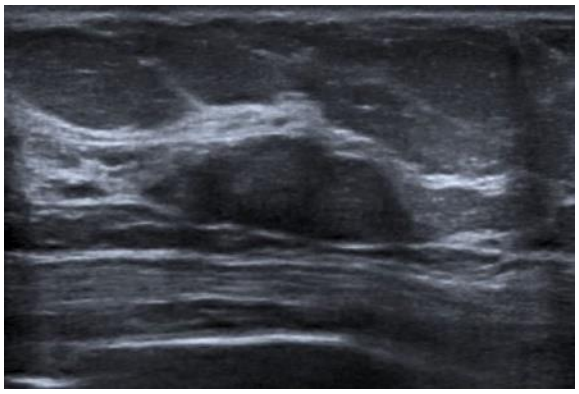

Figure 2: Well circumscribed, hypoechoic, solid lesion in ultrasonography

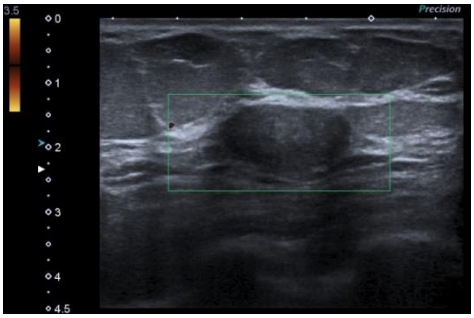

Figure 3: No flow signal in Doppler ultrasonography

Histopathology

The true-cut biopsy material consisted on 7 cream-colored tissues. The size of the biggest tissue was 1.2 cm while the smallest was 0.2 cm. Materials were sampled into tissue cassettes after 10% formalin fixation. Samples were transformed into paraffin blocks after routine tissue following. Sections of 5 µm thickness were taken from the blocks and stained with hematoxylin-eosin. The slides were examined by light microscope.

In the pathological sections, compression of the fibrous stroma was observed. The lesion consists of a benign and often flattened proliferation of epithelial cells surrounded by the myoepithelial cell layer, resulting in compression and structural damage in the glandular structures (Figure 4).

Immunohistochemically, CD10 staining was applied to the glands, suggesting that the myoepithelial layer was preserved (Figure 5). The lesion without cellular atypia was diagnosed as "Sclerosing Adenosis".

The patient fulfilled the consent form before writing this case report.

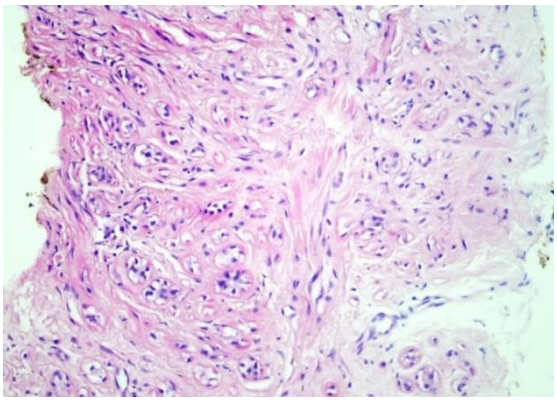

Figure 4: Proliferating gland structures with double row epithelium in the fibrotic stroma; Haematoxylin-eosin (HE) x 200

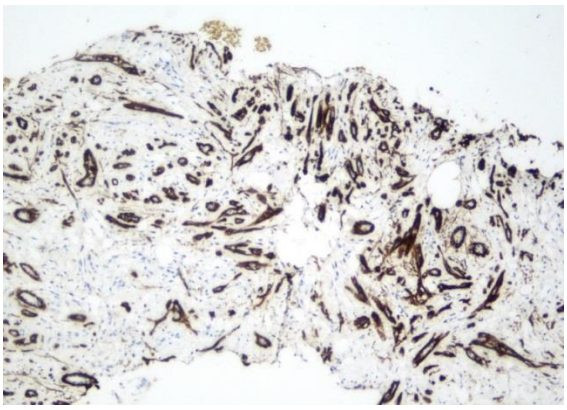

Figure 5: Immunohistochemically; stained gland structures, stained in fibrous stroma, stained positive by CD10 all around, preserved myoepithelial layer; CD10 x 200

## Discussion

SA is a benign proliferative lesion of the breast gland found in 27.8% of benign biopsies and 3.1% of breast's post-mortem studies [4,5]. Haagensen described adenosis as a phenomenon of the menstrual phase of life. The formation of adenosis is related to the stimulation of breast tissues due to estrogen [6].

SA and NSA are subtypes of adenosis [4]. SA is more common in the perimenopausal age group [5] while NSA is usually seen in the 30-45 age range [7]. Information on the radiological features of NSA is very little. Only a few articles in the literature describe mammographic and sonographic findings of it [4].

In MG, SA can be seen as focal asymmetric opacity with distortion or microcalcifications while nodular mammographic image is rare [8]. When SA is percepted as a clinically palpable mass, it is usually detected only in mammography [2]. Paradoxically, when it is visualized in USG, it does not appear in MG [4]. Focal clusters or diffuse calcifications were reported in 50% of cases, thus it can mimic malignancy when calcifications are involved [6]. In fact, the relationship with malignancy is weak. Indeed, Jensen et al. [9] reported a 1.5-2-fold increase in malignancy risk.

Furthermore, SA is a difficult diagnosis among pathologists, because stromal sclerosis and elastosis can mimic infiltrating carcinoma [3].

Histologically, NSA is not different than SA. It is a complex lobulocentric lesion characterized by enlarged, distorted lobules containing duplicated and crowded acini (ductuli) whose luminal epithelial and myoepithelial components and basal membrane are however preserved. Stromal fibrosclerosis

involves at least half of the terminal duct lobular unit (TDLU), which is elongated, distorted and compressed by the sclerosis [10].

NSA is very rare condition. Gunhan-Bilgen et al. [4] evaluated 33,700 patients and only 43 patients were diagnosed as having sclerosing adenosis. Among these patients, only 1 patient was similar to our case with a well-defined nodular mass and in the same time visualized in USG.

In our case two important points should be highlighted. First one is that NSA was found in a patient at the perimenopausal age while it is commonly seen in younger patients. Second point is that all of the cases reported in the literature as having NSA had dimensions less than 2 cm while in our case it was more (2.2 cm).

Conclusion

NSA is an atypical radiological presentation of SA. If it is followed as a benign solid mass, it leads to confusion by showing dimensional and shape changes. Thus, when such lesions are diagnosed as sclerosing adenosis in needle biopsies, patients may undergo excisional biopsy because of radio-pathologic mismatch. Such radiological shape arouses suspicions about the reliability of SA's diagnosis by needle biopsies. Therefore, it should be kept in mind that it is rare but possible to see SA as a nodular mass.

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