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Complex Fibroadenoma: a Cystic Neoplasia Report Case

Fibroadenoma Complexo: Relato de Caso de uma Neoplasia Cística

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Abstract

Fibroadenoma is the most common breast tumor in young woman. It is considered a non-malignant tumor, showing hyaline component and a biphasic stroma and epithelial process, thus, it is similar to phyllode tumor revealing intralobular stroma. The cystic changes in a complex fibroadenoma may mimic a carcinoma, therefore it may represent some problems in images interpretation, and it may enlarge the risk of cancer development. This is a description of a case report with literature review. A 21-year-old female patientwith no history of breast cancer in family, presented a palpable lump in her right breast and clinical examination revealed a mobile, firm, circumscribed lesion in the right inner quadrant, measuring around 8 x 7 cm. An excision had been done under a stereotactic surgery and the structure revealed a nodular surface, measuring 8 x 6.5x 5.5cm. Cut section revealed heterogeneous aspect: cysts with colloid content and white-gray compact fibroblastic areas. Histopathological examination shows hypocellular stroma and few hypercellular areas, without atypia. Epithelial components presenting proliferation of intracanalicular and pericanalicular pattern ducts. Cystic proliferation with epithelial lining and apocrine characteristics without atypia. Because of the variation may be present inside the lesion it is difficult to establish the diagnosis without a biopsy, and a histopathological analysis. Moreover, it is necessary to know the microscope difference between fibroadenoma and the other sort of lesions; furthermore, that heterogeneity represent why that tumor is considered complex

Keywords: Women's Health. Breast Neoplasms. Breast Cyst.

Resumo

Fibroadenoma é o tumor de mama mais comum em mulheres jovens. É considerado um tumor não-maligno, apresentando um componente hialino e um estroma bifásico, e processo epitelial, por isso, é similar ao tumor filoide, revelando estroma intralobular. As alterações císticas no fibroadenoma complexo pode mimetizar um carcinoma, isso acarreta alguns problemas na interpretação das imagens, e pode aumentar o risco de desenvolvimento de câncer. Trata-se de um relato de caso de paciente de 21 anos de idade, sem histórico de câncer de mama na família, apresenta uma massa palpável em seio direito. Exame clinico revelou lesão móvel, firme, circunscrita no quadrante interno do seio. Excisão por cirurgia estereotáctica e a estrutura se mostra com superfície multinodular, medindo 8 x 6,5 x 5,5 cm. com aspecto heterogêneo, cistos com conteúdo coloide, e áreas fibrobásticas branco-acinzentada. Exame histológico demonstra-se estroma hipercelular, com áreas hipocelularizadas, sem atipia. Componentes epiteliais apresentando proliferação intercanalicular e intracanicular dos ductos. Proliferação cística com revestimento epitelial e características apócrinas sem atipia. Por conta da variação presente na lesão, pode ser difícil a estabelecimento de um diagnóstico se biópsia e análise histopatológica. Além disso, é fundamental o conhecimento das diferenças microscópicas entre o fibroadenoma e outros tipos de lesões; além disso, a heterogeneidade representa o motivo do tumor ser considerado complexo.

Palavras-chave: *Saúde da Mulher. Neoplasias da Mama. Cisto Mamário.*

1 Introduction

Fibroadenoma is the most common breast tumor in adolescent and young woman and usually located in the breast upper outer quarter [1,2]. It is considered a circumscribed breast stromal non-malignant tumor, with hyaline component and a low rate of cells, and it shows a biphasic stroma and epithelial process – intracanalicular (stroma compress ducts) and pericanalicular (stroma surrounds round ducts) patterns -, and, like phyllodes tumors, they are intralobular stroma[2-4].

Complex fibroadenoma is a subtype and it is possible to include different changes, including epithelial calcification, papillary apocrine metaplasia, sclerosing adenosis and cysts greater than 3 mm[1,5]. On the other hand, complex fibroadenoma represents 16% of all kinds of fibroadenoma, however, that represented by cystic changes represent just 1.6%[5,6]. Furthermore, there is and academic interest, because they may present some problems in interpretations because of the complex changes, and may mimic a carcinoma, even though the relative risk of cancer development[3,5,7]. However, a recent meta-analysis reported an increase by 41% breast cancer for woman diagnosticated with fibroadenoma in biopsy, moreover, the researchers notice a great heterogenicity in their sample, furthermore, that assay demonstrated some problems to compare other kind of population, because it

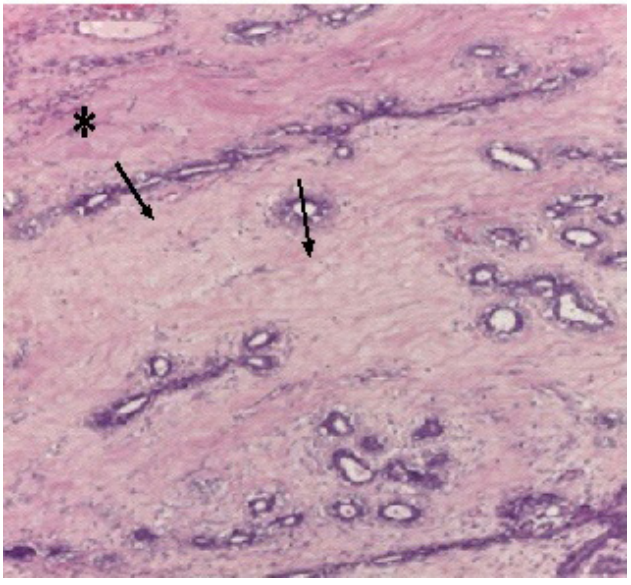
evaluated primarily European women and mammography from the 1980s[8].

The objective of this paper is to report the case of a complex fibroadenoma case, since, in these situations, the image could be a confusing factor, because it is similar to that of a Cancer one.

2 Case Report

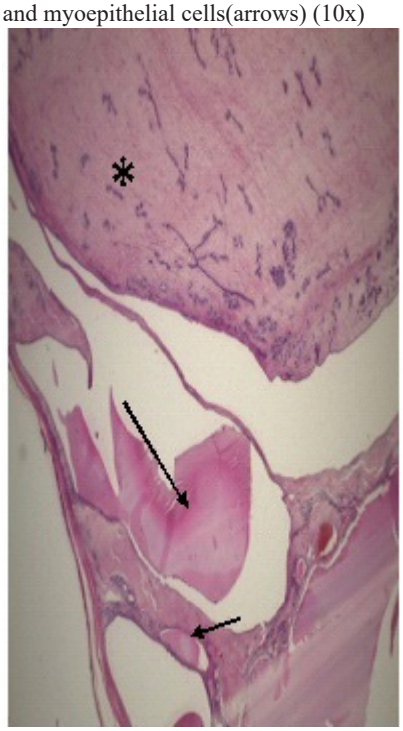
21 year-old female with no history of breast cancer in family, presented a palpable lump in her right breast. Clinical examination revealed a mobile, firm, circumscribed lesion in the breast right inner quadrant, measuring around 8 x 7 cm. An excision had been done under a stereotactic surgery and the structure revealed a nodular surface, measuring 8 x 6.5 x 5.5 cm. Cut section revealed heterogeneous aspect, cysts with colloid content, and white-gray compact fibroblastic areas (Figure 1). Histopathological examination shows hypocellular stroma and few hypercellular areas, without atypia (Figure 2). Epithelial components, presenting proliferation of intracanalicular (Figure 3) and pericanalicular pattern ducts. Cystic proliferation with epithelial lining and apocrine characteristics without atypia.

Figure 1 - Gross section showing heterogeneous aspect, cysts (arrow) with colloid content, and white-gray compact fibroblastic areas



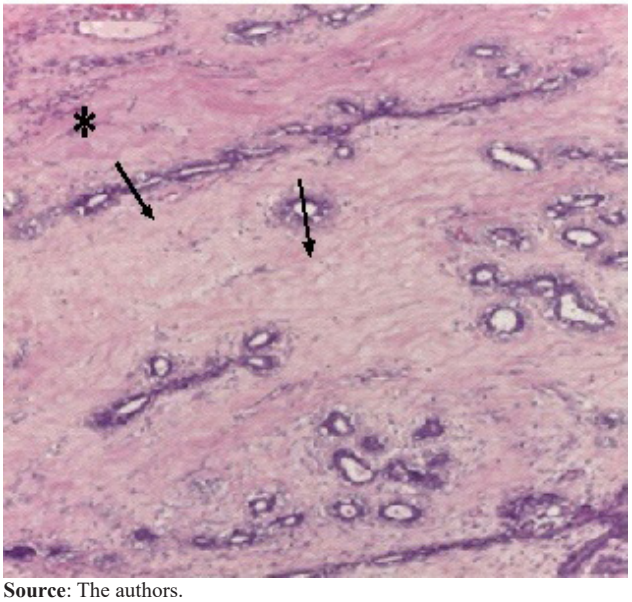
Source: The authors.

Figure 2 - Hypocellular stroma, without atypia (asterisk). Ducts lined by epithelial and myoepithelial cells(arrows) (10x)



Source: The authors.

Figure 3 - Intralobular stroma (asterisk) among cystic (arrow) areas (2.5x)



Source: The authors.

2.1 Discussion

Fibroadenoma is the most common woman breast benign tumor, it happens especially during the youth and almost 90% of women who develops it are less than 45 years old, and the peak of incidence falls during the third decade of life[5,6,9]. Usually they are unique, but may be multiple; it is possible to notice there are myoepithelial cells and non-prominent myofibroblasts . Under microscopy it is evident the presence of hypocellularity and connective tissue, the ducts may be

compressed or surrounded by stroma (Figure 2), and there may be atypical ductal changes; furthermore, the ducts are lined by myoepithelial and epithelial cells that are responsive to hormonal cycle, growing during the pregnancy and lactation period[4,5].

The malignancy transformation in non-complex fibroadenoma is rare, 1.89 times; however it may be higher in familiar history of breast carcinoma or ductal hyperplasia. Patients who take Cyclosporine A, for kidney transplantation, may develop the disease in 50%, the immunosuppressed association is not clear[2,5].

Fibroadenomas are circumscribed, firm, mostly solitary, freely movable and measuring 3 cm or less, white-greyish, lobulated and the surface presents numerous slits, and sometimes they may substitute the breast stroma[3]. Usually it may be detected by the patient's self-examination. Mammography usually reveals a homogeneous, circumscribed, oval mass. Ultrasound examination may be necessary to establish a difference between a complex from a non-complex fibroadenoma, especially because the first one may cause image misinterpretation problems and thus, about 23% of the patients maybe would have a malignant pathology diagnosis[1,7,8].

Histopathologicallly, a fibroadenoma is well defined by a proliferation of epithelial and stromal elements, with regular contour; the glands exhibit cuboidal/low columnar epithelium and adjacent myoepithelium, without atypia, as well as no mitotic figures[2,6].

In general, the differential diagnosis is phyllodes tumors, the histopathologic criteria, however, for distinction between both can be difficult to apply, and there are descriptions at the literature that a fibroadenoma may progress to phyllode, emphasizing that a phyllode tumor may probably derive from fibroadenomas by clonal expansion of the stromal compartment[10]. However, a phyllode tumor may show stromal overgrowth, elevated mitotic rate, hypercellularity, pleomorphic stromal cells, leaf-like architecture and can be infiltrative, while such characteristics are not present in fibroadenoma. Another differential diagnosis is the mammary hamartoma, the difference is that hamartoma reveals lobules (may be atrophic), normal ducts and lobules and it is a fat lesion, while fibroadenoma is a stroma with rare fat[3,4].

A complex fibroadenoma is a tumor that shows at least one of these changes: cysts greater than 3 mm, sclerosing adenosis, epithelial calcification and/or papillary apocrine metaplasia[1]. Complex fibroadenoma represents between 16-22% of all fibroadenomas, and in some assays, the researchers found malignancy association in 1.6% of all the fibroadenomas cases [5]. This type of tumor increases the risk of cancer to 3.1 times, in general population and to 3.7 in patients with familiar history[1,6], in contrast, patients with non-complex fibroadenoma are 1.2-2.1times more likely to develop breast cancer compared to general population[5].

Tissue complex tumor lesion is composed by simple fibroadenoma tissue characteristics, with epithelial and myoepithelial cells and multiple s cysts greater than 3 mm[6]. Some of differential diagnoses include benign, atypical or high risk and malignant lesions, e.g., fibrocystic diseases, intraductal or cystic papilloma without atypia; atypical ductal hyperplasia and atypical papilloma; and ductal carcinoma in situ, invasive ductal and invasive lobular carcinoma, respectively; due to that, it is important to ponder that only images make the diagnosis difficult to be established[1,6,7].

The management of a patient varies among the physicians, the trend is bein conservative when the lesions seem benign, based on clinical and imaging criteria. However, when it is necessary to proceed to a lesion resection, histopathology analysis is mandatory,and the patient usually undergo a core needle biopsy.[5].

3 Conclusion

Complex fibroadenoma is a rare type of tumor, especially cystic, and besides mimicking malignant diseases, increases the risk of cancer. Cystic degeneration could be responsible to cause doubt on diagnostic imaging methods interpretations; therefore, when surgery resection is indicated, it is a mandatory procced to histopathological analysis, that despite being necessary, could represent a tough assignment for the pathologist to differentiate, for example, a cystic fibroadenoma from a phylloid tumor.

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