Case report

Vulvar fibroadenoma: a common neoplasm in an uncommon site
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Published: 28 September 2009


Received: 29 May 2009
Accepted: 28 September 2009

This article is available from: http://www.wjso.com/content/7/1/70

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Abstract

Vulvar fibroadenomas are sporadic lesions informed in the literature and a controversy about origin has been discussed widely. We report a case of a 19 years old woman with a large slow growing mass in the right labia majora with the final diagnosis of fibroadenoma with mammary tissue surrounding it and positive hormone receptors. In this case, we support the origin in ectopic mammary tissue.

Background

Vulvar lesions in general are infrequent. Malignant neoplasms represent no >5% of gynecological cancers, are more frequent at advanced ages, the most common tumors are epithelial, and among these, epidermoid carcinoma comprises 80% [1]. Mesenchymal neoplasms are even less frequent [2]; vulvar fibroadenoma is one of the mammary-like fibroepithelial lesions of uncertain histogenesis, and is extremely rare [2-7]. These lesions have been reported in the medical literature over the past 50 years [2]. Hartung presented the first description of vulvar mammary tissue in 1872.[8] Bardsley and Petterson made reference to 13 cases in the literature of vulvar mammary tissue-originated primary breast carcinomas,[4] and Yin et al. described the first case of ectopic mammary-tissue mucinous adenocarcinoma in vulva.[9]

At present, controversy exists regarding the histological origin of these lesions. The debate includes the postulation of ectopic mammary tissue-derived lesions, of cutaneous apocrine glands, and mammary-like anogenital glands, the latter the most recent of the theories.[2,3,5,7,10] In the majority of the previous medical literature, ectopic mammary tissue has been postulated as the cause of vulvar and anogenital-region lesions. [2] Aberrant or ectopic mammary tissue occurs in 1-6% of the population and is more frequent upper umbilical scar. [2,6,8,11] Customarily, these are most frequently reported during pregnancy and lactation.[4,6,8] Many previous descriptions of mammary-type lesions in vulva assume their ectopic mammary tissue-derived embryological origin. Nonetheless, documentation of tissue surrounding the lesion has been poor over time with respect to demonstrating healthy mammary tissue in vulva.[3] Ectopic mammary and/or breast-like anogenital gland tissue is subject to hormonal response, because both present hormonal receptors by immunohistochemistry, which leads to the potential of developing benign or malignant processes similar to those observed in normally localized mammary tissue.[3,5-7]
Examples of benign and malignant mammary-type ano-
genital tumors have been reported sporadically. These
tumors are morphologically similar to their mammary
counterpants. Among benign lesions are included fibro-
cystic disease-like changes, intraductal papillomas,
fibroadenomas, and phyllodes tumors, while malignant
lesions mentioned comprise ductal, lobular, and muc-
ous adenocarcinomas. [2,4,7,9] We present herein the
case of a patient with a progressive-growth vulvar lesion
with a final report of vulvar fibroadenoma.

Case presentation
An 18-year-old nulligravida Mexican female was referred
to our institution in November 2006 complaining of a
vulvar tumor of progressive growth for the previous 12
months. Previous medical and familial history was not
contributory to the present illness. Physical examination
revealed a 12 × 5-cm tumor located on the right labia
majora (Fig 1). The tumor was soft and movable and not
adhered to skin or other structures. The remainder of the
gynecological, inguinal, and abdominal examination was
reported as normal.

Fine-needle aspiration of the lesion was performed, but
no cells were obtained. Chest x-ray as well as abdomino-
pelvic Computed tomography (CT) scan reported no
masses or retroperitoneal lymph node enlargements.

Patient was programmed for wide tumor excision on Jan-
uary 8, 2007. During surgery, the tumor was found as
firm, not adhered to adjacent structures, and well circum-
scribed. Frozen section of the lesion was performed
and was reported as benign mesenchymal neoplasm. Primary
vulvar-incision closure was performed, and the patient
evolved adequately and was discharged 24 h after the sur-
gery. Final pathologic report was ectopic mammary gland-
originated fibroadenoma. The patient has been followed
up for 17 months and is free of new lesions at present.

Pathology
Grossly a well delimited multilobular mass with a skin
ellipse was received. The measures of the mass was 7 × 4 ×
4 cms. Cut surface shows a lobulated white firm mass
without necrosis or hemorrhage located in the dermis and
subcutaneous tissue no related to skin. Microscopically a
fibroepithelial neoplasm with well defined borders was
seen; collagenized stroma with more cellular areas around
ducts lined by one line of epithelial cells without atypia
supported by a layer of myoepithelial cells (Fig 2). Next to
this lesion areas of normal breast tissue were present (Fig
3). By immunohistochemical stains the neoplasm was
positive to estrogen and progestagen receptors.

Conclusion
In 2006, Atwal published a case of previously docu-
mented supernumerary mammary tissue-originated vul-
var fibroadenoma, describing a lesion that
histopathologically mimicked a fibroadenoma with posi-
tive estrogenic receptors by immunohistochemistry and
with healthy mammary tissue surrounding the lesion.[3]
The presence of ectopic mammary tissue of normal char-
acteristics surrounding a lesion described as fibroade-
noma supports the theory of ectopic mammary tissue, and
concludes that not all fibroadenomas derive from ano-
genital glands similar to breast, as Van der Putte con-
firmed. [12-14]

Carter in 2008 presented an analysis of 18 reports of prior
cases of vulvar fibroepithelial neoplasms, showing an
average patient age at moment of diagnosis and surgical extirpation of 38.7 years (range, 20-60 years), average tumor size was 3.0 cm (range, 0.8-6.0 cm). Difference in tumor size and age at diagnosis of phyllodes tumor and fibroadenoma was not significant. Two cases of bilaterality were reported: one of fibroadenoma, and the other, phyllodes tumor. [2] On the other hand, in 2007, Ahmed in his review describes 10 cases of the literature presenting seven as vulvar and three as anogenital lesions (patient age range, 35-84 years). One male was described as among these patients. Tumor size presentation ranged from 0.7 cm-6.0 cm.[7]

Although in the majority of cases ectopic mammary-tissue origin is assumed, only two cases were documented of lesion- or peripheral-associated mammary tissue, these being phyllodes tumors. In no case does the study describe mammary-like anogenital glands. Lack of documentation on vulvar lesion-adjacent tissue can be a limitation for determining reliable lesion histogenesis. The well-circumscribed nature of the lesion permits its simple excision, which implies the need for a more extensive resection for adequate histological review of the surrounding tissue.

We conclude that mammary-type vulvar fibroepithelial lesion histogenesis remains uncertain. The debate will continue until adequate study is conducted of vulvar lesion-surrounding tissue; its clinical presentation and subsequent behavior are comparable with its counterpart in breast. We should consider in a reserved fashion the literature review by the Editor-in-Chief of this journal.

Our case increases the number of cases that support the origin in ectopic mammary tissue since we were able to find normal mammarian tissue surrounding the neoplasm and has positive for estrogen and progesterone receptors.

Consent
Written informed consent was obtained from the patient for publication of this case report and any accompanying images. A copy of the written consent is available for review by the Editor-in-Chief of this journal.

Competing interests
The authors declare that they have no competing interests.

Authors’ contributions
DCL was responsible for the design and writing of the manuscript. DPM was responsible for the pathologic evaluation and writing of the manuscript. HV was responsible for the literature and case review. CH was responsible for the literature review and writing of the manuscript. LC was responsible for the manuscript completion and critical review. MHL was responsible for the coordination and helped to draft the manuscript. All authors read and approved the final manuscript.

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