Giant vulvar fibroepithelial polyp: A case series*

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ABSTRACT

Fibroepithelial stromal polyp, more commonly known as acrochordon, skin tag, or soft fibroma is a type of mesenchymal tumor occurring among women of reproductive age. Fibroepithelial polyp, although the most common cutaneous tumor, is rare in the vulvovaginal region and there is currently no established protocol in approaching these kinds of lesions. Presented here is a series of cases of gradually enlarging labial masses among reproductive age women. These giant vulvar masses presented as solitary, flesh-colored, polypoid masses, initially non-tender but later becoming associated with local pain. Diagnosis is mainly through history, clinical examination aided by ultrasonography, and histopathologic examination, which would show a central fibrovascular core covered with squamous epithelium. Surgical excision serves as both diagnostic and therapeutic modality for these lesions. Vulvar fibroepithelial polyp do not seem to be as rare as literature says, they are relatively easy to diagnose and presents with benign clinical course.

Keywords: acrochordon, fibroepithelial polyp, skin tag, soft fibroma, vulvar mass

INTRODUCTION

A wide spectrum of mesenchymal tumors can occur in the vulvovaginal region, ranging from benign to locally aggressive and malignant lesions. The diagnosis can be clinically and histologically challenging as various vulvovaginal tumors have overlapping presentations. In addition, literatures pertaining to vulvar diseases were distributed among various specialties, including dermatology, genitourinary, gynecology and pathology. They become even harder to diagnose when these lesions present with unusual clinical features. Benign tumors of the vulva are relatively uncommon and may show nonspecific clinical features.

Literature reports only a handful of cases of giant fibroepithelial polyps, even more rare are those of vulvar origin, and many of which are only case reports.[1] There is no strict definition of "giant" in current literature, but acrochordons usually do not grow larger than 5 cm.[1] For this case series, giant would be defined as fibroepithelial polyp with largest diameter greater than or equal to 5 cm. Although these labial masses are thought to be rare, several cases have recently presented in the department emergency room and outpatient clinic. With limited available researches and no established protocol regarding the approach to this kind of labial mass, the author has decided to take a closer look into some of these vaginal polypoid masses focusing on the fibroepithelial polyps.

CASE 1

A 41-year-old gravida five para five (5005) who presented at the outpatient clinic with one-year history of cystic mass at the left labia minora. It initially presented as a 1x1 cm mass gradually increasing in size for a year, later becoming associated with dragging pain with difficulty in walking and sitting. There was no noted discharge or bleeding from the lesion. On examination, there was a 7x6x5 cm well-circumscribed cystic, soft mass attached to the clitoris and right clitoral hood, which is tender on palpation but with no bleeding nor discharge (Figure 1.1a). The external urethral meatus is smooth with no masses noted. There was no lymphadenopathy. Initial working diagnosis was *clitoral mass to consider epidermal inclusion cyst*. On transperineal ultrasound (Figure 1.2), impression was *infraurethral meatus mass with cyst contents probably inflammatory versus hemorrhagic in origin*.

Patient underwent excision biopsy of clitoral mass under spinal anesthesia. The cystic mass was located at the left labia minora measuring 6x4.5x0.7 cm (Figure 1.1c). On cut section, 50 mL of mucinous fluid was drained. The inner surface of the wall is tan-yellow, smooth and gelatinous (Figure 1.1d). The final histopathology report was Mucous cyst with fibroepithelial polyp (Figure 1.3).

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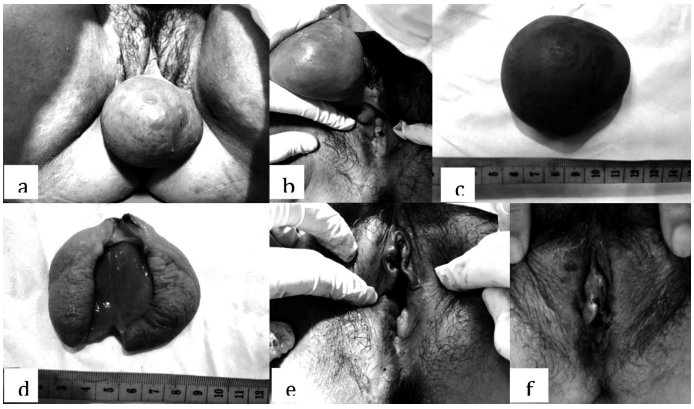

Figure 1.1. (a) to (c) Mucous cyst with fibroepithelial polyp; (d) Cut section of the mass; (e) post-operative excision site; (f) post-operative site day 1.

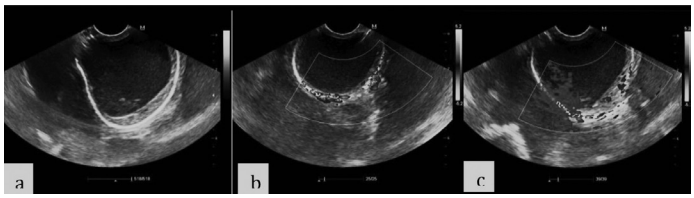

Figure 1.2. Transperineal scan of the pedunculated cystic mass arising from the posterior portion of the urethral meatus. (a) cystic portion of the said mass is unilocular containing homogeneous medium level echo fluid and measures 4.6 x 4.8 x 4.6 cm. The capsule measures 0.1 cm. No solid areas or papillary excrescence seen. The pedicles measures 2.0 x 1.0 cm. (b-c) Color flow mapping of the cyst and its pedicle showed absent vascularity.

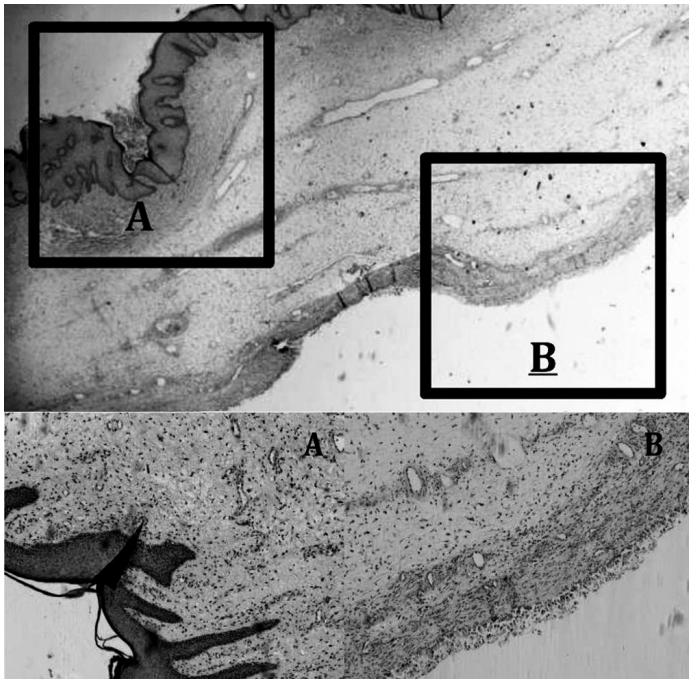

Figure 1.3. Photomicrograph showing, (Top): 2x magnification view of the inner (B) and outer (A) linings; (Bottom): (A). 10x magnification view of the outer lining showing stratified squamous epithelium; (B). 10x magnification view of inner lining showing simple columnar lining.

Case 2

A 23-year old gravida one para one (1001) who came in for four-year history of palpable labial mass. The mass was initially non-tender measuring around 1x1 cm; however, gradual enlargement and occasional tenderness lead to consult at the emergency room. Physical examination showed 5x2x2 cm pedunculated fleshy labial mass on the left labia majora (Figure 2.1a). Primary working impression was *left labial mass to consider lipoma*. Transperineal ultrasound was done showing a striated layer equivalent to subcutaneous layer of the skin with no hypoechoic areas noted with absent flow on color flow mapping; impression was *labial mass with benign sonographic features*. On follow-up consult, primary working impression was shifted from *lipoma to skin tag*.

Patient was then scheduled for excision of labial mass under saddle block anesthesia. On cut section, it showed a smooth lining measuring 0.3 cm with no solid or necrotic areas seen (Figure 2.1d). Specimen was sent for biopsy. Histopathologic diagnosis was **squamous epithelial inclusion cyst**. However, during the conduction of this study, similarities were noted in the histopathologic picture of this case with that of fibroepithelial polyp; hence, slide review was requested. Histopathologic diagnosis (Figure 2.2) is then changed to **Fibroepithelial polyp**.

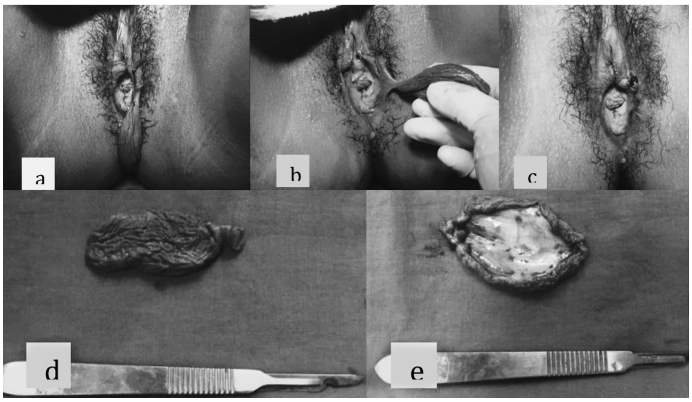

Figure 2.1 (a-b) Fibroepithelial polyp. (c) Post-operative excision site (d-e) Cut section of specimen

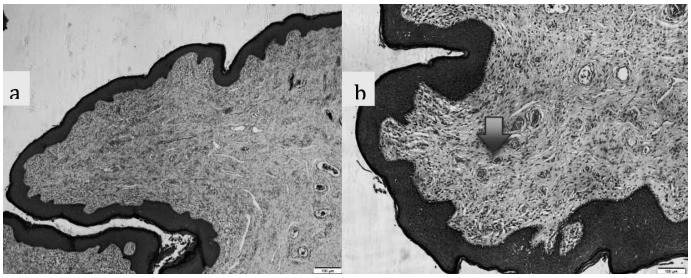

Figure 2.2. Photomicrograph showing (a) 4x magnification view. (b) 10x magnification view of the stratified squamous epithelium with fibrovascular core (blue arrow)

Case 3

A 26-year old gravida one para one (1001) who presented with a two-year history of gradually enlarging labial mass, initially measuring 2x2 cm, non-tender, which gradually enlarged and became associated with intermittent pain. Persistent increase in frequency of pain led to consultation at the emergency room. On gross examination, there was a 5x3x2 cm fleshy non-tender non-friable mass on the left labia (Figure 3.1a) with around 2x1 cm defect (Figure 3.1b) on the posterior portion of the mass attributed to friction of the mass and the underlying skin. Transperineal scan (Figure 3.2) showed a predominantly solid mass with central vascularity noted on color flow mapping with the impression of l*abial mass with benign features*. Pre-operative diagnosis was *labial mass rule out malignancy*.

Patient underwent excision of labial mass under spinal anesthesia. The specimen measured 6.5x5x3 cm, tan-brown doughy lobulated, pedunculated tissue completely surrounded by tan-brown wrinkled skin. There is a 2x1 cm ulcerated break in the overlying skin. Cut section (Figure 3.1e) shows a soft cream-tan solid surface. Final histopathologic diagnosis is **Fibroepithelial polyp** (Figure 3.3).

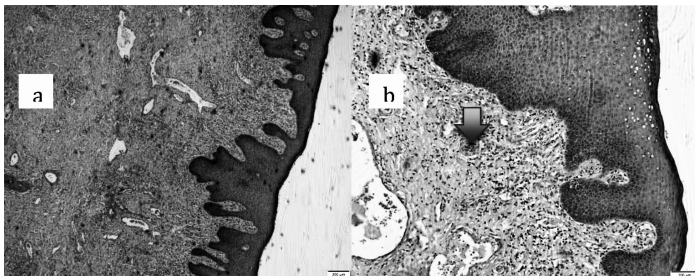

Figure 3.3. Photomicrograph (a) 4x magnification view. (b) 10x magnification view showing stratified squamous epithelium and fibrovascular core (blue arrow)

Case 4

A 40-year old gravida four para four (4003) who presented with 2-year history of gradually enlarging nodular, fleshy, nontender, vaginal mass. Patient has no known comorbidities and has no predisposing factors to infectious causes. She has no other localized or systemic signs and symptoms. At the outpatient department, examination revealed a pedunculated mass (Figure 4.1) at the left labia, measuring 5x6x2cm, smooth, cystic, nontender, with areas of erosion measuring 1.5x1 cm at the inferior pole with no noted discharge nor bleeding. Transvaginal ultrasound (Figure 4.2) showed a pedunculated heterogenous mass

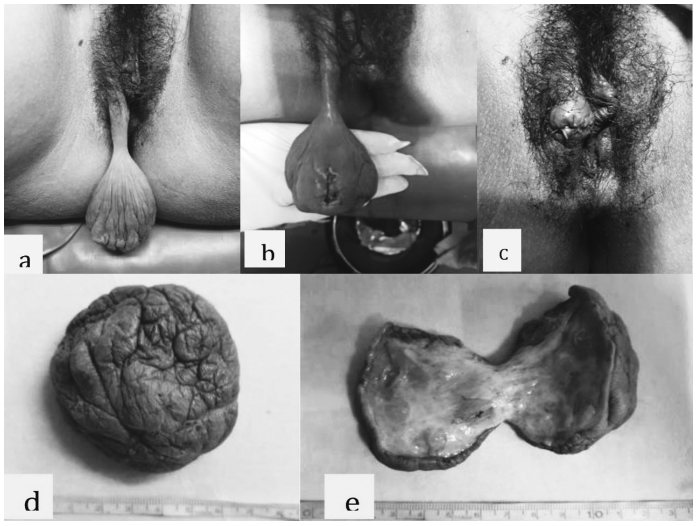

Figure 3.1. (a) Fibroepithelial polyp with (b) erosions; (c) Post-operative excision site; (d) to (e) Specimen cut section

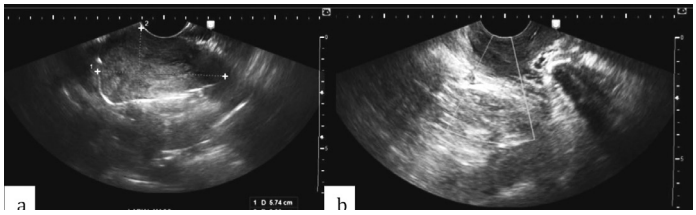

Figure 3.2. Transperineal scan showing (a) predominantly solid labial mass measuring 5.7 x 5.1 x 3.3 cm with a pedicle attached at the right labia majora. (b) Color flow mapping of the mass showed moderate central vascularity

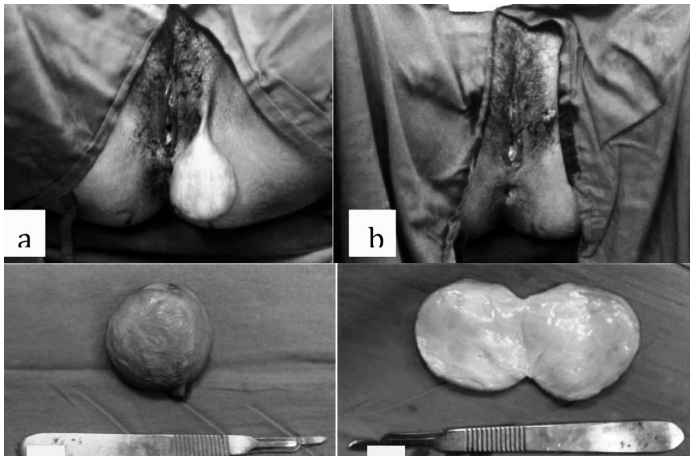

Figure 4.1 Clinical presentation of fibroepithelial polyp, (a) pre-operative (b). Post-operative excision site. (c). Gross specimen. (d). Cut section of specimen

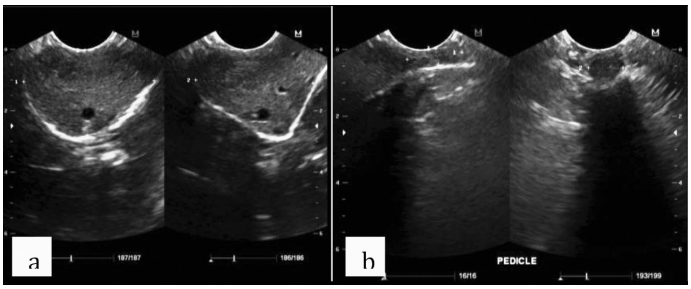

Figure 4.2. Transperineal scan showing a (a) pedunculated heterogeneous mass measuring 4.3 x 3.8 x 2.8 cm, attached to the middle third of the labia majora by a (b) pedicle measuring 1.7 x 1.0 x 0.5 cm.

attached to the middle third of left labia majora with absent color flow. Impression was vulvar mass. Patient underwent excision of the said mass with uncomplicated course. Final histopathologic diagnosis (Figure 4.3) was consistent with **fibroepithelial polyp with chronic inflammation**.

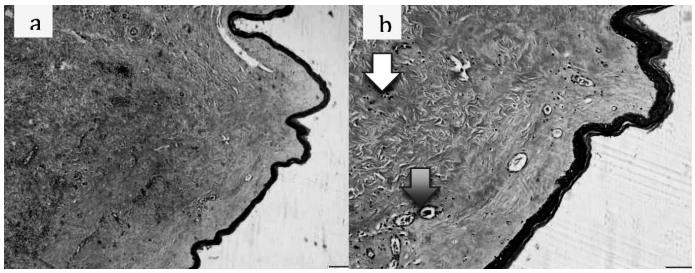

Figure 4.3. Photomicrograph showing (a) 4x magnification view. (b) 10x magnification view of the fibroepithelial polyp showing the stratified squamous epithelium with fibrovascular core (blue arrow) and lymphocytes (yellow arrow)

DISCUSSION

Incidence

Fibroepithelial polyps, although being one of the most common cutaneous lesions, are uncommon tumors in the vulvovaginal region. There are only a handful of cases reported in literature. Acrochordons, not only those of vulvar origin, have an overall incidence of 46% with maximum occurrence in reproductive age group in females.[2] There is a rise of incidence through the fifth decade that by the age of 70 years, 59% of persons may have acrochordons.[1]

Clinical Presentation

Fibroepithelial polyp, also known as acrochordon, skin tag, squamous papilloma or soft fibroma, is a type of mesenchymal tumor occurring among reproductive age, rarely in postmenopausal women.[3] The lesions are usually solitary, measuring 1-2 cm in size, skin-colored polypoid or pedunculated mass.[4] They usually occur in sites of friction, particularly the neck, axilla, inframammary, and inguinal regions. In the vulvar area, they are most commonly found in the labia majora.[5] Symptoms usually include bleeding, discharge, and general discomfort with sensation of a mass.[1]

In these case series, all patients presented with chronic history of gradually enlarging labial mass, initially presenting around 1-2 cm non-tender, and later on becoming associated with dragging pain; hence, causing discomfort in walking and sitting. There were no associated constitutional symptoms and no significant predisposing factors, such as obesity, gravidity, or metabolic syndromes, among these women. They all presented to the emergency room due to persistence of pain on the labial mass.

The labial masses were located in the vulvar region with largest diameter measuring more than 5 cm; hence, they were classified as giant. In a case report by Agarwal et al, they reported one of the largest acrochordon of the vulva measuring 20x16x12cm weighing 3 kilograms. Knowledge that these benign epithelial masses could present at such large sizes would be of great help in approaching these kinds of patients at the outpatient and emergency departments.

Pathophysiology

Acrochordons are said to be associated with type 2 diabetes mellitus, insulin resistance, obesity, dyslipidemias, pregnancy, genetic predisposition, human papilloma virus 6 and 11, acromegaly, Gardner syndrome, Birt-Hogg-Dube syndrome and Nonne-Milroy-Meiges syndrome.[1] However, there is still a lack of literature on these predisposing factors. Large lesions may arise due to proliferation of mesenchymal cells within the hormonally sensitive subepithelial stromal layer of the lower genital tract.[4]

Despite thorough light microscopic studies with conventional staining techniques and electron microscopic and immunohistochemical studies, the pathogenesis of fibroepithelial polyp of the vulva and the true nature of their stromal cells remain uncertain.[7] They have been considered to be hormone-induced hyperplasia of loose subepithelial connective tissue or end stage of granulation tissue.[7]

There are concerns on relating FEPs to suspect sexually transmitted disease but acrochordons themselves are not infectious or malignant.[1] Rarely, stromal cells may show marked atypia; however, progression to malignancy is very rare.[4] Ulceration and inflammation can occur in large acrochordons such that in the third (Figure 3.1b) and fourth cases, which may be secondary to infection at the site of traumatic surface erosion.

Several studies have showed an association between obesity and skin tags.[2] However, these studies were mostly among non-vulvar acrochordons. In the gynecologic cases in this series, patients presented with body mass index ranging from 17 to 26. They did not have any history of hyperglycemia or metabolic syndrome as well. Hence, previously mentioned associations could only be pertaining to acrochordons located elsewhere other than the vulvar region.

Differential Diagnosis

Fibroepithelial stromal polyp of the vulvovaginal region exhibits a wide range of morphological appearances and can be misinterpreted as malignant.[1] Diagnosis of acrochordons in any other part of the body is based on clinical examination alone; however, due to rarity of its occurrence in the vulvar region, biopsy is always indicated,

not only to rule out malignancy, but also to differentiate them from other common benign vulvar lesions.

Table 2 summarizes the clinical presentation and hisopathologic features of the most common benign vulvar masses that were considered in the differential diagnoses of the cases presented in these series.

Bartholin's duct cyst

Bartholin's duct cyst is the most common large vulvar cyst. It is the cystic dilatation of an obstructed Bartholin's duct, occurring at any age, but most often during the third decade, with a lifetime risk of 2%.[8] The Bartholin's duct openings are located at the 5 and 7 o'clock position of the vulvar vestibule. They are usually smaller than acrochordons and ranges from 3 to 5 cm.[9] They usually do not require treatment and unless they become inflamed, where oral antibiotics or incision and drainage can be done or when abscess is present where excision or marsupialization is done.[8]

Epidermal Inclusion Cyst

Epidermal inclusion cyst is the most common small vulvar cyst, they are smooth surfaced, white, yellow, slightly pink, or skin colored papules or nodules averaging 0.5 to 2 cm in size, with firm consistency.[8] The lesion can be solitary or several and occurs secondary to invagination or cystic expansion of epidermis or a hair follicle, and thus are usually found on the hair-bearing areas. On biopsy, they cyst has a wall resembling normal epidermis and is filled with laminated keratin.[9] Treatment is not necessary if asymptomatic; but for tender lesions or in cases where malignancy cannot be ruled out, incision and drainage may be done which would reveal white, caseous material.

Lipoma

Lipomas are the second most common benign mesenchymal tumor of the vulva but the most common soft tissue tumor of adulthood.[8] These are usually located periclitorally and has a softer consistency than fibromas. On cut section, it consists of a soft, yellow and lobulated substance, which on histology, would show a well-encapsulated mass, more homogenous than that of a fibroma, consisting of mature adipocytes.

DIAGNOSIS

Approach

Most benign skin lesions are diagnosed on the basis of clinical appearance and history. If the diagnosis of a lesion is uncertain, or if a lesion has exhibited unexpected changes in appearance or symptoms, a diagnostic procedure is indicated to confirm the diagnosis. In addition to a standard medical history and review of systems, patients with vulvar lesions should be asked about the presence of non-vulvar lesions and their normal skin care and hygienic routines to rule out systemic disease or an exogenous source.

Histopathology

Fibroepithelial polyps typically have a central fibrovascular core, covered by squamous epithelium, and contain atypical stromal cells including stellate and multinucleated cells, which are present near the epithelial-stromal interface (Figure 2.2b).[10] The stroma containing blood vessels may contain a mixed infiltrate of neutrophils and lymphocyte suggesting inflammation (Figure 4.3b).[4]

Imaging

In addition to histopathologic evaluation, imaging is important in the diagnostic work up of fibroepithelial stromal polyps. It allows for evaluation of blood supply and flow and demonstrates the origin and extent of the lesion.[5] On ultrasound, this may be seen as echogenic solid mass with color Doppler flow showing central vascularity.

In the diagnosis of gynecological neoplasms, computed tomography scan and magnetic resonance imaging might be preferred, especially in patients with a history of carcinoma.6 However, ultrasound examination may be a more suitable first-line diagnostic approach in terms of cost-effectiveness, wide availability, speed and the capacity for dynamic exploration.

Management

A good history and clinical examination, though necessary, is not enough to diagnose these benign masses themselves. Biopsy would always be essential not only to rule out malignancy but also to differentiate them from other benign skin lesions.[6]

Benign lesions that are symptomatic or cosmetically bothersome can often be managed with simple procedures, such as cryotherapy, electrosurgery, or excision. In our cases of giant fibroepithelial polyps, excision biopsy under spinal anesthesia was done in all cases. They just differed in closing of the excision site as to either with suture or cautery; however, both have comparable healing with patients examined two weeks post-operatively. All patient tolerated the procedure well without any complication and sent home within the day with oral pain medications and ferrous sulfate supplement.

Prognosis

Although rare, fibroepithelial polyps can recur, especially if they are not completely excised, but the rate of recurrence is currently unknown.1 These polyps have a very low-grade for malignant potential. As a result, these patients do not need to follow up on a regular basis but be appropriately counseled after initial treatment.

SUMMARY

Vulvar fibroepithelial polyp, seemingly rare in literature, may actually be more common than previously thought. The knowledge that these lesions could grow as large would greatly help in diagnosing and counseling these patients. Diagnosis would still largely depend on clinical correlation with ultrasound imaging and histopathologic diagnosis, as it is important to rule out malignancy. Management would be through excision at the attachment, which could be done in an outpatient basis. Long-term recurrence is rare but is outside the coverage of this report as patients included were only seen less than a year of this publication. ■

Table 1. Summary of the clinical presentation, diagnosis and histopathology of the cases presented

	Case 1	Case 2	Case 3	Case 4
Age/ Gravidity Parity	41/G5P5(5005)	23/G1P1(1001)	26/G1P1(1001)	40/G4P4 4003)
Body Mass Index (Classification)	26.2 (Obese I)	20.81 (Normal)	No data	17.11 (Normal)
Description	7x6x5 cm, cystic	5x2x2 cm pedunculated fleshy	5x3x2 cm fleshy non-tender non-friable	5x6x2cm, smooth, cystic, nontender
Location	Right clitoral hood	Labia majora, left	Labia majora, right	Labia majora, left
Chronic History	1 year	4 years	2 years	2 years
Constitutional signs	None	None	None	None
Local Signs	Tenderness, no discharge	Tenderness, no discharge	Non-tender, 2x1 cm defect on posterior portion with minimal serous discharge	1.5x1 cm defect at the inferior pole with no noted discharge nor bleeding
Preoperative diagnosis	*Clitoral mass to consider epidermal inclusion cyst*	*Labial mass, left, to consider lipoma*	*Labial mass rule out malignancy*	*Vulvar mass*
Histopathologic Diagnosis	**Mucous cyst with fibroepithelial polyp**	**Fibroepithelial polyp**	**Fibroepithelial polyp**	**Fibroepithelial polyp with chronic inflammation**

Table 2. Differences in clinical presentation and histopathologic picture of common benign vulvar masses

	Fibroepithelial polyp	Bartholin's duct cyst	Epidermal inclusion cyst	Lipoma
Age	Reproductive age	Third decade	Reproductive age	Middle adulthood
Location/ Configuration	Intertriginous area; Usually polypoid, exophytic, attached to surrounding skin by a stalk	Vulva, 5 and 7 o'clock position, distal to the hymenal ring	Hair-bearing areas; or vulvovaginal area, at the previous episiotomy site; Firm, moveable nodule	Periclitorally or within labia majora; soft, moveable
Size	Variable	3-5 cm	0.5 to 2cm	<3cm can grow up to 44 pounds
Margins	Merges with normal	Distinct	Well-circumscribed	Well-encapsulated
Histology	fibrovascular cores covered by benign squamous epithelium	Cyst lined by ductal squamous metaplastic epithelium	Wall resembles normal epidermis filled with laminated strands of keratin	Prominent areas of connective tissue with mature adipose cells
Clinical Course	Benign, rare recurrence	Benign; Rarely, lesion in this area accounts for vulvar carcinoma	Benign; non-tender and slow growing	Benign
Treatment	Excision	None, unless infected: Marsupialization	None, unless infected: Incision and drainage	Excision

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