

# Skene's Gland Adenofibroma: A Diagnostic Challenge of a Rare Entity

Sawsan Ismail <sup>1</sup>, Ryan Elshimali <sup>2</sup>, Hussein Khaddour <sup>3</sup>, Yahya Elshimali <sup>4\*</sup>

<sup>1</sup>Department of Pathology, Faculty of Medicine, Tishreen University, Lattakia, Syria

<sup>2</sup>Department of Pathology and Laboratory Medicine, 4525 MacDonald Research Laboratories, David Geffen School of Medicine at UCLA, Los Angeles, USA

<sup>3</sup>Faculty of Pharmacy, Al-Sham Private University, Syria

<sup>4</sup>Division of Cancer Research and Training, Department of Medicine, Charles R. Drew University of Medicine and Science, Los Angeles, USA

Copyright: ©2022 Elshimali Y, et al. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution and reproduction in any medium, provided the original author and source are credited.

**Abstract:** Skene's glands are a pair of female paraurethral glands with similar embryologic, physiologic, and pathologic features to the male prostate. Cysts and abscesses represent the most common pathological changes affecting Skene's gland, whereas adenofibromas represent an extremely rare entity. Herein, we present a rare case report of adenofibroma in the Skene's gland of a postmenopausal female.



\*Correspondence:  
Yahya Elshimali  
felshimali@gmail.com

**Keywords:** Skene's Gland • Adenofibroma • Immunohistochemistry Staining

Received: 29 April 2022

Accepted: 27 May 2022

Published: 30 May 2022

**Citation:** Ismail S, Elshimali R, Khaddour H, Elshimali Y. Skene's gland adenofibroma: A diagnostic challenge of a rare entity. *Int J Clin Invest Case Rep.* 2022; 1(1):7-10.

## INTRODUCTION

Skene's glands are defined as a pair of female paraurethral glands with similar embryologic, morphologic, pathologic, and physiologic features to the male prostate. These structures were first described in 1672 by de Graaf [1] under the term "female prostate" due to their resemblance to the male prostate gland, and later in 1880, they were emphasized and named after the Scottish gynecologist Dr. Alexander Skene [2].

Skene's glands are situated around the clitoris in the anterior wall of the vagina and open at the distal third of the urethra [3]. Morphologically, they are composed of both glandular and ductal structures lined by pseudostratified columnar epithelium and surrounded by fibromuscular connective tissue. Skene's glands cysts and abscesses represent the most common pathological changes affecting paraurethral glands due to a possible role of obstruction and trauma in triggering inflammation. Other rare findings include adenocarcinomas which were reported in 15 cases, whereas adenofibroma of Skene's gland was reported (to our knowledge, only one case in the literature)[4,5].

The positive expression of Prostate-Specific Antigen (PSA) in normal Skene's glands was first demonstrated by Tepper et al. and Pollen et al. in 1984. This immunohistochemical profile indicates additional similarities with the masculine prostate through secretion of PSA and highlights the possibility of investigating pathological processes affecting Skene's glands through monitoring elevation in PSA levels [6,7].

Herein, we present to our knowledge the second case report of a Skene's gland adenofibroma with a brief review of morphologic characteristics and differential diagnosis.



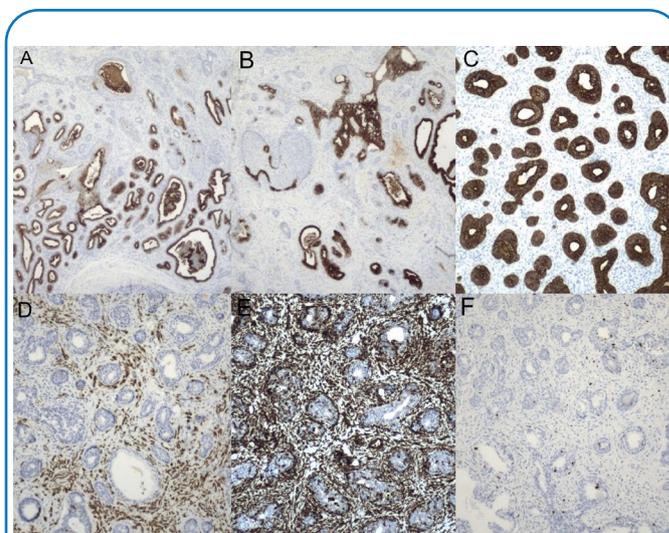
Scan this QR code to see the article online

## CASE PRESENTATION

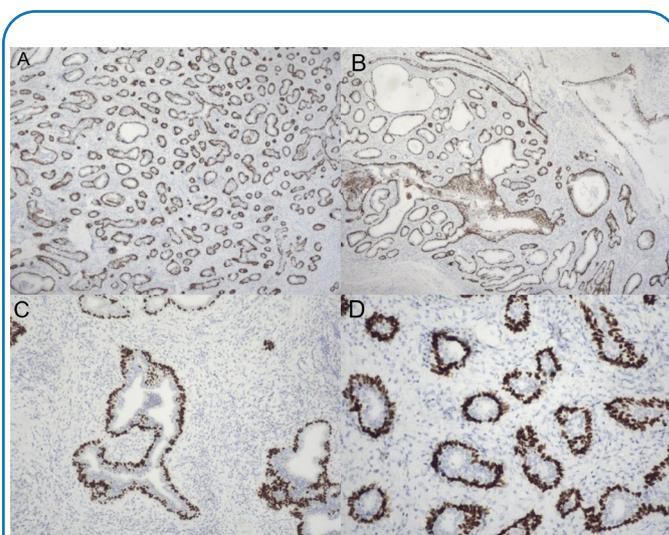
We report the case of a 69-year-old female who presented to the gynecology clinic at our institution due to a palpable painless mass at the urethral region with no other complaints. Medical and family history were unremarkable. Following physical examinations, the patient was scheduled for surgical excision of the lesion.

## PATHOLOGICAL FINDINGS

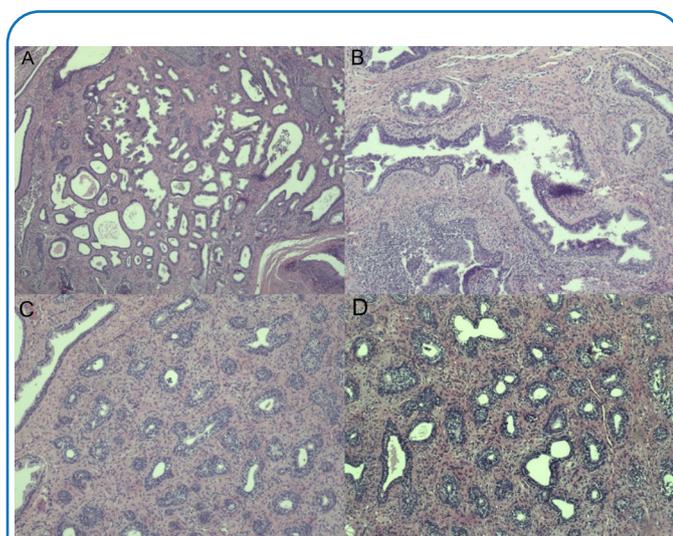
Macroscopic examination revealed a firm tan nodule that is soft in consistency measuring 1.4x1x1 cm. Microscopic examination demonstrated a biphasic proliferation of glandular and stromal components. The glands were lined by two layers of pseudostratified columnar epithelial and myoepithelial cells and surrounded by dense fibromuscular stroma with scattered lymphocytes and plasma cells (Figure 1). Immunohistochemical examination with appropriate controls revealed a strong positive expression of PSA and Pan-cytokeratin AE1/AE3 in epithelial components, whereas the stromal components demonstrated positive expression of SMA and Vimentin. Ki-67 grade was determined as less than 5% (Figure 2) and P63 demonstrated a strong positivity in myoepithelial cells (Figure 3). Following detailed morphologic and immunohistochemical examinations, the final diagnosis was confirmed as an adenofibroma of the Skene's gland.



**Figure 2:** Immunohistochemical examination; (A,B) Positive expression of PSA; (C) Positive expression of Pan Cytokeratin; (D) Positive expression of SMA; (E) Positive expression of Vimentin; (F) Ki-67<10%.



**Figure 3:** Immunohistochemistry reveals strong positivity for P63; (A) Original magnification x40; (B) Original Magnification x100; (C) Original magnification x200; (D) Original magnification x400.



**Figure 1:** (A) Morphologic features of glandular and stromal hyperplasia: HE X40; (B) Morphological examination highlighting prostate gland-like components: HE X200; (C,D) Morphologic features of transitional cell-like metaplasia: HE X100.

## DISCUSSION

Adenofibromas are benign tumors characterized by the biphasic proliferation of epithelial and mesenchymal components. These neoplasms are usually diagnosed in the breast, ovary, and uterine, and mostly affect postmenopausal women with a history of hormonal therapy, whereas paraurethral adenofibromas are extremely rare neoplasms,

with the first case report described by Chong et al in 2010 [8,9].

Physical and radiological examinations help establish the primary diagnosis. MRI represents a reliable diagnostic method in addition to its role in determining treatment modalities and surgical interventions. Nevertheless, histological and immunohistochemical examinations are crucial to confirm the diagnosis.

Histologically, adenofibromas are characterized by a biphasic proliferation of glandular and stromal components. The epithelial component in our case was represented through the crowding of glandular structures and hyperplasia of epithelial luminal cells with transitional features, whereas the mesenchymal component was demonstrated through the proliferation of smooth muscle fibers of Skene's gland stroma [10,11].

Immunohistochemistry played a major role in confirming the diagnosis and assessing the peculiarity of our case. The paraurethral origin of the neoplasm was confirmed through the strong positive expression of PSA, whereas AE1/AE3 and SMA positivity highlighted the glandular and stromal structures, respectively. Also, the positive expression of P63 in myoepithelial cells confirm the benignity of the lesion [8,10,11].

Despite similarities with Skene's gland hyperplasia, the diagnosis was concluded as an adenofibroma, given the presentation of the lesion as a single well-defined nodule with a biphasic proliferation of epithelial and mesenchymal components, in contrast to the multinodular growth patterns of Skene's gland hyperplasia.[12]

Other differential diagnoses include the urethral caruncle which was excluded due to the absence of inflammation and vascular proliferation. In addition to less likely differential diagnoses including leiomyomas which lack glandular proliferation.

Skene gland adenocarcinoma has histopathological features similar to those of the acinar prostatic

adenocarcinoma with variable cribriform, fused, and poorly formed glands with a Gleason score of 4+4=8 in most of the reported cases. Immunohistochemical markers for Skene gland adenocarcinoma include PSA, P501S (also known as prostein), homeobox protein NK-3 Homolog A (NKX3.1), and AMACR. There are a few case reports of Skene gland adenocarcinomas with intestinal differentiation that are positive for cytokeratin 20 (CK20), the caudal-related family of CDX homeobox genes (CDX2), and mucin 2 (MUC2) and negative for CK7. The origin of Skene gland adenocarcinoma from the paraurethral glands can be confirmed with the prostatic intraepithelial neoplasia 4

(PIN-4) cocktail involving cytokeratin, p63, and racemase. p63 is a basal cell marker in transitional type epithelium of the normal Skene's gland. Lack of atypia, mitoses, and normal staining of basal cells with p63 favors Skene's gland adenofibroma over adenocarcinoma [8,11].

Due to the extremely limited studies regarding Skene's gland's benign lesions, there is no consensus guideline regarding the treatment of Skene's gland adenofibromas. In 2012, Dwyer suggested a medical and surgical approach for the management of Skene's gland lesions. The medical management includes watchful monitoring and infection prevention with antibiotics, whereas the surgical interventions demonstrate several options including needle aspiration, partial or total resection. In our case, surgical excision was performed as a treatment and diagnostic method [10,13].

## CONCLUSION

In conclusion, although Skene's gland reveals similar morphological and pathological features to the male prostatic gland, diagnosis of this rare finding represents some challenge that requires detailed morphological and immunohistochemical investigations. Furthermore, it is highly recommended to test for PSA in the clinical setting that have significant value in the diagnosis of Skene's adenofibroma or adenocarcinoma when elevated.

## CONFLICT OF INTEREST

The authors declare that they have no conflict of interest.

## DECLARATIONS

- Ethics approval: Not applicable for case reports at our institution.
- Consent for publication: Informed consent was obtained from the patient for publication of this case report and any accompanying images.
- Availability of Data and material: Not Applicable.
- Funding: This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

## References

1. Klein M. De Mulierum Organis Generationi Inservientibus (1672) of R. De Graaf. *Le Scalpel*. 1962; 115:109-13.
2. Skene AJ. Anatomy and pathology of two important glands of the female urethra. *Am J Obstet Dis Women Child*. 1880; 13(2):265-270.
3. Huffman JW. The detailed anatomy of the para-urethral ducts in the adult human female. *Am J Obstet Gynecol*. 1948; 55(1):86-101.
4. Tregnago AC, Epstein JI. Skene's Glands Adenocarcinoma: A Series of 4 Cases. *Am J Surg Pathol*. 2018; 42(11):1513-1521.
5. Saeed F, Osunkoya AO. Skene gland adenocarcinoma: Clinicopathologic features, comprehensive biomarker analysis, and review of the literature. *Pathol Int*. 2021; 71(10):712-714.
6. Pollen JJ, Dreilinger A. Immunohistochemical identification of prostatic acid phosphatase and prostate specific antigen in female periurethral glands. *Urology*. 1984; 23(3):303-304.
7. Tepper SL, Jagirdar J, Heath D, Geller SA. Homology between the female paraurethral (Skene's) glands and the prostate. Immunohistochemical demonstration. *Arch Pathol Lab Med*. 1984; 108(5):423-425.
8. Chong Y, Eom M, Park KH, Chung HC, Ro JY. Adenofibroma of Skene's Duct: A Case Report. *Patholog Res Int*. 2010; 2010:318973.
9. Bettaieb I, Mekni A, Bellil K, et al. Endometrial adenofibroma: a rare entity. *Archives of Gynecology and Obstetrics*. 2007; 275(3):191-193.
10. Wyckoff Facog ET, Cua GM, Lieberman L, Akki AS. The Skene's gland cyst that was not: an atypical presentation of a leiomyoma. *J Obstet Gynaecol*. 2020; 40(2):281-282.
11. Lucioni A, Rapp D, Gong E, Fedunok P, Bales G. Diagnosis and management of periurethral cysts. *Urologia Internationalis*. 2007; 78(2):121-125.
12. Kazakov DV, Stewart CJ, Kacerovska D, et al. Prostatic-type tissue in the lower female genital tract: a morphologic spectrum, including vaginal tubulosquamous polyp, adenomyomatous hyperplasia of paraurethral Skene glands (female prostate), and ectopic lesion in the vulva. *Am J Surg Pathol*. 2010; 34(7):950-955.
13. Dwyer P. Skene's gland revisited: function, dysfunction and the G spot. *Int Urogynecology J*. 2012; 23(2):135-13