

Ectopic prostatic tissue in vagina – case report

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Summary

During embryonic development, both glandular parenchyma of prostate in a male fetus and paraurethral Skene's glands in a female fetus develop from pelvic urethra endoderm. This common embryological origin results in finding prostatic tissue even in the lower genital tract in women. Herein, the authors present a case of polypoid lesion in vagina consisting solely of glandular elements without squamous component, which stained negative for prostatic markers, but morphologically identical to normal prostatic tissue. A patient, 57-years-old came to the Clinic, with a cystic change in the petiole, which size being 30×17×15 mm, on the left vaginal wall adjacent to introitus. The cystic change was excised and a preparation was sent to a histopathological examination. The histopathological examination included serial Hematoxylin and Eosin stained sections, along with immunohistochemical panel. It was concluded that it was ectopic prostatic tissue or ectopic paraurethral gland tissue within vaginal mucosa. Partially, epithelium at the surface of our polypoid lesion showed immature squamous metaplasia, vaginal intraepithelial neoplasia - VaIN II/III, and transitional cell metaplasia. Gland formations having benign features were within base of the change, at the resection lines, while dysplastic epithelium was fully removed.

Key words: Vaginal tubulosquamous polyp; Skene's glands; Ectopic prostatic tissue.

Introduction

Paraurethral or Skene's glands are located laterally to urethra and they are a homologue of the male sex gland prostate. During embryonic development, glandular parenchyma of prostate in a male fetus and paraurethral Skene's glands in a female fetus develop from pelvic urethra endoderm. These glands were first described by Regeneri de Graf in 1672, and in 1880 Skene discovered two ducts merging into a common outlet canal which opens within vestibule of vagina, against external urethral opening. [1]. The common embryonic development results in finding the prostatic tissue even in the lower genital tract in women [2]. Ectopic prostatic tissue may be found within cervix uteri and tubulosquamous polyps of vagina. These are sparsely, morphologically similar lesions showing positive immunohistochemical staining with prostatic markers. It has been suggested to refer these changes as paraurethral Skene's glands which are a female equivalent of male prostate [3]. Herein, the authors present a case of polypoid lesion in vagina consisting solely of glandular elements without squamous component, which stained negative for prostatic markers, but morphologically identical to normal prostatic tissue.

Case Report

A patient, 57-year-old, G3 P1, came to the Clinic due to abundant vaginal discharge. The patient reported that she had known about the existence of the polypoid cystic formation within her vagina for 15 years, gradually having been increased, but it did not impose her any hardship, while Pap smear and colposcopy findings were always regular. She reported being treated for hypertension and diabetes, as chronic diseases, and that she had had gallbladder and tonsils operated on. Her pelvic exam found a cystic change in the petiole, 30×17×15 mm in size, on the left vaginal wall adjacent to introitus with areas of necrosis on the surface. Bimanual pelvic exam and ultrasonography did not find any other characteristics. The cystic change was excised and a preparation was sent to a histopathological examination. The histopathological examination included serial Hematoxylin and Eosin stained sections, along with immunohistochemical panel. The examined material contained polypoid structure formed mainly of proliferations of glandular structures. Proliferated glandular structures, as predominant structural elements, were surrounded with stratified cuboidal epithelium with two layers of cells – basal cell layer and luminal cell layer. Focally, micropapillary structures were encountered within these glands. Their papillary core was made of stromal connective tissue, while surface was covered with stratified epithelium. No mitoses or cellular atypia were observed in epithelial cells. (Figures 1A-C) Proliferative marker Ki67 sparsely stained nuclei of glandular epithelium, nuclei of suprabasal squamous cells, while focally staining nuclei in the upper part of the metaplastic squamous epithelium (Figure 1D). Immature squamous metaplasia was present on the surface associated with more serious changes morphologically consistent with focal, moderate to high grade epithelial dysplasia (vaginal intraepithelial neopla-

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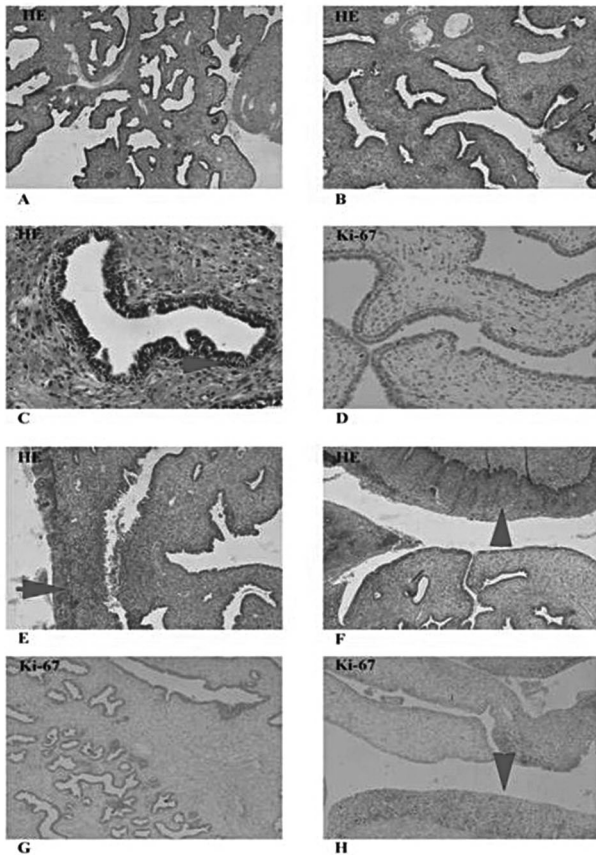


Figure 1. — Tubulosquamous polyp (HE staining and immunohistochemical staining to Ki-67). A) (HE, original magnification $\times 50$) – peduncle of the polyp. B) (HE, original magnification $\times 50$) – the tubulosquamous polyp, a view of the structure; C) (HE, original magnification $\times 200$) – a detail of glandular structure with double layered epithelium, layer of basal cells (red arrow) and layer of luminal, columnar cells. D) (Ki-67, original magnification $\times 200$) – most of the glandular epithelium shows low proliferative activity, most of the cells are Ki-67 negative. E) (HE, original magnification $\times 50$) – immature squamous metaplasia (red arrowhead). F) (HE, original magnification $\times 50$) – VaIN II/III (red arrowhead). G) (Ki-67, original magnification $\times 50$) – Ki-67 negative regular polypoid epithelium and stroma. H) (Ki-67, original magnification $\times 50$) – intense Ki-67 immunoreactivity of VaIN (red arrowhead).

sia - VaIN II/III) (Figures 1E, F). Transitional cell metaplasia without dysplasia was observed. The rest of the polypoid structure was covered with regular stratified squamous epithelium and stromal, loose connective tissue. Additionally, nuclei of glandular cells showed strong diffuse androgen receptor (AR) positivity (Figures 2A, B). HMW CK stained basal cell layer of glandular epithelium (Figures 2C, D) CD10 positivity was mainly restricted to luminal surface of glandular epithelium (Figures 2E, F). The glandular cells and stromal cell's nuclei expressed estrogen receptor (ER) and progesterone receptor (PR), with squamous cells showing ER positivity (Figures 3A-D) Examined material stained negative with PSA, PSAP, and alpha-methylacyl-CoA racemase (AMACR) (Figures 3E-J). It was concluded that it was ectopic prostatic tissue or ectopic paraurethral gland tissue within vaginal mucosa

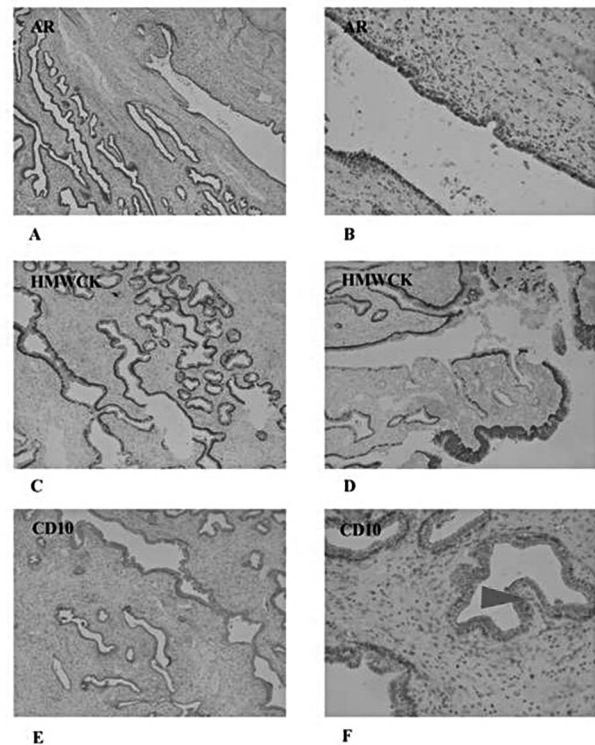


Figure 2. — Tubulosquamous polyp (immunohistochemical staining to AR, HMW CK and CD10). A) (AR, original magnification $\times 50$) – strong, diffuse, nuclear AR immunoreactivity. B) (AR, original magnification $\times 200$) – AR positive glands of tubulosquamous polyp. C) (HMW CK, original magnification $\times 50$) – the same pattern of immunoreactivity as in regular prostatic tissue. D) (HMW CK, original magnification $\times 200$) – HMW CK immunoreactive basal cells. E) (CD10, original magnification $\times 50$) – CD10 immunoreactive luminal surface of glandular epithelium. F) (CD10, original magnification $\times 200$) – CD10 immunoreactivity (detail).

with immature squamous metaplasia on the surface and foci of moderate to severe dysplasia (VaIN II/III). Gland formations having benign features were within base of the change, at the resection lines, while dysplastic epithelium was fully removed.

Discussion

Vaginal polyps are a heterogeneous type of lesions which in histological terms most often belong to fibroepithelial type of tumors [4]. They may originate from mesenchyme, such as leiomyoma, rhabdomyoma and embryo rhabdomyosarcoma (Sarcoma botryoides), squamous epithelium, or it can be of a mixed type [5-7]. One more type is added to this type of polyps and it consists of squamous cells and tubules in fibrous stroma mixture. It is a particular entity and is called tubulosquamous polyp which features correspond to ectopic prostate tissue or Skene's glands in histological terms [8]. This paper described a tubu-

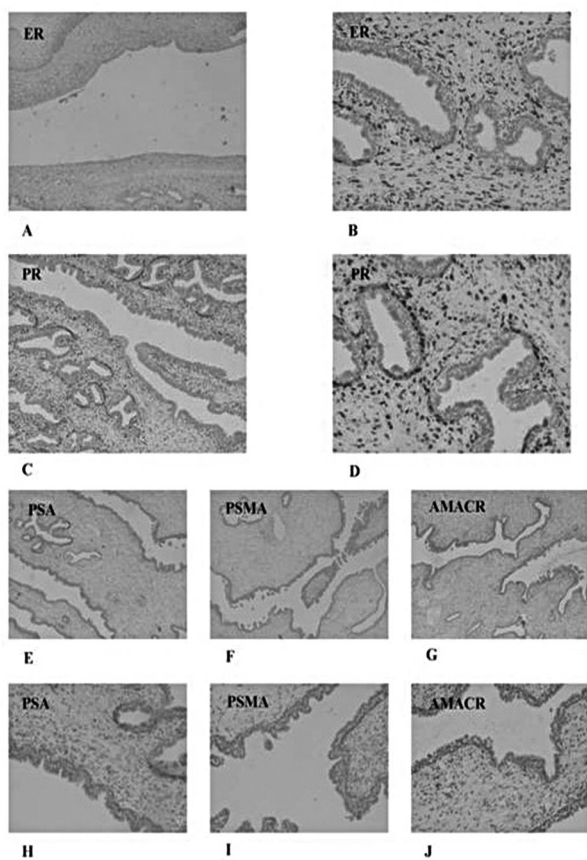


Figure 3. — Tubulosquamous polyp (immunohistochemical staining to ER, PR, PSA, PSMA and AMACR). A) and C) (ER and PR, original magnification $\times 50$) – immunoreactivity of stromal cells. B) and D) (ER and PR, original magnification $\times 200$) – glandular epithelium is negative for ER and PR. E), F), and G) (PSA, PSMA and AMACR, original magnification $\times 50$) – negative immunostaining. H), I), and J) (PSA, PSMA and AMACR, original magnification $\times 200$) – negative immunostaining.

losquamous polyp confirmed by immunohistochemical methods. These changes mainly manifest as vaginal cysts or polyps, as it was the case in the present patient. [4] Limited number of reported cases of ectopic prostatic tissue in vagina implies that this condition is extremely rare. Since there is a battery of immuno-stains specific for prostatic tissue, immunohistochemical staining for prostatic markers (PSA, PSAP) should facilitate the diagnosis. On the other hand, ectopic prostatic tissue in lower female tract often shows focal PSA and/or PSAP positivity, and even negativity [2, 8]. Therefore, negative staining for prostatic markers does not exclude the diagnosis of ectopic prostatic tissue, as observed in the present reported case. Androgen receptor (AR) could be an additional valuable marker in diagnosing PSA/PSAP-negative ectopic prostatic tissue in female genital tract, since normal prostatic glands show AR

positivity [9]. Glandular cells in the polypoid lesion showed strong diffuse AR positivity which also confirms prostatic-like tissue in our material. Additionally, Kim *et al.* described transitional cell metaplasia within the cervix of this patient, which could explain the same changes observed in the present case of ectopic prostatic tissue, along with strong AR positivity [10]. The present authors have also observed ER positivity in glandular and stromal cells, which was also seen in some tubular elements of tubulosquamous polyps described earlier. Additionally, in this reported case, HMW CK stained basal cell layer, analogous to normal prostatic tissue in the male, while tubules in tubulosquamous polyps showed focal HMW CK positivity or negativity. Glandular cells in the material stained for CD10, which was also observed in glandular elements of tubulosquamous polyps [8]. The ectopic prostatic tissue was AMACR negative, similar to most prostatic benign tissue. [11, 12]. There are some theories on evolution of tubulosquamous vaginal polyp which may originate from Wolffian and Müller's structures or from urogenital sinuses, but it may also have vaginal adenoma origin [8]. Other theories include remains of mesonephric and Skene's glands being equivalent to male prostatic tissue [7, 8]. This theory is a result of the fact that some samples showed prostate-specific antigen (PSA) and prostate-specific membrane antigen (PSMA) positivity. In the present case, structures resembling ectopic Skene's glands were found, but these were PSA and PSMA negative. Differential diagnosis of tubulosquamous vaginal polyp mainly involves benign mixed tumor of vagina consisting of epithelial and stromal elements [13, 14]. Epithelial component consists of benign squamous cells, rarely glands, while numerous spindle cells without atypia, usually being immunoreactive to cytokines, dominate in the stromal component. This benign mixed tumor is clearly limited and it occurs in young individuals within hymenal area. On the contrary, tubulosquamous polyp shows domination of epithelial cells, stroma is hypocellular, and lesions are not usually limited and they occur in elderly women, as it did in the present case. In differential diagnosis terms, Brenner tumor of the vagina is considered and it may resemble tubulosquamous polyp with transitional and not squamous epithelium [15]. Hypothetically, in differential diagnosis terms, there may be squamous cancer, but a difference is that squamous cancer does not have tubules, and nuclear atypia and mitotic figures are not present in tubulosquamous polyp.

Conclusion

This paper describes a rare case of vaginal polyp established as a particular entity. Ectopic prostatic tissue or Skene's glands tissue are considered as a benign condition, although follow-ups are necessary in most cases.

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