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Pathology

EPIDERMOID CYST IN UTERINE CERVIX- A RARE AND UNUSUAL LOCATION

Dr Farha Naaz*	Postgraduate Final year, Department of Pathology, Deccan College of Medical Sciences, Hyderabad, Telangana, India. *Corresponding Author
Dr Asfiya Fatima	Postgraduate 1st year, Department of Pathology, Deccan College of Medical Sciences, Hyderabad, Telangana, India.
Dr Idrees Akhtar Afroze	Professor and HOD, Department of Pathology, Deccan College of Medical Sciences, Hyderabad, Telangana, India.

ABSTRACT Cervical epidermoid cysts and uncommon benign cystic lesions were identified in a 50-year-old woman. The patient presented with heavy menstrual bleeding and lower abdominal pain, and after initial treatment with endometrial biopsy and hemostatic uterine curettage, a total abdominal hysterectomy with bilateral salpingo-oophorectomy was performed. The gross examination of the specimen revealed a hypertrophied cervix with a cyst filled with grey-white substance, as well as a polypoidal mass in the fundus and intramural fibroids. Histopathological examination confirmed the diagnosis of a cervical epidermoid cyst as an incidental finding. Squamous metaplasia was confined to the cervical mucosa. The precise etiology remains unclear, but post-parturient implantation of vestigial embryonic tissue might be a contributing factor as there is no other associated etiology in this case. This case report emphasizes the importance of considering epidermoid cysts in the differential diagnosis of cervical masses and highlights the need for further research to better understand the formation and management of these rare cysts.

KEYWORDS : Epidermoid cyst, Uterine cervix, Squamous metaplasia

INTRODUCTION

Epidermoid cysts, typically presenting as benign cystic lesions on the face, scalp, and trunk, rarely involve glabrous skin of the palms, soles, and genitalia [1-4]. Notably, persistent confusion persists within the medical literature regarding accurate terminology. Terms like "epidermal cyst," "infundibular cyst," and "keratinous cyst" are often used interchangeably with "epidermoid cyst," leading to potential inaccuracies.

Ackerman [1] proposed a likely definitive and simplified classification for keratinous cysts, acknowledging the possibility of rare hybrid variants. The predominant type (90%), termed the epidermal or epidermoid cyst, demonstrates lining by keratinized epithelium with a well-defined granular layer. Internally, the cyst contains laminated keratin devoid of calcification.

While traumatic epidermal inclusion, particularly in digital lesions, may contribute to cyst formation [6], the majority likely originate from cystic dilatation of the infundibular region of hair follicles. A subset of these cysts demonstrates histological features resembling seborrheic keratosis within their cyst wall [1], as evidenced by the research conducted by Choi et al [5].

HPV (human papillomavirus), particularly types 57 and 60, have been identified in some keratinous cysts, including those in palmoplantar locations, suggesting a potential etiologic role in their development [1, 5-8].

The pilar, or trichilemmal cyst, represents the second type of keratinous cyst. It exhibits a predilection for the scalp and microscopically demonstrates trichilemmal keratinization. This process features abrupt keratinization without formation of a granular layer and an irregular interface between keratinized and non-keratinized cells. Unlike the epidermal cyst, the internal keratin lacks lamellation, may retain nuclei, and frequently shows focal calcification.

Regarding epidermoid cysts in the kidney with nephrolithiasis, these are rare occurrences. The pathogenesis remains largely unclear, although chronic irritation from kidney stones might be a contributing factor.

Epidermal cysts of the clitoris or labia majora, although documented in case reports, are exceedingly rare in adolescent females [3, 4, 9-13]. Uterine cervical localization presents an even more uncommon presentation for epidermoid cysts. A comprehensive review of the relevant medical literature identified only a single prior case, reported by Bacon in 1925 [14].

CASE SUMMARY

In the present study, a Female patient aged 50 years visited the gynecology and obstetrics department with complaints of heavy menstrual bleeding and lower abdominal pain since the last 3 years. Endometrial biopsy was performed, and histopathological examination revealed simple polyp -proliferative phase endometrium. After the prescribed treatment there were not much notable results, consequently hysterectomy with bilateral salpingo-oophorectomy was performed. Before the procedure ultrasonography findings revealed bulky uterus with altered echotexture, e/o hypoechoic SOL in posterior wall displacing endometrium anteriorly, a submucosal fibroid, and a lipoleiomyoma.

GROSS

Specimen was received in formal saline. Total abdominal hysterectomy specimen with bilateral salpingo-oophorectomy specimen. Cervix was hypertrophied with < 2mm each in diameter and a conspicuous cyst filled with grey-white substance 2cm in diameter located deep into layer of cervix, polypoidal mass in fundus and intramural fibroids in myometrium attached tubes and ovaries shows no remarkable pathology.

All the sections were stained with hematoxylin and eosin.

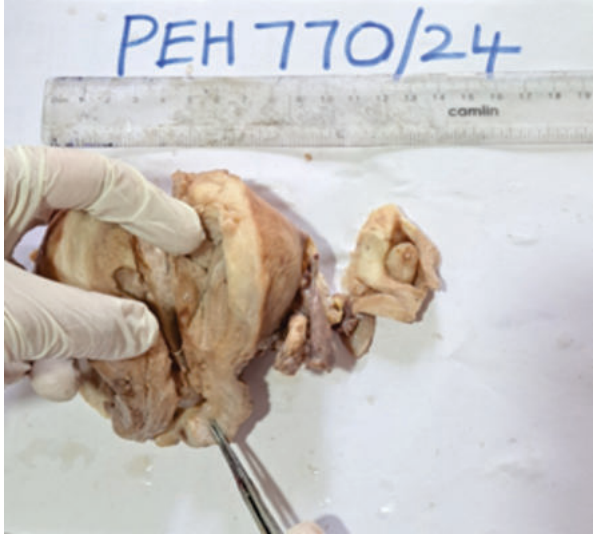

Figure 1: Gross picture of total abdominal hysterectomy and bilateral salpingo-oophorectomy showing cystic area.

MICROSCOPY

Examination of the resected specimens revealed chronic cervicitis with squamous metaplasia of endocervical mucosa and glands. Lumen of the gland filled with keratin (epidermoid cyst). Endometrium shows polyp and proliferative phase. Multiple fibroids in myometrium and adenomyosis. Ovaries show corpora Albicantia. Cervix shows hypertrophied, non-keratinized stratified squamous epithelial lining. Ectocervix with focal ulceration. Endocervix lined by mucous-secreting columnar epithelium is thrown into papillary folds. Squamous metaplasia with disordered proliferation, lumen filled with keratin, and subepithelial inflammation noted.

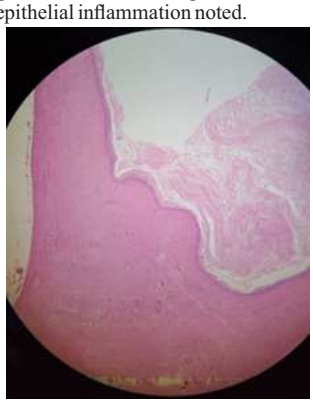

Figure 2: 4x H & E image showing exocervix -cystic structure in the deeper layers that is filled with an amorphic eosinophilic, lamellar substance.

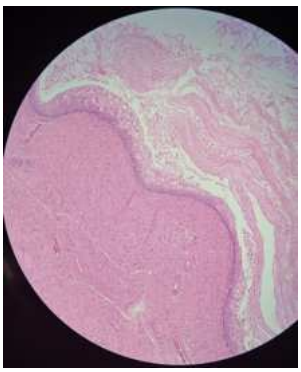

Figure 3: 10x H & E image showing cyst lined by a stratified epithelium and the lamellar substance.

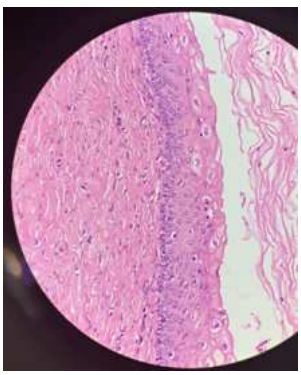

Figure 4: 40x H & E image – view 1 showing lamellar substance, exocervix lining and sub epithelium inflammation.

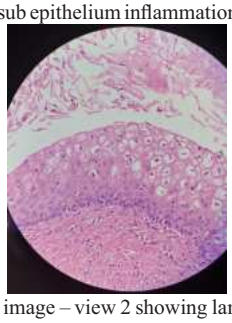

Figure 5: 40x H & E image – view 2 showing lamellar keratin and the exocervix lining epithelium.

DISCUSSION

Cervix is an unusual location for an epidermal type of keratinous cyst. Etiology of uncommon cervical lesions remains a point of discussion. Potential contributing factors include chronic inflammation, local irritation, infection, squamous metaplasia development from mullerian rests/heterologous endometrial implants [15,16]. While epidermoid cysts are typically encountered in cutaneous lesions with hair follicles their presence in mucosal tissue as exemplified by this case is exceptionally uncommon. Multiple studies conducted over the past decade [17-19] have corroborated well established role of high-risk HPV (16,18,31,33,34,35,39,45) in cervical cancer. And role of HPV subtypes (6,11,16,30,33) that may be present within epidermal layer of epidermoid cysts. Development of squamous cell carcinoma/other cutaneous malignancy from epidermoid cysts is well documented but exceptionally rare event. However, absence of multiple lesions suggests sporadic rather a hereditary etiology. By fostering a collaborative research environment (molecular analysis and long-term follow-up) and exploring avenues we can unlock the secrets of cervical epidermoid cysts, ultimately leading to improved diagnostic accuracy, optimal treatment strategies and better patient outcomes.

CONCLUSION

This case report presented a rare occurrence of a cervical epidermoid cyst. The rarity of cervical epidermoid cyst highlights the importance of considering them in differential diagnosis of cervical masses, particularly when encountering atypical presentation during imaging studies/pelvic examination. Definitive diagnosis relies on histopathological examination revealing a characteristic stratified squamous epithelium lining with keratin material. Complete surgical excision with negative margins offers a definitive cure with an excellent prognosis. Further research is warranted to elucidate the exact mechanism behind the formation of cervical epidermoid cysts. We hope sharing such rare cases will contribute to broader understanding of uncommon cervical pathology.

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