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FEMALE GENITAL TRACT PATHOLOGIES- DIVERSE ENTITIES ENCOUNTERED IN A TERTIARY CARE CENTER

Pathology

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ABSTRACT

Neoplasia can arise from any anatomic location of female genital tract. It can be both benign or malignant, epithelial or mesenchymal in origin. Rare neoplasm in unusual locations may give rise to diagnostic dilemmas. Diagnostic histologic features with other ancillary investigations may help in arriving at a definitive diagnosis.

KEYWORDS

Xanthogranulomatous oophoritis, HGSC, Fibrothecoma, LGESS, SFT, SS.

INTRODUCTION

Female genital tract is like a pandora's box. It comprises ovary, fallopian tubes, uterine corpus, cervix and vagina. There can be diverse pathologies involving each of these structures and with specific clinical implications. Furthermore, each of these anatomical structures can harbour both malignant and benign lesions. The wide variability of histopathological entities makes this area a source of constant challenge to the reporting pathologists.

In this short series, we will try to highlight some of the entities encountered in our day-to-day practice that posed as a diagnostic challenge. This includes both benign and malignant neoplasms involving different anatomical locations in female genital tract.

CASE 1: A 23 years old female patient attended Gynaecology OPD with complaints of irregular menstruation and chronic lower abdominal pain. She had a past history of pulmonary tuberculosis 5 years back, that was completely treated.

Ultrasonography was advised that showed bilateral enlarged tubo-ovarian masses measuring approximately 5.5 cm in maximum dimension each, showing focal areas of cystic degenerations. There were also abdominal adhesions that gave the clinical impression of pelvic tuberculosis. Diagnostic laparoscopy was planned and bilateral ovaries were sampled for histopathological and CBNAAT studies.

H & E revealed complete effacement of ovarian structure and sheets of foamy histiocytes in a fibro collagenous ovarian stroma. There was also intense infiltration of chronic inflammatory cells (Figure 1 & 2). No granuloma or neoplastic pathology could be seen in extensive sectioning. The histopathological diagnosis of **"Xanthogranulomatous Oophoritis"** was delivered. CBNAAT study also couldn't demonstrate any *Mycobacterium* species.

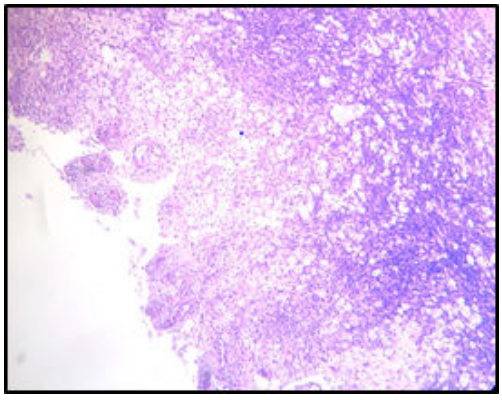

Figure 1: Xanthogranulomatous oophoritis

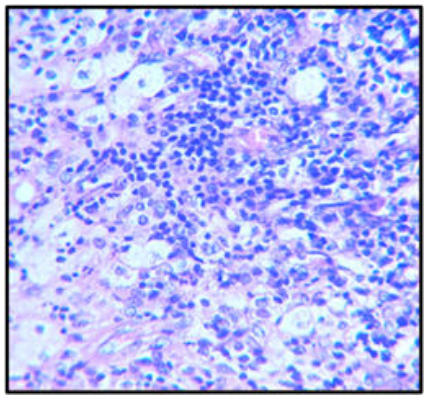

Figure 2: Foamy histiocytes with inflammatory cells

CASE 2: A 40 years old female, a mother of one, attended GOPD with chronic lower abdominal pain, fullness and irregular menstruation for last 4-5 months. She was advised a lower abdominal USG that revealed unilaterally enlarged left ovarian mass measuring (9 x 5 x 4) cm. with solid-cystic areas. Her CA-125 was 300 units/mL. Abdominal hysterectomy with bilateral salpingo-oophorectomy was planned.

Histologic examination revealed unilateral ovarian pathology, with right sided adnexa within normal limits. Left ovary showed tumor cells arranged in sheets & papillae with enlarged nuclei, marked pleomorphism, increased and atypical mitosis (Figure 3). Left fallopian tube was of normal histology, without any evidence of STIC (Serous Tubal Intraepithelial Carcinoma) or HGSC (Figure 4). Hence, a histologic diagnosis of **High Grade Serous Carcinoma (HGSC) of left ovary** was offered. This was particularly significant as a unilateral neoplasm in this category is significantly lower.

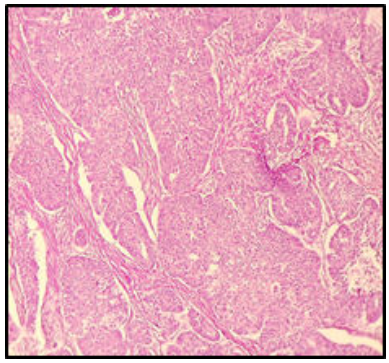

Figure 3: Solid & papillary architecture in HGSC

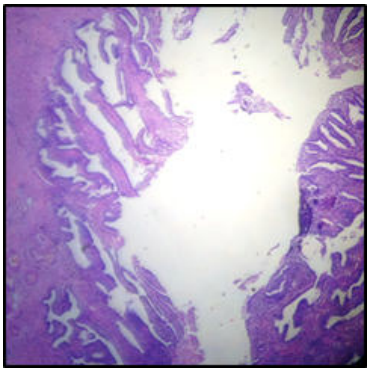

Figure 4: Normal histology of Fallopian tube

CASE 3: A 50 years old female attended GOPD with lower abdominal heaviness, dysmenorrhoea and dysfunctional uterine bleed. Ultrasound was advised that showed a large, lobulated, solid mass in left ovary measuring (10 x 9 x 7.5) cm. approximately with small fluid collection in pouch of Douglas. The exact malignant nature of the neoplasm could not be ascertained. CA125 was moderately raised (60 units/mL). Abdominal hysterectomy with bilateral salpingo-oophorectomy was done and specimen sent to Department of Pathology for histopathological examination.

H & E examination showed unilateral ovarian stromal neoplasm with normal histology of opposite ovary. Left ovary showed spindle cells arranged in fascicles (fibroma-like component) and sheets with few having clear or pale eosinophilic abundant cytoplasm (thecoma-like component). The spindle cell nuclei are bland with no increase in mitosis, necrosis or haemorrhage. This mixed histologic picture suggested the diagnosis of **Fibrothecoma** of ovary (Figure 5). Significantly, there was associated areas of **Adenomyosis** of myometrium (Figure 6) possibly due to hormonal effect of theca component of the neoplasm.

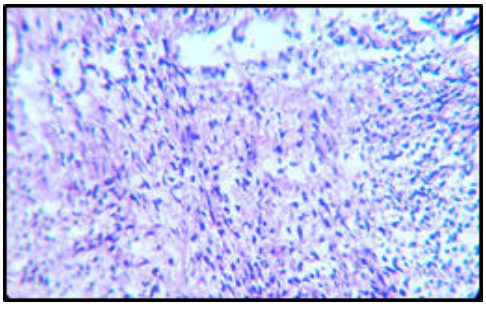

Figure 5: Fibrothecoma of Ovary

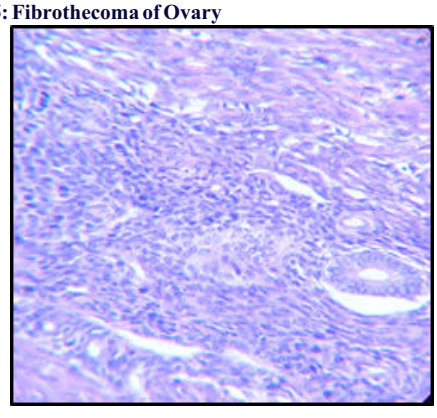

Figure 6: Adenomyosis of Uterus

CASE 4: A 52 years female patient went to her gynaecologist with complaints of abnormal uterine bleeding and pelvic pain. Imaging study showed 6 cm. sized solid nodule in endometrial cavity with possible myometrial invasion. An abdominal hysterectomy was planned urgently.

A cellular neoplasm simulating stroma of proliferative endometrium was seen infiltrating into myometrium with tongue-like protrusion (Figure 7). It consisted of predominantly bland-looking spindle cells with scant cytoplasm, focal atypia, low mitotic activity, delicate arteriolar network and absent necrosis (Figure 8). A histopathological diagnosis of **Low-grade endometrial stromal sarcoma (LGESS)** was made.

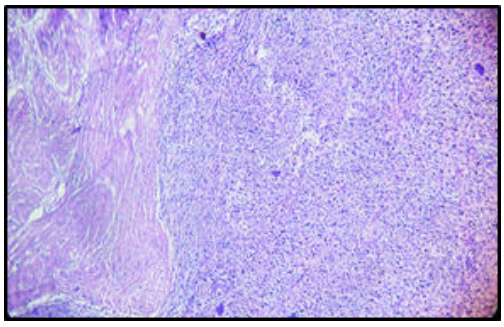

Figure 7: Tongue-like myometrial invasion

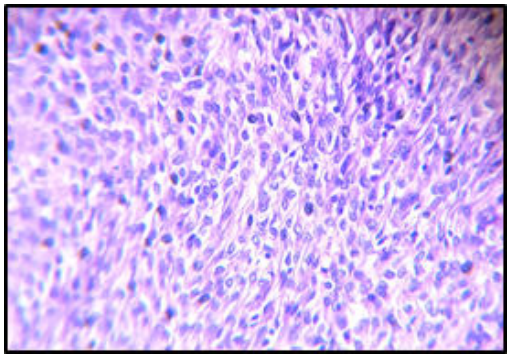

Figure 8: Bland spindle cells in LGESS

CASE 5: A 45 years old female patient attended gynaecology OPD with complaints of a slowly growing painless mass in labia majora over the past 3-4 months. Wedge biopsy from the lesion showed spindle cell neoplasm, without delineating the malignant nature of the tumor. Vulvectomy was done for categorical opinion on histopathologic nature of the tumor, that grossly measured around 4.5 cm. in maximum dimension.

Histologic examination revealed that tumor cells were spindled to oval with pale eosinophilic, indistinct cytoplasm arranged in a pattern less pattern, admixed with staghorn (hemangiopericytomatous) vasculature. There was no increased mitosis (1-2/10HPF) or areas of necrosis (<10%) (Figure 9). Reticulin stain was done that showed moderately rich reticulin network (Figure 10). The classic histologic picture indicated the diagnosis of **vulval Solitary Fibrous Tumor (SFT)**. This later corroborated with STAT6 immunohistochemical positivity.

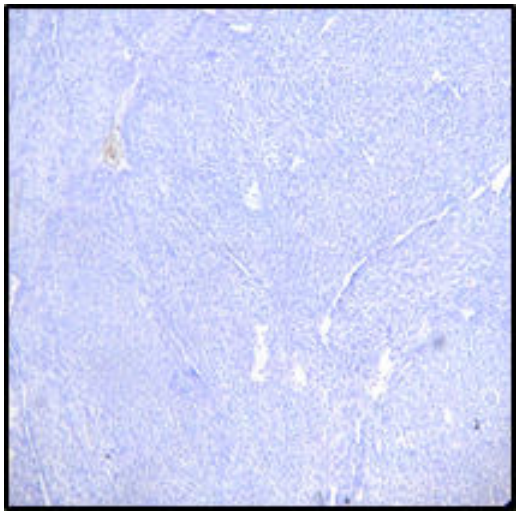

Figure 9: Staghorn vasculature in SFT

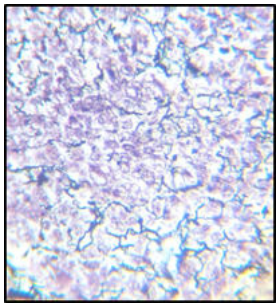

Figure 10: Moderately rich reticulin network (Reticulin stain)

CASE 6: A 35 years old female patient complained of fullness, occasional bleeding & difficulty in micturition for last 5-6 months, with a progressive clinical course over the last 1 month. Imaging study delineated a solid and partly necrotic SOL in anterior vaginal wall, measuring 5 cm. in maximum dimension. Diagnostic wedge biopsy suggested a malignant mesenchymal tumor of indeterminate lineage. Pelvic exenteration surgery was done and specimen sent for histopathological examination.

H & E sections showed a spindle cell lesion, arranged in vague fascicles and focal herring bone pattern. Nuclei are predominantly bland with granular chromatin (Figure 11). There are focal areas of necrosis, increased cellularity, marked pleomorphism and brisk mitosis (Figure 12). Immunohistochemical stain with CD99 showed diffuse & strong membranous positivity (Figure 13). A histologic diagnosis of **Monophasic Synovial Sarcoma of vaginal vault** was offered. The diagnosis was confirmed by molecular studied demonstrating *SS18-SSX1* fusion.

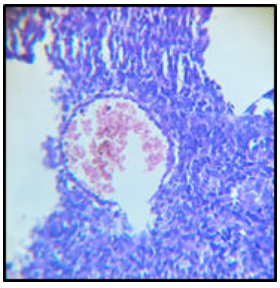

Figure 11: Monophasic Synovial Sarcoma

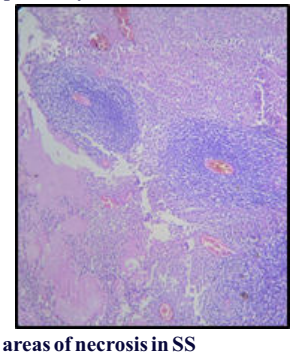

Figure 12: Wide areas of necrosis in SS

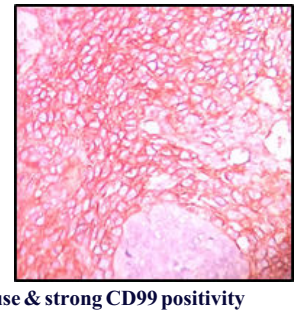

Figure 13: Diffuse & strong CD99 positivity

DISCUSSION:

Gynaecologic pathology is a rapidly evolving area and reporting pathologists must remain conversant with all these changes to provide clinically relevant information to the clinicians [1]. There are numerous instances where there is dilemma regarding malignant nature of the neoplasm. Many of such cases are discussed here, including some rare entities with their clinical relevance.

Xanthogranulomatous reaction is a rare, non-neoplastic chronic entity which is more commonly seen in gall bladder and kidney [2, 3]. Its demonstration in ovaries is quite rare as compared to endometrium, with only few reportable cases till date [4]. The average age of the affected cases was 31 years, which is slightly higher than our patient. Recurrent pelvic inflammatory disease is the main identified cause of this process [5]. The patient in our cases was a suspect for pelvic tuberculosis, but histopathology helped in arriving at the definitive diagnosis.

The High Grade Serous Carcinoma of ovary in our case is significant due to its unilaterality. Majority of cases of this category are bilateral [6], which in most of the scenarios helps in our differential diagnosis. Therefore, HGSC was not thought of after USG evaluation of the lesion. Also, the theory of origin of HGSC has been a field of ongoing research and evolution. It has been proposed that the fimbrial epithelium of fallopian tube or ovarian surface epithelium in some cases are the sites for pre-malignant pathologies [7]. So, it is not unusual to find dysplasia or in-situ carcinoma (STIC) at the site of tubal epithelium, neither of which was detected in our case. Even though the accompanying features were not that of classical HGSC, the definitive histomorphological picture led to the definitive diagnosis.

Fibrothecoma belong to the stromal neoplasm of the ovary. The exact incidence of fibrothecoma is unknown with only a handful of reported cases [8]. A fibrothecoma with atypical ultrasound appearance may be mistaken for a malignancy particularly if associated with fluid in pouch of Douglas and a misleadingly high CA125 levels, as was seen in this case, similar to the findings of another similar reported case [9]. The tell-tale histologic features of the neoplasm confirmed the nature of the SOL. Associated adenomyosis explained the cyclical irregularities of the patient. The patient was henceforth advised for close follow-up and routine check-up.

Endometrial stromal sarcoma (ESS) is a fairly rare malignant tumor of the endometrium, occurring mainly in the age group of 40-50 years [10], just like our study subject. Since it is a relatively infrequent entity in our daily practice and some histologic concordance with leiomyoma, it may likely be missed with grave clinical consequences. The tumor may appear deceptive with bland histologic appearance & low mitotic count but a very aggressive clinical course with high rates of recurrence [11]. Thus, any rapidly enlarging leiomyoma may always be dealt with clinical suspicion and a diagnosis of LGESS may be confirmed/ refuted with proper expertise.

Solitary fibrous tumour (SFT) is an uncommon neoplasm of fibroblastic origin, first described as a tumour of the pleura and now well established at extra pleural sites, with female genital tract being rarest of such rare locations [12]. Because of rare incidence of such neoplasm in female genital tract, reporting pathologists are often not well-versed with spindle neoplasms of this nature. However, it should be considered in the diagnostic workup of spindle cell tumours of unclear lineage in the female genital tract in association with careful morphological evaluation and judicious use of immunohistochemical stains [13].

Synovial sarcomas comprise (SS) 5-10% of soft-tissue sarcomas with typical localization in para-articular regions. The first reportable case of SS in vagina was demonstrated in year 2008 [14], which is otherwise a very unusual site for its occurrence. It has been suggested that they originate from unknown stem cells that are capable of differentiating into mesenchymal and/or epithelial structures and hence, categorized under "*Tumor of Uncertain Differentiation*" [15]. Synovial sarcoma should be considered in the differentials of a vulvovaginal mesenchymal lesion, especially in a young female [16].

CONCLUSION:

The above discussion highlights on the fact that there are varied neoplastic processes affecting the female genital tract. The reporting histopathologists need to be well-versed with the updated diagnostic guidelines and new emerging entities with diverse molecular pathology. Some of the unusual entities must also be kept in mind to make a diagnosis with proper clinical relevance.

REFERENCES:

1. Prat J, Mutch DJ. Pathology of cancers of the female genital tract including molecular pathology. Int J Gynecol Obstet. 2018;143(2):93–108.
2. Ladefoged C, Lorentzen M. Xanthogranulomatous inflammation of the female genital tract. Histopathology 1988; 13:541-551.
3. Pace EH, Voet RL, Melancon JT. Xanthogranulomatous oophoritis: an inflammatory pseudotumor of the ovary. Int J Gynecol Pathol 1984; 3:398-402.
4. Jung SE, Lee JM, Lee KY, Han KT, Hahn ST. Xanthogranulomatous Oophoritis: MR Imaging Findings with Pathologic Correlation. American Journal of Roentgenology. 2002;178(3):749-751.
5. Russack V, Lammers RJ. Xanthogranulomatous endometritis: report of six cases and a proposed mechanism of development. Arch Pathol Lab Med.1990; 114: 929-932.
6. Lisio M, Fu L, Goyeneche A, et al. High-Grade Serous Ovarian Cancer: Basic Sciences, Clinical and Therapeutic Standpoints. Int. J. Mol. Sci. 2019; 20: 1-33.
7. Ahmed AA, Etemadmoghadam D, Temple J, et al. Driver mutation in TP53 are ubiquitous in high grade serous carcinoma of ovary. J Pathol. 2010; 221 (1): 49-56.
8. Scully RE, Youg RH, Clement PB. Tumors of the ovary, maldeveloped gonads, fallopian tube and broad ligament. Washington DC, AFIP, 1996. P. 189-201.
9. Kumar A, Kaushal V, Mathur SK, et al. Fibrothecoma of Ovary- A Rare Case Presentation. The Internet Journal of Third World Medicine. 2011; 9(2): 1-4.
10. Jain R, Batra S, Ahmad A, et al. Low Grade Endometrial Stromal Sarcoma: A Case Report. Iranian journal of medical sciences. 2015; 40: 81-4.
11. Gol M, Cetin A, Guven CM, et al. An advanced stage low grade endometrial stromal sarcoma: a therapeutic dilemma. European Journal of Obstetrics & Gynecology and Reproductive Biology. 2004; 115: 247–248.
12. Yang EJ, Howitt BE, Fletcher CDM, Nucci MR. Solitary fibrous tumour of the female genital tract: a clinicopathological analysis of 25 cases. Histopathology. 2018 Apr;72(5):749-759.
13. Kao YC, Lin PC, Yen SL, Huang SC, Tsai JW, Li CF, Tai HC, Lan J, Chuang IC, Yu SC, Huang HY. Clinicopathological and genetic heterogeneity of the head and neck solitary fibrous tumours: a comparative histological, immunohistochemical and molecular study of 36 cases. Histopathology. 2016 Mar;68(4):492-501.
14. Minig L, Farnetano G, Peiretti M, et al. Poorly differentiated synovial sarcoma of the vagina: a case report and a clinical literature review. Ecancermedicalscience. 2008; 2: 99.
15. Bruijn D, Nap J, Kessel A. The (epi)genetics of human synovial sarcoma. Genes Chromosomes Cancer. 2007; 46: 107–9.
16. Vaiyapuri S, Cyril F, et al. Synovial Sarcoma of the Vulva and Vagina. International Journal of Gynecological Pathology. 2011; 30 (1): 84-91.