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Pathology

HIGH-GRADE SEROUS CARCINOMA ARISING FROM ENDOMETRIAL POLYP - A RARE CASE REPORT.

Dr. Harshini G*	Postgraduate student, Department of Pathology, Vijayanagar Institute of Medical Sciences, Ballari. *Corresponding Author
Dr. Shanthi M	Professor And Head Of The Department Of Pathology, Department Of Pathology, Vijayanagar Institute Of Medical Science, Ballari.
Dr. Jayashree K	Professor, Department Of Pathology , Vijayanagar Institute Of Medical Science, Ballari.

ABSTRACT Polyp-related endometrial serous carcinoma is a rare variant of endometrial cancer that arises typically in postmenopausal women associated with the rapid progression of the disease. Serous carcinoma is a highly aggressive tumor characterized by a complex papillary growth pattern with high cytological atypia and extensive necrosis. As a result, most serous endometrial carcinomas are found to have metastasized at the time of diagnosis. Serous tumors are poorly differentiated. The modality of treatment varies according to tumor type, and prognosis depends mainly on the stage at the time of diagnosis for endometrial carcinomas. Women with serous carcinoma may be treated with chemotherapy even in the absence of extrauterine metastasis, unlike endometrioid carcinoma. Mutation of the TP53 tumor suppressor gene occurs as an early event in the pathogenesis of serous endometrial carcinoma. Postmenopausal women at risk should be evaluated judiciously by endometrial biopsies for early diagnosis and management; since it accounts for up to 40% of endometrial cancer-related deaths.

KEYWORDS : Serous endometrial carcinoma, Adenomatous polyp, lymph node metastasis, p53.

INTRODUCTION:

Uterine papillary serous carcinoma is an uncommon variant of endometrial carcinoma that accounts for 5 % of all cases.[1] Endometrial carcinoma represents 7% of all invasive cancer in women [3]. Endometrial serous carcinoma, an aggressive tumor arises typically in postmenopausal women with a background of an atrophic endometrium.[5]

Serous carcinomas are often associated with serous endometrial intraepithelial carcinoma (SEIC) formerly endometrial intraepithelial carcinoma (EIC), as precursor lesions.[5] Rarely, USC arises from benign endometrial polyps[6]

Unfortunately, a considerable number of patients initially presented with extrauterine disease at the time of diagnosis.[2]

Case History:

A 65-year-old female, P3L2 presented to the Department of OBG of Vijayanagar Institute of Medical Science (VIMS) Ballari, with complaints of postmenopausal bleeding for four months. She was a known case of diabetes and hypertension for 3 years and was under medication. Her BMI was 25.7 Kg/m^2.

Investigations	
Hb	14 gm %
WBC	9000 cells/mm3
Platelet count	2.45 lakh cells/mm3
Serology	Nonreactive
Blood urea	20 mg/dl
Serum Creatinine	1.0 mg/dl
FBS	151 mg/dl
PPBS	165 mg/dl
T3	1.3
TSH	2.2
Direct Bilirubin	0.2 mg/dl
Total bilirubin	0.5 mg /dl
ALT	16 U/L
AST	20 U/l
ALP	70 U/l
CHEST X-RAY	Normal

USG Pelvis (TVS) showed a bulky uterus with evidence of diffusely thickened endometrium (3.1 cm in maximum thickness) and showing multiple cystic spaces and mild internal vascularity and findings likely to represent Cystic endometrial hyperplasia with malignant transformation

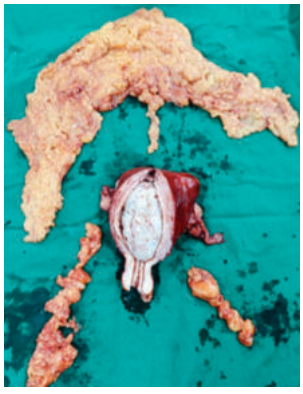
MRI pelvis showed a bulky uterus, measuring 8.6x 7.9 x 6 cm with evidence of well-defined T1 and T2 hypointense intramural fibroid noted along the left lateral wall of the uterus. Some of the solid components in the left lateral wall were likely to be a result of Cystic endometrial hyperplasia with neoplastic transformation. The endometrium was markedly thickened, measuring 4.4 cm, and multiple tiny cystic spaces were noted.

Based on clinical examination and radiological assessment, a diagnosis of endometrial hyperplasia with neoplastic transformation was suggested. Endometrial Biopsy showed features suggestive of Poorly differentiated malignancy. Subsequently, under Epidural coverage, Total abdominal hysterectomy with bilateral salpingo-oophorectomy with omentectomy and pelvic lymph node dissection was performed. The specimen was fixed in 10% formalin and was sent to the Department of Pathology, VIMS Ballari for histopathological examination and immunohistochemistry.

Grossly-

Panhysterectomy specimen received measuring 14 x 13 x 5 cm. The external surface was enlarged and congested. The cut section shows an exophytic irregular globular mass occupying the entire endometrial cavity attached to the myometrium of the fundus measuring 10x7x3cm and serial sectioning of the mass showed soft grey-white areas with Swiss cheese-like multiple cysts. Sectioning through the uterus showed intramural and subserosal fibroid. Bilateral adnexa was unremarkable.

Also received an omentectomy specimen consisting of fibrofatty tissue measuring 45x11x0.5cm and 7 lymph nodes were retrieved from iliac lymphadenectomy.



(Figure: Gross picture of the Endometrial polyp)

Microscopy-

Histopathological examination of the mass occupying the endometrial cavity showed a polypoidal lesion composed of cystically dilated endometrial glands and stroma showing proliferating vessels. A portion of the polyp showed many papillary excrescences lined by atypical epithelial cells and adjacent tumors. Tumor cells arranged in solid sheets showing moderate to marked pleomorphism, vesicular nucleus with prominent nucleoli. Scattered giant cells and areas of necrosis were seen. No evidence of myometrial invasion. Myometrium shows leiomyoma and focal areas of adenomyosis. Section studied from bilateral adnexa were unremarkable. Sections studied from 6 lymph nodes showed metastatic deposits and one lymph node showed extranodal extension.

Immunohistochemistry of the tumor cells showed strong positivity for p53.

A diagnosis of High-grade endometrial serous carcinoma arising from adenomatous endometrial polyp with lymph node metastasis, leiomyoma, and adenomyosis was made.

Histopathological diagnosis of High-grade endometrial serous carcinoma arising in an adenomatous endometrial polyp with pTNM staging – pT1aN1 was made.

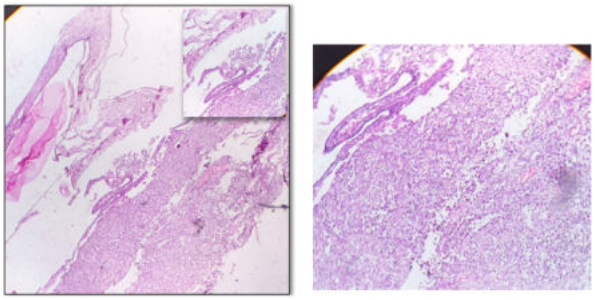


Figure 1&2:(100x) (H&E) Tumor cells arising from endometrial polyp

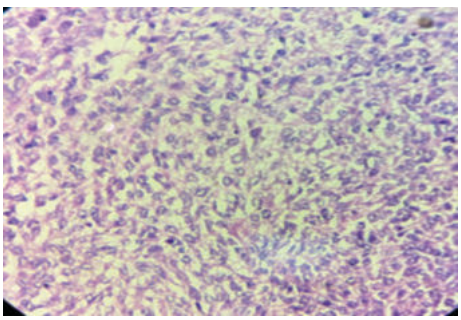


Figure 3: (400x) (H&E) Tumor cells having marked nuclear atypia

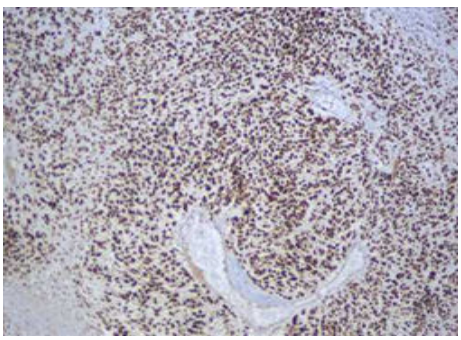


Figure 4: IHC showing strong positivity for p53

DISCUSSION:

Endometrial carcinoma is classified into two broad categories: Type I and II. Serous papillary endometrial carcinoma is the prototype of Type II; while endometrioid carcinoma for Type I.[3]Most endometrial carcinomas are endometrioid adenocarcinomas. Type I is estrogen-dependent and follows a fairly favorable course; whereas type II is estrogen-independent.[3] In postmenopausal women with endometrial polyps, the prevalence rate of malignancy and premalignant lesions is 3 to 5.4%.[10]

Uterine papillary serous carcinoma [UPSC] is morphologically and genetically unrelated to type 1 endometrioid carcinoma. Endometrioid adenocarcinomas may be associated with microsatellite instability and mutations/gene abnormalities in the *PTEN*, ARID IA, P13K, *K-ras*, and *ctnnb1* genes, whereas USC is usually associated with TP*53* gene mutation.[3]. p53 protein is overexpressed in most tumors and used as a diagnostic and prognostic tool[3]. P53 mutation occurs early in the disease and explains the rapid growth of the tumor.

Old age, thin individuals, breast cancer patients, BRCA gene mutation, and prior usage of tamoxifen are at high risk for UPSC, unlike endometrioid carcinoma. Patients with uterine papillary serous carcinoma (UPSC) usually present with a history of postmenopausal bleeding. Lymphovascular invasion, depth of myometrial invasion, and stage of cancer were all risk factors for a poor prognosis. Even some foci of serous carcinoma (< 10%) harbor the worst prognosis, when compared to grade 3 Endometrial Endometrioid Carcinoma.[7]

Romana et al reported 4 cases of serous carcinoma arising from endometrial polyps in which all the patients were presented with postmenopausal bleeding; hence postmenopausal women at risk should be judiciously evaluated and they had a high potential risk for extrauterine metastasis despite intraepithelial or minimally invasive involvement within the uterus which is an indicator for poor survival rate.[1]

Farell et al reported that the incidence of the malignant polyp was 32% and 8 cases were associated with malignant polyps of serous subtype of stage 1A endometrial carcinoma and aids in the early diagnosis of endometrial carcinoma.[8]

In the study by Hanley et al, polyp-confined UPSC was reported and malignant cells were found in the peritoneal wash without Myometrial or lymphovascular invasion and pointed toward negative prognostic value. There was a strong correlation between the patient's positive peritoneal wash and disease recurrence; however, there was no significant difference in disease-free survival in the patients who had received adjuvant treatment.[9]

A patient who is diagnosed with UPSC is surgically staged and undergoes optimal cytoreduction along with platinum/taxane-based adjuvant chemotherapy for both early and advanced stages of cancer, as it improves the overall survival rate; whereas, adjuvant radiotherapy controls the local regional spread of cancer. Nevertheless, the role of adjuvant therapy in endometrial polyp-related cancer is still controversial[7]

Immunohistochemistry for polyp-related serous endometrial carcinoma confirms the diagnosis. UPSCs are aggressive histologic subtypes that have clinical and pathologic characteristics that are unique and hence management should not be the same as endometrioid cancer. Although serous carcinomas account for 5-10% of all endometrial carcinomas, they harbor a 40% risk for endometrial cancer-related deaths and this proportion makes clear for early diagnosis and management. Serous carcinomas are known for their recurrence: hence, careful long-term surveillance is crucial.[4]

This case is being reported because of its rarity. Patients with high-risk factors should be promptly evaluated by endometrial biopsies/ curettages as it increases the overall survival rate.

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REFERENCES:

1. Idrees R, Din NU, Fatima S, Kayani N. Serous carcinoma arising in endometrial polyps: a clinicopathologic study of 4 cases. Ann Diagn Pathol. 2013 Jun;17(3):256-8. doi: 10.1016/j.anndiagpath.2012.11.003. Epub 2012 Dec 29. PMID: 23276456.
2. Goldblum, Lamps, McKenney, L.Myers; Rosai and Ackerman's Surgical Pathology, Chapter 33, Uterus: Corpus, Eleventh Edition,1335-1347
3. Kumar, Abbas, Aster; Robbins & Cotran, Pathologic Basis of Disease, The female genital tract, Chapter 22, Tenth Edition,1001-1016
4. WHO Classification of Tumours, Female Genital Tumors, Tumours of Uterine Corpus, Fifth edition,256-257
5. Mandato VD, Torricelli F, Palomba S, Uccella S, Pirillo D, Ciarlini G, De Iaco P, Lucia E, Giorda G, Ditto A, Ghezzi F, Sanseverino F, Franchi M, Bifulco G, Mastrofilippo V, Abrate M, Aguzzoli L, La Sala GB. Uterine Papillary Serous Carcinoma Arising in a Polyp: A Multicenter Retrospective Analysis on 75 Patients. Am J Clin Oncol. 2019 May;42(5):472-480. doi: 10.1097/COC.0000000000000541. PMID: 30973371.
6. McCluggage WG, Sumathi VP, McManus DT. Uterine serous carcinoma and endometrial intraepithelial carcinoma arising in endometrial polyps: report of 5 cases, including 2 associated with tamoxifen therapy. Hum Pathol. 2003 Sep;34(9):939-43. doi: 10.1016/s0046-8177(03)00335-6. PMID: 14562291.

7. David M Borutta et al., Management of women with uterine papillary serous cancer: A Society of Gynecologic Oncology (SGO) review, Gynecologic Oncology 115(2009): 142-153
8. R. Farrell; J. Scurry; G. Otton; N.F. Hacker (2005). Clinicopathologic review of malignant polyps in stage 1A carcinoma of the endometrium., 98(2), 254–262. doi:10.1016/j.ygyno.2005.03.044
9. Hanley KZ, Fadare O, Fisher KE, Atkins KA, Mosunjac MB. Clinical Significance of Positive Pelvic Washings in Uterine Papillary Serous Carcinoma Confined to an Endometrial Polyp. Int J Gynecol Pathol. 2016 May;35(3):249-55. doi 10. 1097/PGP. 0000000000000235. PMID: 26535985.
10. Hui P et al., Endometrial Polyp in Postmenopausal Women, An Epicenter for the Development of Endometrial Serous Carcinoma, Arch Pathol Lab Med, 2023 Apr 1;147(4):413-41