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*RESEARCH ARTICLE*

# CARCINOSARCOMA OF THE UTERINE CERVIX: A CASE REPORT WITH IMMUNOHISTOCHEMICAL ANALYSIS

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***Abstract***

Carcinosarcoma of uterine cervix is a rare neoplasm. This report describes the histopathological and immunohistochemical profiles of a malignant cervical tumor with a mixed morphology of mesonephric carcinosarcoma and HPV dependent squamous cell carcinoma. A 51 year old female presented with the complain of bleeding per vagina since 2 weeks. MRI revealed a 36 x 50 x 45mm lesion involving cervix, lower uterine segment and vaginal fornices. The final histomorphology revealed a poorly differentiated tumor with mixed features of squamous cell carcinoma and mesonephric carcinosarcoma.Immunohistochemical analysis revealed expression of p40, p63, p16 and AR in squamous component and expression of GATA3,CD10 and Calretinin in mesonep hric component. P16 positivity in squamous cell component indicated HPV associated carcinoma.The immunological findings support the metaplastic theory that carcinosarcoma may stem from the carcinomato us elements and then differentiate into sarcoma components.The coexistence of carcinosarcoma and cervical squamous cell carcinoma in our patient support this theory. Immunohistochemistry plays an important role for diagnosis of such unusual mixed type of tumors.



## Introduction:-

Carcinosarcoma is a biphasic malignant neoplasm composed of epithelial and mesenchymal components. Primary cervical carcinosarcomas are much less frequent than tumors arising in the uterine corpus or ovary. Some tumors are associated with high-risk HPV infection (types 16 and 18).[(1)]

## Case Report:-

A 51 years old woman presented with the complain of bleeding per vagina since 2 weeks. She was on medical treatment for hypertension. MRI pelvis revealed a 36 x 51 x 45 mm lesion involving the cervix, lower uterine segment and upper vaginal fornices. The cervical biopsy report indicated a poorly differentiated malignant epithelioid to spindle cell tumor. The immunohistochemical profile on cervical biopsy indicated mesonephric carcinosarcoma. Both epithelioid and spindle cells express GATA-3 and CD 10 (Figure 3). The epithelioid cells express EMA, CK7, Calretinin and SF 1. The tumor cells were negative for ER, PR, WT1, Cyclin D1 and Inhibin.

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After this, the patient received 2 cycles of neoadjuvant systemic therapy (Paclitaxel and carboplatin). MRI revealed a significant reduction in size of the cervical lesion.

Radical hysterectomy with bilateral salpingo-oophorectomy and and bilateral pelvic lymphadenectomy was performed. The received specimen consisted of uterus with bilateral adnexa and vaginal cuff. An irregular infiltrative tumor was identified involving all four quadrants of the cervix and extending upto lower uterine segment measuring 30 x 25 x 8 mm. Uterine corpus was normal on gross examination. Histopathological analysis of the infiltrating tumor revealed a mixed type of tumor consisting of Mesonephric carcinosarcoma and HPV- dependent Squamous cell carcinoma (Figure 1 & 2) associated with a high-grade squamous intraepithelial lesion.

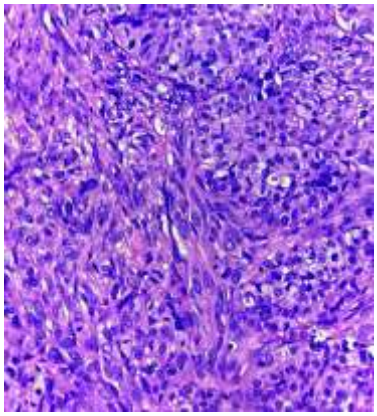

**Figure 1- Malignant mesenchymal component in mesonephric carcinosarcoma, H & E** (100x)

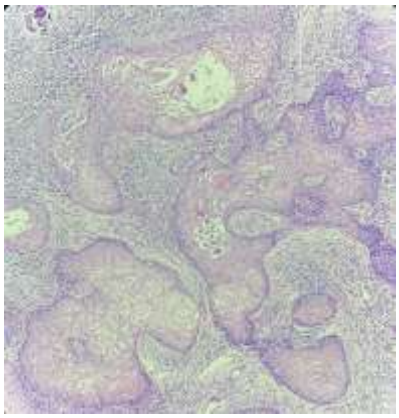

**Figure 2- Squamous cell component in mesonephric carcinosarcoma, H & E (40x)**

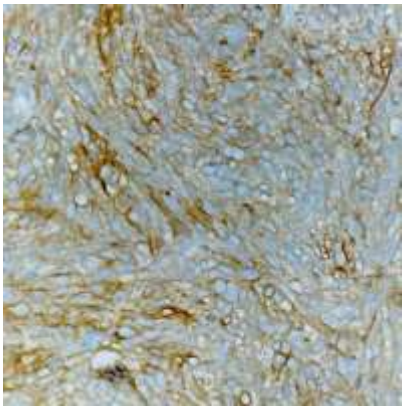

**Figure 3- Tumor cells express CD 10 in mesenchymal component**

The squamous cell component expresses p40, p63 (Figure 4), p16 (Figure 5) and AR (30%, moderate). The mesonephric component was negative for p40 and p63. Lympho-vascular invasion was present, perineurial invasion was not identified. All regional lymph nodes were negative for tumor cells. The final pathological stage classification was ypT1b2 ypN0 (pTNM, AJCC 9th version). The patient was advised adjuvant chemotherapy and radiotherapy.

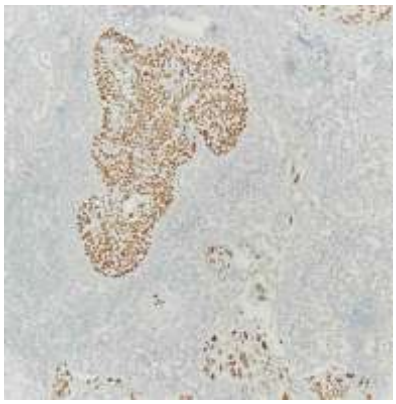

**Figure 4- Tumor cells express p63 in squamous cell component**

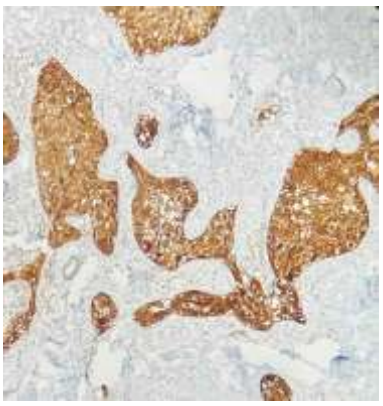

**Figure 5- Tumor cells express p16 in squamous cell component**

## Discussion:-

Cervical carcinosarcoma is an extremely rare tumor, with only 128 documented cases in the literature.[2]Cervical carcinosarcoma mainly occurs in postmenopausal women, with a mean age at diagnosis of 64 years and a range of 25 to 93 years.[2] Patients usually present with vaginal bleeding as the initial symptom, which leads to a diagnosis of a cervical mass.[3]Our patient was 51-years-old and presented with complain of vaginal bleeding. Most cervical carcinosarcomas are detected in Stage IB, and at the time of diagnosis the disease is confined to the cervix in most women, including our patient.[2,4,5]The histological features of carcinosarcoma are mixed comprising of epithelial and mesenchymal component. Depending on the degree of differentiation based on homologous and heterologous component further classified as homologous or heterologous.

Both adenocarcinoma and squamous cell carcinoma have been observed as epithelial component of cervical carcinosarcomas.[6] There is increasing evidence that carcinosarcoma represents a mesenchymal metaplasia of epithelial tumors.[6,8] The coexistence of carcinosarcoma andsquamous cell carcinoma in our patient appears in agreement with this hypothesis.

Several etiologic factors related to the incidence of carcinosarcomas have been reported, as radiation exposure to the pelvicarea, previous chemotherapy and infection with HPV, in particular type 16.[6,7]Human papilloma virus (HPV) infection can be an important cofactor in the carcinogenesis of cervical carcinosarcoma.[4,7,8]In this patient, squamous cell component is p16 positive suggesting association with Human papilloma virus (HPV) infection. Grayson et al. reported that HPVDNA was detected in all eight cases of the cervical carcinosarcomas they reviewed.[8]

## Conclusion:-

Carcinosarcoma of the uterine cervix is an extremely rare neoplasm, mostly occurring in older age group. The coexistence of mesenchymal component with p16 positive squamous cell component in our case supports the evidence of metaplastic theory of histogenesis.

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