CASE REPORT

Cytological Diagnosis of Small Cell Carcinoma of Vagina - A Diagnostic Dilemma

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Abstract:

Small cell carcinoma is a neuroendocrine tumour, mainly arises in lung accounting for 20% of cases. In extrapulmonary sites it accounts for 5% of cases. Among gynaecological malignancies it accounts for 1-2% of cases, common sites are cervix, endometrium, ovary, vagina, vulva in decreasing frequencies. Small cell carcinoma is extremely uncommon in vagina. There are only 26 cases reported in the literature. Here we are reporting 27 th case. Because of its rarity the chances of missing the diagnosis are more. Correct morphological identification, with immunohistochemical analysis is essentail for definitive diagnosis which will be helpful in planning appropriate treatment.

Key words: Neuroendocrine tumour, Small cell carcinoma, Vagina.

Introduction:

Small cell carcinoma of vagina is extremely rare neuroendocrine tumour. Only 5% of small cell carcinomas arise from extra pulmonary sites, accounting for 1-2% of gynaecological malignancies. These tumours have been reported to originate in cervix, endometrium, ovary, vagina, vulva in decreasing frequencies. Tumours are common in postmenopausal patients. These tumours are mainly diagnosed by characteristic morphological features and are confirmed by immunohistochemistry. There have been only 26 cases of small cell carcinoma of vagina documented in the English literature; here we are reporting the 27th case.

Case History:

A 50 years old female, presented to gynaecological outpatient department with complaints of discharge per vagina since 6 days, which was scanty, non foul smelling, creamy white, since 4 days it was associated with blood tinge.

Menstrual History : Previous cycles were regular, and she attained menopause 8 years back.

Obstetric History: Para 4 Living 4 (P_4L_4). Married life: 35 years. Last child is 25 years old. Tubectemized 24 years back.

On per speculum examination; A fungating growth was arising from right lateral vaginal wall measuring 3x4 cm, which was friable and indurated.

On per vaginal examination the growth was felt near the cervix, which bleeds on touch. Routine haematological and radiological investigations were within normal limits. ELISA was negative for HIV. There was no organomegaly and no lymphadenopathy.

Pathology:

Pap smear was taken by scraping posterior vaginal wall using ayer's spatula. Smear was fixed in methanol fixative, stained with Pap stain. Under microscopy, smear showed moderate cellularity, with uniform round cells arranged in sheets, groups, rosettes, at places acinar pat-

tern. Individual tumour cells were round to oval having scant cytoplasm, hyperchromatic nuclei with powdery chromatin and only few cells were showing prominent nucleoli (Fig. 1,2).

Fig 1. Photomicrograph showing uniform small round cells in clusters and sheets. (Pap 10X)

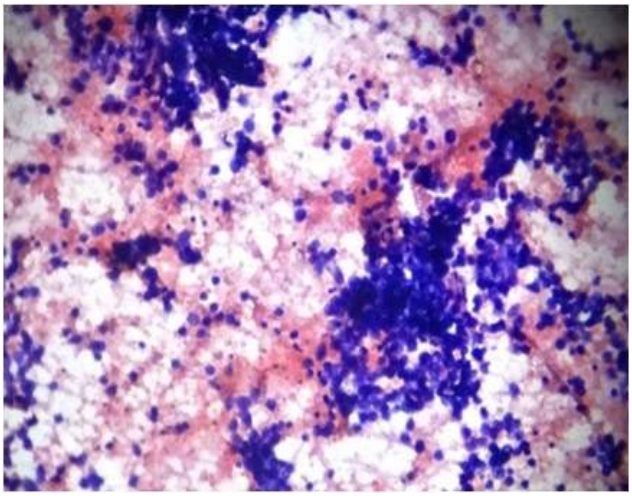
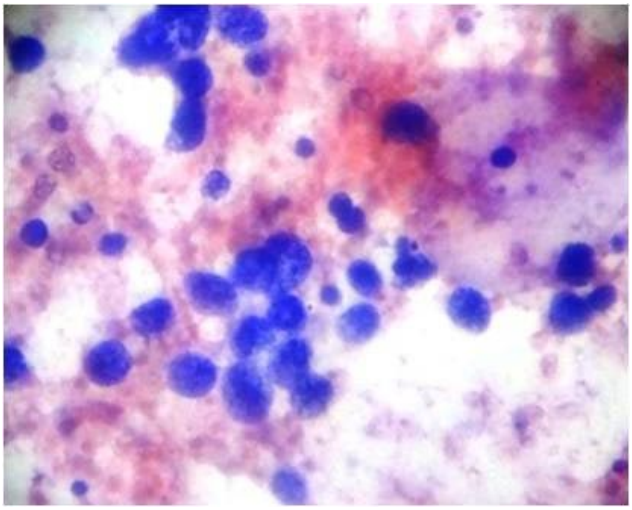


Fig 2. Photomicrograph showing uniform small round cells in clusters and sheets. (Pap 40X)



Background showed scant haemorrhage and necrosis. Based on these morphological features differential diagnosis of small cell carcinoma/ adenocarcinoma of vagina, was thought and advised biopsy for confirmation.

Intraoperatively growth was seen on right vaginal wall (Fig. 3), measuring 4 cm, well circum scribed which bled on touch. Cervix and uterus were completely normal. Biopsy was taken from the growth and was sent to histopathological evaluation. Light microscopy showed vaginal mucosa lined by straitified squamous epithelium, Below this lining uniform round tumour cells were seen which were arranged in sheets, rosettes, clusters and groups. Individual tumour cell was having scanty cytoplasm, hyperchromatic nucleus and powdery chromatin. Also seen were atypical mitotic figures and areas of necrosis and haemorrhages (Fig. 4). Based on these features diagnosis of small cell carcinoma of right vaginal wall was made and blocks were sent to immunohistochemistry (IHC). On Immuno-histochemical analysis these tumour cells were diffusely positivie for CD56, synaptophysin (Fig. 5). P63 was focally positive. Chromogranin was negative.

Based on Pap smear, histopathological features and immuno-histochemical analysis, a diagnosis of high grade small cell carcinoma of vagina was confirmed. Patient was reffered to cancer institute for further treatment.

Discussion:

Primary small cell neuroendocrine carcinoma of lower genital tract has been first documented in 1972 by Albores-saavedra et al and diagnosed as carcinoid of uterine cervix [1]. Vaginal small cell carcinoma has been first reported in 1984

Fig 3. Photomicrograph showing growth on right vaginal wall (cervix is completely free)

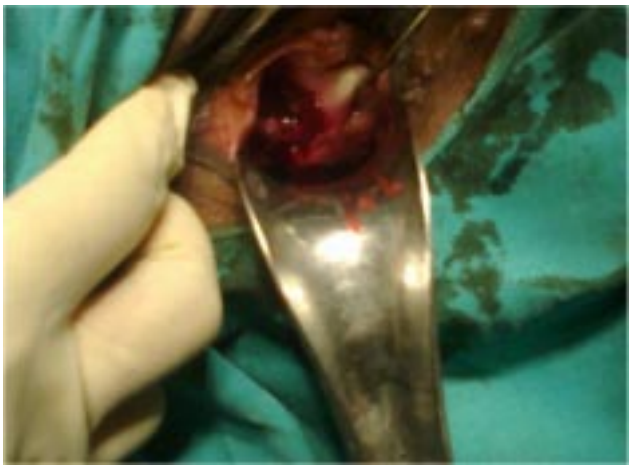


Fig 4. Photomicrograph showing uniform round tumour cells with powdery chromatin. (H &E 40X)

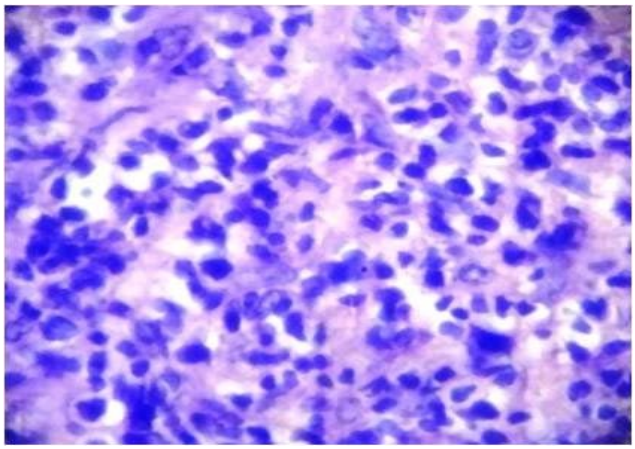
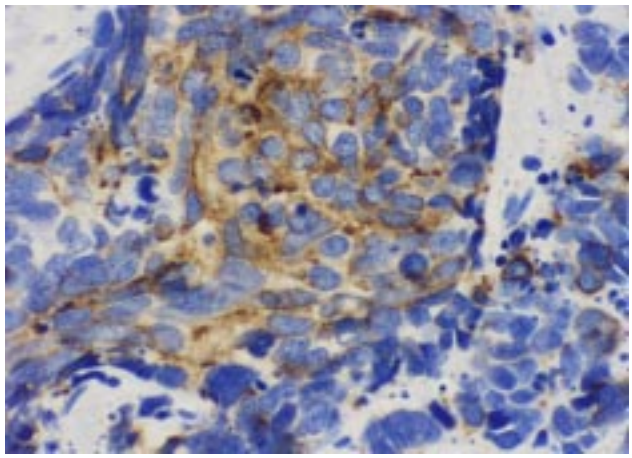


Fig 5. Immunohistochemistry: Tumour cells showing synaptophysin positivity



by Scully et al [1]. Median age of presentation of these patients has been 50-60 years (post-menopausal woman) [2]. Human papiloma virus 18 association has been proved in causing cancer [3]. Neuroendocrine tumours of extra pulmonary sites are also of four types small cell, large cell, carcinoid, and atypical carcinoid [4]. As of its pulmonary counter parts extra pulmonary small cell carcinomas have aggressive clinical behaviour and presents with early widespread dissemination [5].

Histologicaly small cell carcinoma has to be differentiated from other non epithelial round cell tumours like - lymphoma, sarcoma, by negative staining with epithelial marker CD56. And from small cell variant of squamous cell carcinoma,where we find squamous nests, but in our case we could not find squamous nests. Basaloid carcinoma has the presence of basaloid nests, with characteristic palisading of nuclei, and in the centre of nest comedo necrosis is seen [5]. Combined small cell, squamous cell carcinoma should be ruled out, because small cell carcinoma is commonly associated with adenocarcinoma and squamous cell carcinoma [2].

In the present case, clinically patient has presented with post menopausal bleeding which is clinicopathologically correlated. Since Pap smear has shown small round cells with acinar arrangement, scant cytoplasm with hyperchromatic nuclei and prominent nucleoli and abscence of foci of necrosis, a differential diagnosis of adenocarcinoma has been thought of and advised for biopsy. Biopsy has shown small or oval cells arranged in the form of sheets, with scant cytoplasm, distinct nuclei, which are hyperchromatic, with inconspicuous nucleoli.

Histological findings have been identical to those of pulmonary small cell carcinoma. On these features diagnosis of small cell carcinoma of vagina has been given and blocks have been sent for IHC study. On IHC the tumour cells have stained for synaptophysin. Also have showed diffuse positivity for CD56 and focal positivity for P63. This confirms the diagnosis of small cell carcinoma. Diagnosis of primary is given mainly by excluding cervical and lung malignancy. Cervix is completely free from tumour. Chest X-ray is also normal.

Diagnosis of small cell carcinoma is given mainly by characteristic morphology. Confirmation is by immunohistochemistry, Cells are positive for neuron specific enolase, synaptophysin, chromogranin. Electron microscopy shows presence of neurosecretory granules.

Definitive diagnosis of small cell carcinoma is very important since small cell carcinoma has aggressive behaviour and poor prognosis and current therapeutic modality followed is surgical removal of tumor, followed by chemoradiation. For adenocarcinoma current therapeutic modality followed is surgical removal of tumor, followed by chemotherapy. And these adenocarcinomas are less aggressive than small cell carcinomas. Thus their differentation is very important. Small cell carcinomas show early widespread dissemination mainly through lymphatics [5].

To conclude primary small cell carcinoma of vagina is very rare with aggressive behaviour and poor prognosis. Even though it is rare tumour, correct morphological identification is very important to plan for treatment, assess the prognosis. so this case has been presented.

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