ORIGINAL RESEARCH PAPER
Volume - 11 | Issue - 12 | December - 2022 | PRINT ISSN No. 2277 - 8179 | DOI : 10.36106/ijsr
INTERNATIONAL JOURNAL OF SCIENTIFIC RESEARCH

PRIMARY SMALL CELL NEUROENDOCRINE CARCINOMA OF THE VAGINA: AN UNUSUAL ENTITY WITH LITERATURE REVIEW

Histopathology

Dr Vaanika Kaira* Associate Professoer, Pathology, SRMS-IMS, Bareilly, U.P.*Corresponding Author
Dr Pankaj Kaira Assistant Professor, Radiodiagnosis, SRMS-IMS, Bareilly, U.P.
Dr Tanu Agrawal Professor

ABSTRACT

Primary Small Cell Neuroendocrine Carcinoma (PSCNC) of the vagina is an exceptionally rare malignancy with only 28 cases reported so far. Female genital tract neuroendocrine tumors are exceedingly rare and constitute only 1%-2% of all gynecological malignancies. Because of their rarity, they pose a significant diagnostic challenge for both clinicians and pathologists. Accurate timely diagnosis is imperative for both therapeutic management and prognostic point of view.

KEYWORDS

Introduction:
Primary or secondary gynecological neuroendocrone (NE) tumors are uncommon.[1] These tumors are more commonly located in lung, gastrointestinal tract, pancreas and thymus.[2] Recent classification divides NE tumors into two groups: Poorly differentiated neuroendocrine carcinomas(NECs) and Well differentiaed neuroendocrine tumors(NETs). Poorly differentiated NEC include small cell carcinoma and large cell NEC, while NETs include typical and atypical carcinoids.[2,3,4] Cervical small cell carcinomas and ovarian carcinoids constitute the most prevalent NE tumors of female genital tract.[5] Primary small cell neuroendocrine carcinoma of the vagina is an extremely rare and highly aggressive neoplasm with only 28 cases reported in literature so far.[6,7,8].We are reporting this case because of its rarity and to emphasize the importance of early diagnosis in order to choose the most appropriate therapeutic modalities to improve overall survival of this deadly neoplasm.

Case history:
A 50 years old post-menupausal women reported to gynecologic OPD with complaints of vaginal bleeding and pelvic discomfort. On per vaginal examination a soft to firm mass was palpated and a biopsy from mass was taken.Routine investigations of the patient were normal except mild anemia. Histopathology report of the biopsy revealed small cell neuroendocrine carcinoma. 3-Tesla Magnetic Resonance Imaging(MRI) pelvis & Contrast Enhanced Computed Tomography scan(CECT) thorax was done to assess for origin and extent of the disease as well as for staging purpose.MRI showed evidence of well defined lobulated mass lesion of soft tissue signal intensity measuring approximately 2.5cm CC x 1.7cm TR x 1.6cm AP along the lateral wall of lower one third of the vagina with intraluminal extension displaying high signal intensity on long TR images relative to adjacent muscles, isointense on T1 with marked diffusion restriction corresponding to low ADC values and mild heterogeneous post contrast enhancement. Superiorly it was extending upto the level of base of urinary bladder and inferiorly upto the external vaginal opening. Anteriorly & posteriorly closely abutting the urethra & anal canal with loss of fat planes with them. Laterally it was showing indistinct fat planes with the left pubo-rectalis muscle. No extension was seen within the ischioanal fossa. [Figure.1a and b]

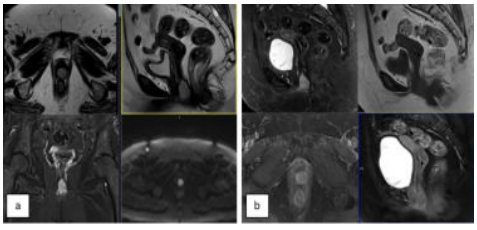


Figure-1(a&b) CEMRI PELVIS (T1W,T2W,STIR,DWI AND TWI POST CONTRAST) AXIAL, SAGITTAL AND CORONAL image shows a well defined mild heterogeneously enhancing lobulated soft tissue lesion along the lateral wall of lower one third of the vagina with intraluminal extension displaying high signal intensity on long TR images, isointensity on TIW images with marked diffusion restriction on DWI.

CECT thorax showed normal bronchovascular markings except for few dependent air opacities in B/L lower lobes. No other pleuro-parenchymal opacities or mass lesion seen.Chest wall revealed normal bony cage and soft tissue.

Patient underwent wide local excision and left inguinal block dissection in the surgery department of SRMS, Bareilly and the specimen was sent for histopathological examination.

Histopathology showed classical appearance of small cell neuroendocrine carcinoma underneath vaginal mucosa with neoplastic cells arranged in sheets, nests, cords, and forming rossettes at places, having high nuclear-cytoplasmic ratio, hyperchromatic nuclei with finely stippled nuclear chromatin, inconspicuous nucleoli, significant nuclear moulding scant cytoplasm and considerable mitotic activity.[Figure.2a,b]

Immunohistochemistry revealed diffuse synaptophysin, CD56 positivity in tumor cells and Ki-67 index was more than 50%. [Fig 2c & d]

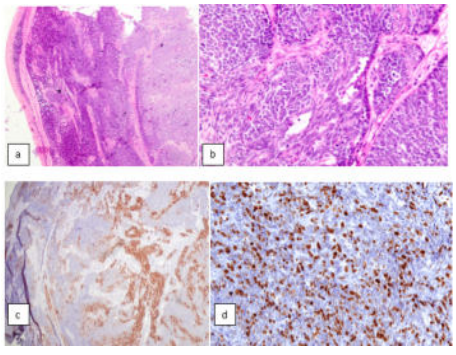
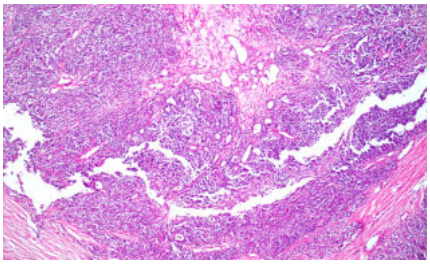


Figure-2.a.Section showing small neoplastic cells growing as diffuse sheets and nests under vaginal epithelium (H&E x 100) b.Tumor cells showing nuclear moulding and high mitotic activity (H&E x 400) c.Photomicrograph showing diffuse synaptophysin positivity in tumor cells d. High Ki-67 index in most proliferating areas.

All resection margins and lymph nodes were free from tumor infiltration. Patient was referred to radiation oncology unit of the institute for further management and was recurrence free for 6 months and came again with inguinal lymphadenopathy which was subsequently biopsied and showed metastatic deposits with same morphology and immunohistochemical profile.[Fig. 3] Patient succumbed to death within one month.

Figure 3. Photomicrograph inguinal lymph nodes showing metastatic deposits from Small cell neuroendocrine carcinoma vagina.



Discussion:

Primary neuroendocrine tumors of vagina are extremely rare,majority of them being poorly differentiated neuroendocrine carcinomas, small cell type.[9] The mean age at diagnosis is 59 years and post-menupausal bleeding is the typical presentaion.[1] Because of rarity of PSCNC of the vagina, very limited literature is available concerning prognostic and therapeutic information. Mnay researchers concluded that these tumors have histological, immunohistochemical and ultrastructural features similar to small cell carcinoma occuring elsewhere in other anatomic locations including Lung and Gastrointestinal tract. They depict very aggressive clinical behaviour and worst prognosis even with modern multimodal treatment regimens.[6,10.11,12]

In our case, the patient is 50 years postmenupausal female who presented with vaginal bleeding. Histopathological findings in our case were that of classical small cell neuroendocrine carcinoma with intense immunohistochemical expression of synaptophysin, CD 56 and a high Ki-67 index.

Triphasic CT scan and MRI are imaging modalities of choice for staging and extent determination of vaginal tumors.[13]

Current treatment modalities for PSCNC of the vagina include wide local excision & lymphadenectomy with adjuvant chemoradiation to enhance disease free survival.In 2003, Chan proposed a management alogrithm for small cell carcinoma of the cervix which can also be adopted in the management of PSCNC of the vagina.[1,14]

Recently some authors emphasized the use of molecular profiling to customize treatment in an attempt to improve progression free survival in PSCNC of the vagina.[8]

Conclusion:

Primary small cell neuroendocrine carcinoma of the vagina are exceedingly rare tumors with a rapid downhill course and high mortality despite the use of modern multimodal treatment strategies including molecular profiling suggested regimens.

REFERENCES:

1. Gardner GJ, Reidy-Lagunes D, Gehrig PA. Neuroendocrine tumors of the gynecologic tract: a Society of Gynecologic Oncology (SGO) clinical document. Gynecol Oncol. 2011;122:190–198. doi: 10.1016/j.ygyno.2011.04.011.
2. Lopes Dias J, Cunha TM, Gomes FV, Callé C, Félix A. Neuroendocrine tumours of the female genital tract: a case-based imaging review with pathological correlation. Insights Imaging. 2015 Feb;6(1):43-52. doi: 10.1007/s13244-014-0378-5. Epub 2015 Jan 16. Erratum in: Insights Imaging. 2015 Apr;6(2):273.
3. DeLellis RA, Osamura RY. Neuroendocrine tumors: an overview. Pathol Case Rev. 2006;11:229–234.
4. Warren WH, Welker M, Gattuso P. Well-differentiated neuroendocrine carcinomas: the spectrum of histologic subtypes and various clinical behaviors. Semin Thorac Cardiovasc Surg. 2006;18:199–205.
5. Eichhorn JH, Young RH. Neuroendocrine tumors of the genital tract. Am J Clin Pathol. 2001;115(Suppl 1):S94–112.
6. V. Singh, H. Singh, C. Leong, R. Hwang, and W. I. Noguera, "Vaginal small cell carcinoma: case report and review of literature," New York Medical Journal, 2008,
7. J. N. Bhalodia, D. V. Kapapura, and M. N. Parekh, "Primary small cell neuroendocrine carcinoma of vagina: a rare case report," Pathology Research International, vol. 2011, Article ID 306921, 3 pages, 2011
8. Kostamo K, Peart M, McKenzie N, Holloman C, Carlan SJ, Ge L, et al. Novel Treatment of Small-Cell Neuroendocrine of the Vagina. Case Rep Oncol Med 2018;2018.
9. Kefeli M, Usubütün A. An update of neuroendocrine tumors of the female reproductive system. Turk Patoloji Derg 2015;31:128-44.
10. C. J. Prasad, J. A. Ray, and S. Kessler, "Primary small cell carcinoma of the vagina arising in a background of atypical adenosis," Cancer, vol. 70, no. 10, pp. 2484–2487, 1992.
11. Z. Bing, L. Levine, J. A. Lucci, S. S. Hatch, and M. A. Eltorky, "Primary small cell neuroendocrine carcinoma of the vagina: a clinicopathologic study," Archives of Pathology and Laboratory Medicine, vol. 128, no. 8, pp. 857–862, 2004.
12. W. Chafe, "Neuroepithelial small cell carcinoma of the vagina," Cancer, vol. 64, no. 9, pp. 1948–1951, 1989.
13. Parikh JH, Barton DP, Ind TE, Sohaib SA. MR imaging features of vaginal malignancies. Radiographics. 2008;28:49–63.
14. Chan JK,Loizzi V, Burger RA, Rutgers J, Monk BJ. Prognostic factors in neuroendocrine small cell cervical carcinoma: a multivariate analysis. Cancer. 2003; 97: 568-574