Case Report

Carcinosarcoma of the Uterus Mimicking a Cervical Polyp: A Case Report and Literature Review

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ABSTRACT

Uterine carcinosarcomas are a group of very rare, aggressive biphasic often monoclonal tumours composed of both epithelial and mesenchymal elements. The prognosis of this tumour is poor and a pre-operative diagnosis via endometrial biopsy is often difficult. We present a case of uterine carcinosarcoma in a 61-year old woman who complained of spontaneous vaginal bleeding of two weeks duration with a protruding cervical mass. Total abdominal hysterectomy and bilateral salpingo-oophorectomy were performed on her. Histopathological and immunohistochemical assessments revealed a tumour which consisted of an admixture of both malignant epithelial and mesenchymal elements. Thus, it is suggested that clinician should have a high index of suspicion for this tumour whenever postmenopausal patients present with vaginal bleeding and discharge.

Keywords: Carcinosarcoma, Cervical Polyp, Malignant, Mullerian tumour, Hysterectomy.

INTRODUCTION

Tumours may arise from the uterus or it may be the target of secondary metastatic ones. Malignant mixed mullerian tumour otherwise known as malignant mesodermal mixed tumour (MMMT) or metaplastic carcinoma, occurs rarely in the uterus.1,2 According to the WHO classification of female genital tract neoplasms, this tumour has been renamed as “carcinosarcoma”.1,2 Although this tumour is rare but its aggressive behavior is of great concern. Carcinosarcoma comprises both epithelial and mesenchymal elements with classical features of malignancy.1,2 The tumour accounts for less than 5 % of all uterine cancers and is thought to be a monoclonal carcinoma with tendency for sarcomatous differentiation.3,4 It typically occurs in postmenopausal women.2,3,4 Based on mesenchymal constituent, the tumour is classified into two major morphological forms viz: homologous and heterologous variants.3,4 The homologous carcinosarcoma contains sarcomatous elements derived from native uterine mesenchyme while the heterologous variant displays sarcomatous elements of foreign or extraterine mesenchymal cells including skeletal muscle, cartilage, adipose tissue or bone.3,4 We report a rare case of uterine carcinosarcoma presenting as a cervical polyp in our center.

CASE SUMMARY

A 61 year old multiparous postmenopausal woman presented with two weeks history of spontaneous vaginal bleeding, a 3 day history of abnormal vaginal discharge. Examination revealed moderate pallor and a bulky tender uterus of approximately 14 weeks gestational size. Abdominal and trans-vaginal ultrasonography showed a bulky uterus measuring 17.88 x 15.10 x 11.28 cm with a markedly thickened endometrium of 6.99 cm, suggestive of endometrial carcinoma. A total abdominal hysterectomy with bilateral salpingo-oophorectomy was performed on her.
Immediate post-operative condition was satisfactory. She was discharged on 18th post-operative day. She however developed complications including metastasis to the liver, massive ascites and encephalopathy two months post-operatively necessitating her re-admission. Her general clinical state however progressively declined until her death on the 8th day of re-admission.

The gross specimen received at the Department of Histopathology consisted of uterus, both fallopian tubes and ovaries. The uterus was irregularly-shaped and bulky; it measured 15.0 x 13.0 x 8.0 cm and weighed 1.2 kg. Serial cut sections of the uterus revealed an irregularly-shaped, grey-white, fleshy, soft to friable protuberant mass measuring 10.0 x 8.0 cm filling the distended endometrial cavity and protruding beyond the external cervical os. The tumour appeared to have invaded the distended cervix grossly. Also seen were multiple discrete intramural fibroid masses ranging in sizes from 1.0 x 1.0 x 1.0 cm to 6.0 x 5.0 x 4.0 cm with grey-white, whorled cut surfaces. Attached to the uterus were bilateral fallopian tubes and ovaries with grossly normal features. There were no lymph nodes specimen submitted. (See Figure 1)

Microscopy of the fleshy uterine mass showed a malignant biphasic neoplasm consisting of an admixture of both epithelial and mesenchymal elements. (See Figure 2) The epithelial element was composed of closely packed, irregularly shaped, glandular structures as well as complex papillary structures with fibrovascular core. These epithelial tumour cells contained pleomorphic, large hyperchromatic to vesicular nuclei, prominent nucleoli, irregular nuclear margin and modest eosinophilic cytoplasm with occasional vacuolation. On the other hand, the mesenchymal element of this tumour showed diffuse proliferation of spindle cells arranged in singles and alveolar to vague storiform patterns. These spindle tumour cells contained pleomorphic, occasional eccentric, hyperchromatic, pleomorphic nuclei that displayed irregular nuclear margins (See Figure 3). Extensive areas of necrosis as well as frequent mitoses including abnormal forms were seen.

Histologic sections of myometrial fibroid masses showed uniform spindle cells arranged in interlacing fascicles and possessing plump ovoid to cigar-shaped, bland nuclei and abundant eosinophilic cytoplasm. Histologic sections of cervix showed focal areas of infiltration by the similar biphasic malignant tumour cells as in the uterus. Bilateral ovaries and fallopian tubes were free of these tumour cells.

Immunohistochemical studies showed strong positivity to cytokeratin and vimentin in areas corresponding to carcinomatous and sarcomatous components respectively. The histopathological and immunohistochemical diagnosis of invasive malignant mixed mullerian tumour (carcinosarcoma) was made. Tumour-node-metastasis (TNM) staging6 was T2NxMx (T2:Cervical stromal invasion, Nx: Lymph node status cannot be measured, Mx: Distant metastases cannot be measured).

Figure 1: Gross appearance of the uterus within which was grayish-white papillary to irregular masses filling and expanding the endometrial cavity

Figure 2: Photomicrograph showed histologic description of the uterine carcinosarcoma showing admixture of both malignant epithelial (left half) and mesenchymal (right half) components. H&E staining at a magnification of × 4 magnification

Figure 3: Photomicrograph showed histologic description of the mesenchymal component of carcinosarcoma containing pleomorphic strap-like cells with eccentric hyperchromatic nuclei, reminiscent of rhabdomyosarcoma (rhabdomyosarcoma is a sarcoma...
DISCUSSION

Carcinosarcoma of the uterus is rare and accounts for 4.7% of endometrial cancers. Uterine carcinosarcoma is a very aggressive neoplasm with a poor prognosis. The role of immunohistochemistry in the diagnosis of carcinosarcoma as attested in the index case cannot be over-emphasized. In fact, recent studies have shown that most of carcinosarcomas demonstrated identical immunohistochemical/molecular markers reminiscent of their carcinomatous and sarcomatous components, thus, necessitating their classification as monoclonal carcinomas that display sarcomatous differentiation. Carcinosarcoma of the uterus occurs commonly in postmenopausal women with abnormal vaginal bleeding being the most common mode of presentation. In the index case, the uterine carcinosarcoma was diagnosed in a 61 years old multiparous postmenopausal woman who presented with a complaint of spontaneous vaginal bleeding. Examination showed a tumour which appeared as papillary to irregular shaped mass filling and expanding the endometrial cavity and protruding through the cervical os. These descriptions agree with general observations reported in similar case reports. These observations were held by a study wherein the carcinosarcoma was large and grew to fill and distend the uterus.

The most common anatomic location of this tumour in the uterus is the uterine body. Other anatomic sites such as cervix, and other parts of the female genital organs can be infiltrated by this tumour either primarily or as secondary spread. The involvement of cervix in the index patient, probably through local spread from the primary tumour within the endometrial cavity agrees with most literature.

Histologically, Malignant Mixed Mullerian tumour (MMMTs) otherwise known as carcinosarcomas are biphasic and composed of well demarcated epithelial and mesenchymal elements as seen in the index case. The epithelial element can display monomorphic or hybrid picture of serous, endometrioid, clear cell and undifferentiated carcinoma. The index case showed hybrid morphology of predominantly papillary, serous, clear cell and endometrioid carcinoma. The mesenchymal component classically displays homologous and heterologous morphological patterns. The homologous pattern can appear as endometrial stromal sarcoma, fibrosarcoma or leiomyosarcoma while the heterologous pattern can appear as rhabdomyosarcoma, chondrosarcoma, osteosarcoma or liposarcoma. Tumour in the index patient showed fibro-sarcomatous as well as rhabdoid cells reminiscent of rhabdomyosarcoma. Though MMMTs express epithelial markers (pancytokeratin, epithelial membrane antigen) and stromal lineage markers (vimentin, myogenin, S100), histopathologic assessment is however clear-cut and sufficient for the diagnosis of carcinosarcoma in most cases. The carcinomatous element of carcinosarcomas has been observed to be responsible for metastasis as demonstrated by the exclusive presence of its epithelial component within extra-uterine metastatic deposits. In the index case, no metastasis was found either in the fallopian tubes or ovaries. Assessment of lymphatic metastases could not be made as no lymph node was sent for pathologic evaluation, thus, making prediction of prognosis of this patient to be difficult. The index patient died within three months of diagnosis following complications including metastasis to the liver, massive ascites and encephalopathy, thus explaining the aggressive nature of this tumour. The poor prognosis of uterine carcinosarcoma can be attributed to late presentation of the patient, old age of patient at presentation, often large tumour size, stage, histological grade and depth of myometrial invasion by the tumour. A number of studies on molecular profiles of uterine carcinosarcomas have explored the possibility of identifying potential markers of prognosis or therapeutic targets. The role of immunohistochemistry cannot be over-emphasized in the definitive diagnosis of carcinosarcoma of the uterus as it assisted us in confirming this tumour which showed focal areas of strongly positive staining for both cytokeratin and vimentin. Generally, it is advisable to screen post-menopausal women for cancer routinely before they are symptomatic for cancer. Although cytopathology of exfoliated cells from the endometrial cavity has limited diagnostic value in endometrial cancers, endometrial biopsy is the gold standard in the diagnosis of endometrial cancers. However, this may be limited in diagnosis of carcinosarcoma owing to occasional small size of this tumour, thus necessitating the need for hysterectomy for definitive diagnosis and prognostication. In addition, diagnosis at a pre-invasive/early stage is the best approach to the management of endometrial cancers, as invasive stage is costly and associated with poor prognosis.
CONCLUSION

Uterine carcinosarcoma is a very rare and aggressive tumour of the uterus. Thus, it is suggested that clinician should have a high index of suspicion for this tumour whenever postmenopausal patients present with vaginal bleeding and discharge. Although, patients can be screened for this tumour via cytopathology of exfoliated cells from the endometrial cavity and endometrial biopsy; these are however limited in the making of definitive diagnosis owing to smaller sample size. Thus, hysterectomy may be necessary for making a definitive diagnosis. Diagnosis at a pre-invasive /early stage is the best approach to the management of endometrial carcinomas, as invasive stage is costly and associated with poor prognosis.

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Conflict of Interest

None declared

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