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Uterine Carcinosarcoma - A case series at Tertiary Care Hospital

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Abstract

Uterine carcinosarcomas (UCS) are uncommon and aggressive biphasic tumors representing <5% of all uterine malignancies. These are aggressive & biphasic neoplasms that are defined as tumors consisting of high grade malignant epithelial & mesenchymal elements. These tumors show a mixture of carcinomatous component and a sarcomatous component (SC) that can be either homologous or heterologous. The aim of our study was to evaluate prognostic factors in uterine carcinosarcoma. It was a retrospective study of two years with 8 cases being diagnosed during this time. 75% of the cases presented as large, solid growth & 25% as polypoid growth. In epithelial component, serous carcinoma (62.5%) was predominant followed by Endometroid carcinoma (37.5%). In Sarcomatous component, we had spindle cell sarcoma without any obvious differentiation in 4/8 cases (50%). Remaining 4 cases showed sarcomatous differentiation (3 cases of Rhabdomyosarcoma [37.5%] & 1 case of chondrosarcoma [12.5%]). 50% of cases presented with advanced FIGO stage (III & IV) with tumor extension to uterine serosa, cervix, omentum and vagina. 50% cases had increased depth of invasion (>2/3rd) while as 3 cases (3/8) showed superficial depth of invasion (<2/3rd). 1 case (1/8) had no depth. Our study reported that prognostic factors like advanced stage and deep myometrial invasion were associated with poor outcome. Our study confirmed the commonly established facts about UCS: these are rare and aggressive uterine tumors with advanced stage, depth of invasion & heterologous sarcomatous component which are associated with poor prognosis & outcome.

Keywords: Sarcomatous Component, Endometroid Carcinoma, Uterine Serosa, Cervix, Omentum

Introduction

Uterine carcinosarcomas (UCS) are uncommon and aggressive biphasic tumors representing <5% of all uterine malignancies [1] but leading to 15% of gynaecological malignancy related deaths with an occurrence of <2/100000 women/year. These are aggressive & biphasic neoplasms that are defined as tumors consisting of high grade malignant epithelial & mesenchymal elements. These tumors show a mixture of carcinomatous component (usually a high grade endometrioid carcinoma, serous carcinoma or clear cell carcinoma) and a sarcomatous component (SC) that can be either homologous or heterologous.[2] When the SC consists of mesenchymal tissues normally found in the uterus (leiomyosarcoma, endometrial stromal sarcoma) the tumor is considered as homologous, and heterologous when the differentiation of the SC shows extrinsic mesenchymal tissues (rhabdomyosarcoma, chondrosarcoma, liposarcoma).[2] These tumors are seen in postmenopausal women. Grossly they present as large, often bulky solid/polypoid growths. Foci of necrosis and haemorrhage are also seen. Extension into pelvis, lymphatic & vascular permeation, distant lymph-borne & blood borne metastasis is common. Carcinosarcomas can show genetic changes like PTEN, TP53, KRAS, PIK3CA.

Aim

The aim of our study was to evaluate prognostic factors in uterine carcinosarcoma

Material and Methods

This was a retrospective study of two years (Dec 2024-Dec 2022) diagnosed in our department. The relevant data was collected from our data records maintained in our department. A total of 8 cases were diagnosed during this period.

Cases of other uterine cancers (pure carcinomas, pure sarcomas, MMMT showing benign epithelial or benign mesenchymal component) have been excluded.

Histopathological diagnosis was made on formalin-fixed, paraffin embedded tissues stained by Hematoxylin & Eosin

Results

A total of 8 cases were analysed in our study. All the patients were post-menopausal women with the age ranging between 50-62 years.

The tumour was located in uterine corpus in all the cases, extended to uterine cervix in 3 cases (3/8), omentum and vagina in 1 case each. Lymph node metastasis was seen in 1 case. Out of 8 cases, 3 cases (3/8) showed superficial myometrium invasion while as increasing depth of invasion (>2/3rd) was seen in 4 cases (4/8).

The tumour staging was performed according to FIGO staging system. The follow up data was available for two cases.

In Epithelial component, we found Serous carcinoma (5/8) [62.5%] as predominant followed by Endometroid carcinoma (3/8) [37.5%].

Sarcomatous Component in our series was spindle cell sarcoma without any obvious differentiation in 4/8 cases [50%]. Remaining 4 cases showed sarcomatous differentiation (3 cases of Rhabdomyosarcoma [37.5%] & 1 case of chondrosarcoma [12.5%]).

Table 1: Overview of the result obtained

Case No	Macroscopy	Microscopy	Metastasis	Myometrial Invasion	Figo Stage	Figo Stage
1	Solid	Endometroid carcinoma (EC) Spindle Cell sarcoma (SC)	Absent	<2/3rd	IB	IB
2	Solid	Endometroid carcinoma(EC) Rhabdomyosarcoma (SC)	Absent	<2/3rd	II	II
3	Solid	Serous Carcinoma (EC) Spindle cell sarcoma (SC)	Present	>2/3rd	IV B	IV B
4	Solid	Serous Carcinoma (EC) Spindle cell sarcoma (SC)	Present	>2/3rd	III B	III B
5	Polypoid	Endometroid Carcinoma(EC) Rhabdomyosarcoma (SC)	Present	<2/3rd	II	II
6	Polypoid	Serous Carcinoma (EC) Spindle cell sarcoma (SC)	Present	>2/3rd	III A	III A
7	Solid	Serous Carcinoma (EC) Chondrosarcoma (SC)	Absent	-	I A	I A
8	Solid	Serous Carcinoma (EC) Rhabdomyosarcoma (SC)	Present	>2/3rd	III A	III A

Discussion

Uterine carcinosarcomas (UCS) are a rare and aggressive subtype of uterine high grade carcinomas[3] and these tumors represent <5% of all uterine malignancies, account for ~16% of all deaths caused by uterine malignancy.[4]

In our study, all the patients were post-menopausal women but they were younger compared to previous reports in literature where median age >65 years.[5]

The clinical presentation in our cases was typical of uterine malignant tumor: abdominal pain and bleeding per vagina which has been reported in other studies too[9]

The definitive diagnosis of UCS relies on pathological analysis of the hysterectomy specimens. The histological diagnosis of UCS is done by the standard pathological technique (formalin-fixed paraffin-embedded tissues stained by H&E); the immunohistochemistry (IHC) could be useful in order to precise certain sarcomatous differentiations when they are not obvious (especially spindle cell sarcomas).

In our study, we did not use IHC for the diagnosis of UCS as this special technique was not available in any case.

The patients presented as large, solid tumors in 6 cases (75%) while 2 cases (25%) had polypoid growth. This reflects the late diagnosis in our context, although some studies showed that tumor size had no consistent prognostic value.[8]

Serous carcinoma [62.5%] was predominant followed by Endometroid carcinoma [37.5%] in the epithelial component.

These histological features are commonly reported in the literature as the EC of UCS is a high grade uterine carcinoma often with a serious or endometrioid differentiation.[2]

Sarcomatous Component in our series had spindle cell sarcoma without any obvious differentiation in 4/8 cases [50%]. Remaining 4 cases showed sarcomatous differentiation (3 cases of Rhabdomyosarcoma [37.5%] & 1 case of chondrosarcoma [12.5%]).

Most previous studies on UCS did not find significant prognostic value of the nature of the mesenchymal component (homologous or heterologous) on survival. However, some authors have found that the presence of a homologous component in the SC was associated with a more favourable outcome compared to tumors with heterologous SC.

The FIGO stage remained the most robust prognostic survival factor in patients with UCS and advanced stages (III & IV) were associated with higher risk of death.[6]

In our study, 4/8 cases (50%) presented with advanced FIGO stage (III & IV) with tumor extension to uterine serosa, cervix, omentum and vagina.

4 cases (4/8) had increased depth of invasion (>2/3rd) while as 3 cases (3/8) showed superficial depth of invasion (<2/3rd). 1 case (1/8) had no depth.

Contrary to findings of other studies.[10] our study reported that prognostic factors like advanced stage and deep myometrial invasion were associated with poor outcome.

In all the cases TAH+BSO were performed. Follow up data was available for two patients (2/8) & both the patients died shortly after surgery.

Conclusion

Despite some limitations (small sample size, short study period, retrospective study), our study confirmed the commonly established facts about UCS: these are rare and aggressive uterine tumors with advanced stage, depth of invasion & heterologous sarcomatous component which are associated with poor prognosis & outcome.

These patients are often diagnosed at advanced stage with high risk of mortality and 5-year survival rate of <20%.[7]

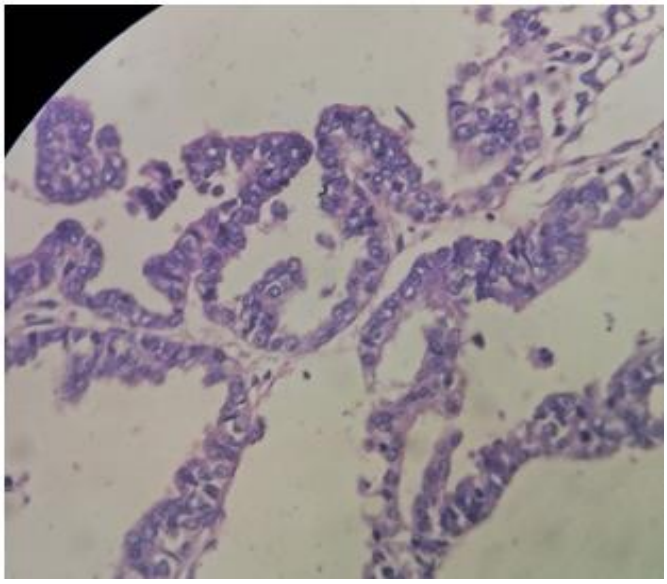

Figure 1: H&E stained slide showing High grade Endometrial Carcinoma.

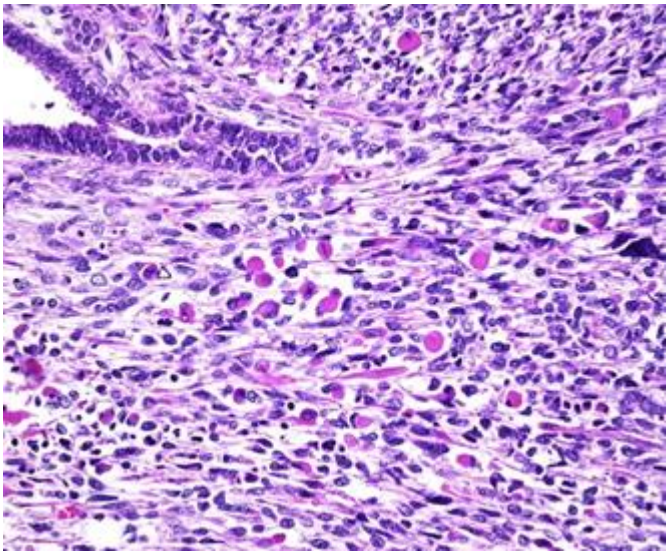

Figure 2: H&E stained slide showing extensive areas of rhabdomyosarcoma. The image shows numerous

rhabdomyoblasts with abundant dense eosinophilic cytoplasm.

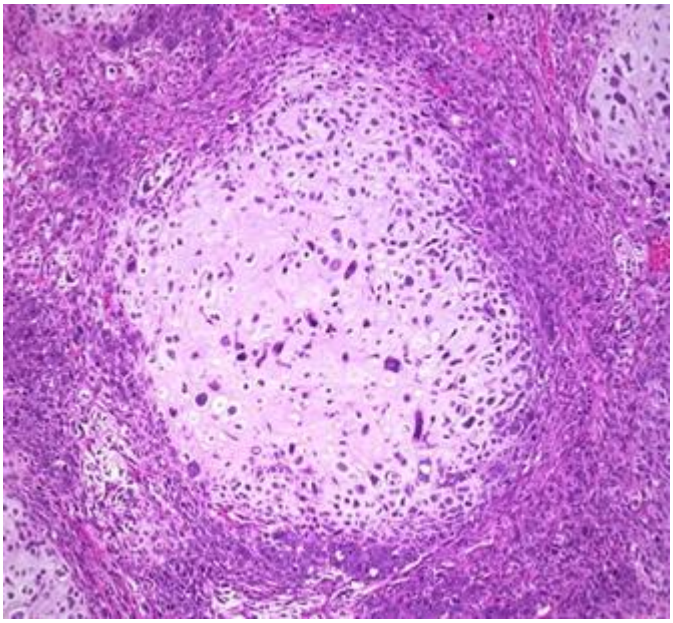

Figure 3: The sarcomatous component showing heterologus elements in the form of cartilage

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