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A Case Report on Uterine Carcinosarcoma

Dr. Vatsala Shahi[1], Dr. Minthami Sharon[2]

[1]Department of Obstetrics and Gynaecology, Sree Balaji Medical College and Hospital, Chromepet, Chennai, Tamil Nadu, India
vatsalashahibpkihs[at]gmail.com

[2]Associate Professor, MS(OBG), Department of Obstetrics and Gynaecology,
Sree Balaji Medical College and Hospital, Chromepet, Chennai, Tamil Nadu, India

Abstract: ***The carcinosarcoma is a rare malignant mixed müllerian tumour with a highly aggressive, biphasic tumour consisting of both epithelial and mesenchymal components. The presented case refers to a 52 year old female with heavy menstrual bleeding. The Ultrasound and computed tomography showed a large uterine mass with regional and distant metastatic lymphadenopathy. The histopathological and immunohistochemical analysis of the surgically resected piece allowed the carcinosarcoma diagnosis. Considering the highly invasive nature of uterine carcinosarcomas, timely detection of this cancer using characteristic imaging and pathology findings is of extreme importance to improve the patient's survival. The uterine carcinosarcoma's incidence is rare, that is why this case is interesting taking in consideration the biphasic pattern of the tumour.***

Keywords: carcinosarcoma, uterus, malignant mixed mesodermal tumour

1. Introduction

The term "carcinomasarcoma" refers to a tumour that has a mixed nature, with the origin of both carcinoma and sarcomatous alterations, even if each of these tumours has distinct constituent cellular characteristics.

Immunohistochemical and cytogenetic studies have established that both carcinoma and sarcoma are derived from a common stem cell.

The incidence of uterine carcinosarcoma is approximately 1 to 4 in 100,000.

The peak incidence in the age range 62-67 years. African and Americans are twice at risk compared to Caucasians. Carcinosarcoma tumours are commonly diagnosed in post menopausal women, however, It can also be seen in young adults and children.

The risk factors would include obesity, nulliparity, exogenous estrogen, prolonged use of tamoxifen and radiation exposure. The association between smoking and tumour aggressiveness is directly proportional.

Other neoplasia/carcinomas do not have the same clinical appearance. Carcinosarcoma is defined by a triad of excessive menstrual flow, uterine tumour, and abdominal pain.

The uterine mass is most usually found in the fundus region of the uterine body's posterior wall.

Lymphatic spread, peritoneal seeding, and pulmonary metastasis are all common in uterine carcinosarcomas.
At the first presentation, around 30-40% of patients have extrauterine involvement.

As a result, the prognosis is bleak.

The uterine mass has a polyploid appearance with a mushy consistency and regions of NECROSIS and HEMORRHAGE when viewed under a microscope.

Endometrial carcinoma (e.g., endometriosis, serous, clear cell) and uterine mesenchymal cancers are among the differential diagnoses (e.g, adenosarcoma, leiomyosarcoma, and undifferentiated uterine sarcoma).

2. Patient and method

Patient and treatment options

A 52-year-old lady with significant irregular menstrual bleeding and stomach pain presented to the clinic.

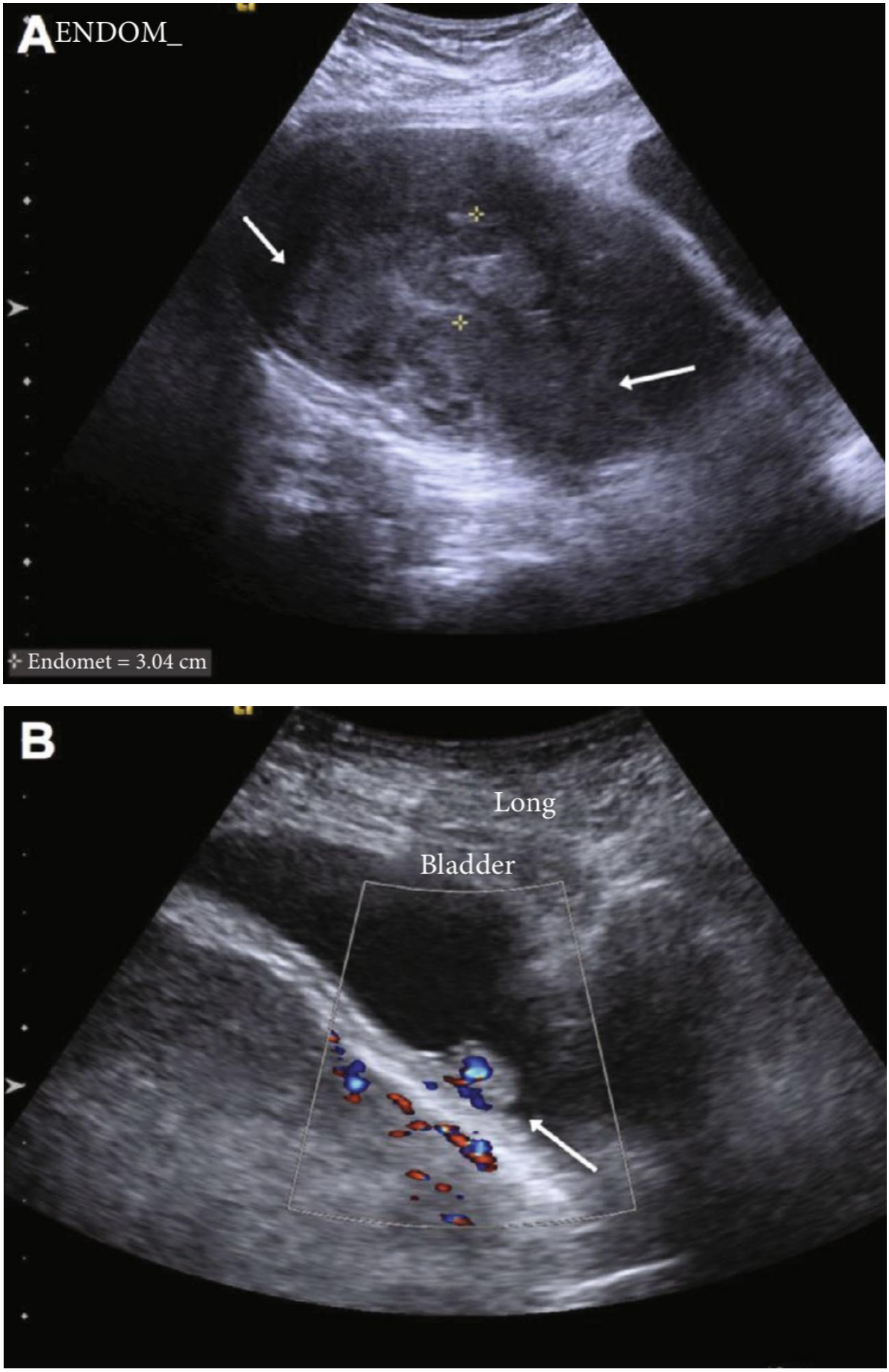
The patient denied experiencing any accidental weight loss, dizziness, palpitation, shortness of breath, or bowel or bladder complaints.

During the physical examination, the hard supraclavicular lymph nodes were found to be enlarged.

The external genitalia were normal, and the uterus was large, according to the pelvic examination.

The uterus had a heterogeneous ecotexture with numerous masses, according to an ultrasonography of the pelvis. A massive heterogeneous mass concentrated within the uterus, including more than 50% of the myometrium, was discovered on computed tomography of the pelvis.

A chest and abdomen computed CT revealed no major abnormalities.



The image (a) shows a heterogeneous uterine echotexture with a poorly defined mass on ultrasound. (b)The endometrial stripe has thickened and is 3.0cm in length.

A soft tissue mass with vascularity is shown within the posterior wall on a colour Doppler scan.

A surgical intervention was made-TOTAL ABDOMINAL HYSTERECTOMY +B/L SALPINGO OOPHERECTOMY.

The respected specimen revealed a polypoid mass that is soft and friable and covers the uterine cavity. Variable characteristics of the surface could be detected on the slices, ranging from white-grey to white-yellow, with patches of necrosis and bleeding. Serial sections of the uterine body, particularly the tumoral mass, were taken and initially analysed using standard histological techniques. Later, slices of biphasic neoplastic proliferation were immunohistochemically processed using the LSB/HRP method for biphasic neoplastic proliferation. Ki67 (monoclonal anti-human Ki67 antigen, clone MIB-1, code 724001, DAKO Cytomation) and EMA (epithelial membrane antigen) were tested in the tumour.

ER (monoclonal anti-human oestrogen receptor, clone PPG5/10, code M7292, DAKOCytomation), PR (monoclonal anti-human progesterone receptor, clone 1A4, code A0098, DAKOCytomation), actin (clone 1A4, DAKOCytomation), vimentin (clone 1A4, DAKOCytomation), vimentin (clon (clone V9; DAKOCytomation). The number of positive cells reported to 100 cells (positive or negative) to the objective 40 was determined for Ki67.

3. Result

The tumour belonged to a 52-year-old woman who had been experiencing vaginal haemorrhage. A whole abdominal hysterectomy was performed, as well as a bilateral salpingo-opherectomy. The histological analysis of serial sections taken at various levels of the polypoid mass revealed a biphasic neoplastic growth with an epithelial predominance. The epithelial component was endometrioid adenocarcinoma with significant regions of squamous alterations that were well and moderately differentiated (Figure 1).

The spindle cells in the homologous sarcoma component of the high range were extended and in some locations enormous. In the endometrial stroma with nuclear atypia, their cytoplasm is quantitatively reduced with imprecise limits (Figure 2)

Different immunomarking for the epithelial and mesenchymal components was shown using a range of immunohistochemical stains. As a result, the immunoreaction for the hormone receptors ER and PR was positive for the carcinomatous epithelial component as well as areas with squamous metaplasia (Figures 3 and 4).

The epithelial component has a high EMA reactivity (Figure 5). The sarcomatous spindle cell component may stain with EMA in a localised manner, although this staining is limited and less intense than the carcinomatous component's reactivity. For the sarcomatous component, actin immunostains were positive and light positive to vimentine (Figures 6 and 7).The study of cellular proliferation revealed a lower result, less than 1%, when the index of positive for Ki67 was calculated (Figure 8).

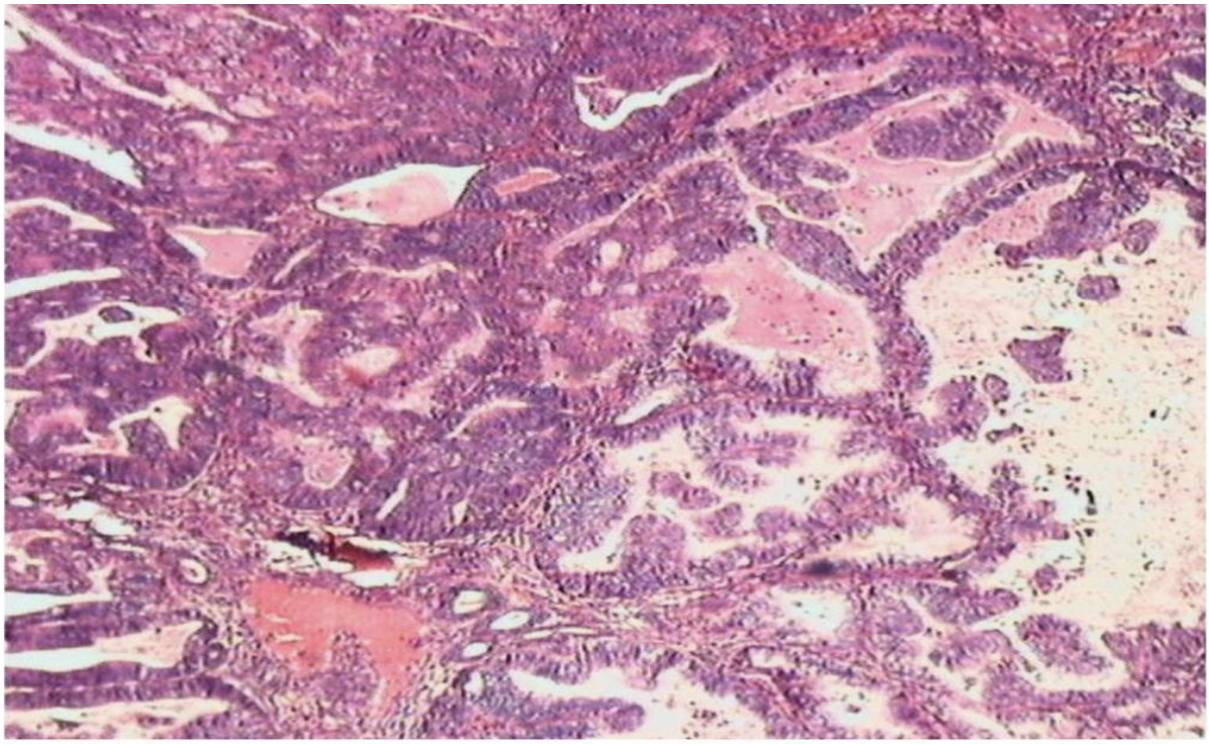


Figure 1: HE Stain

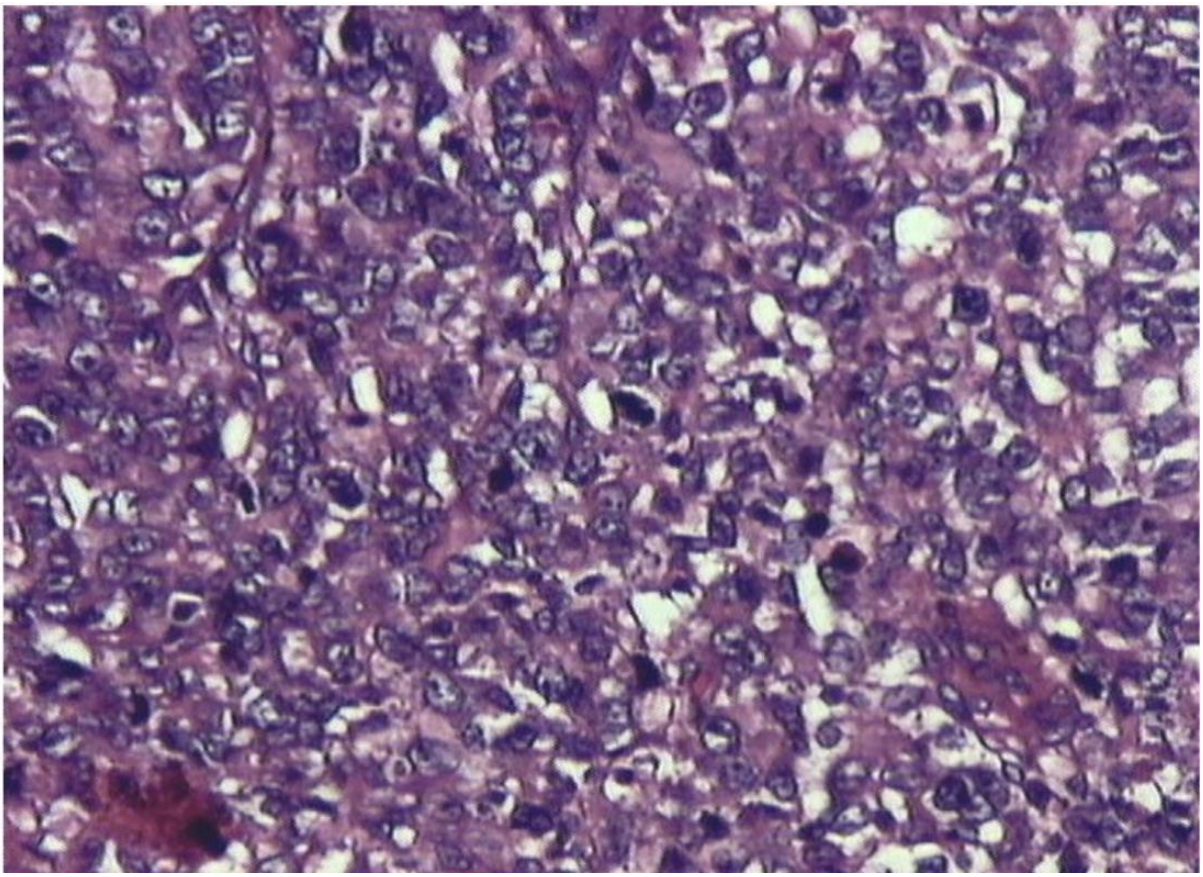


Figure 2: Uterine Carcinosarcoma

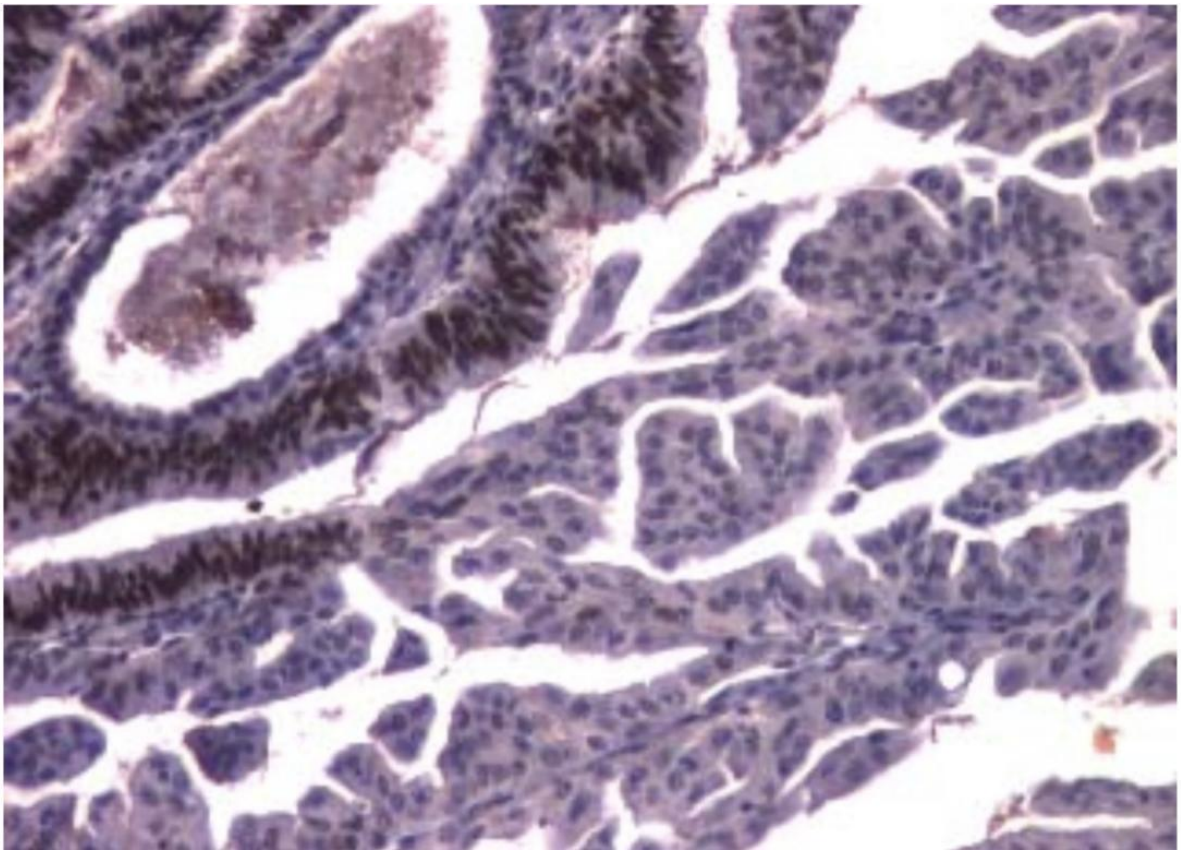


Figure 3: ER stain

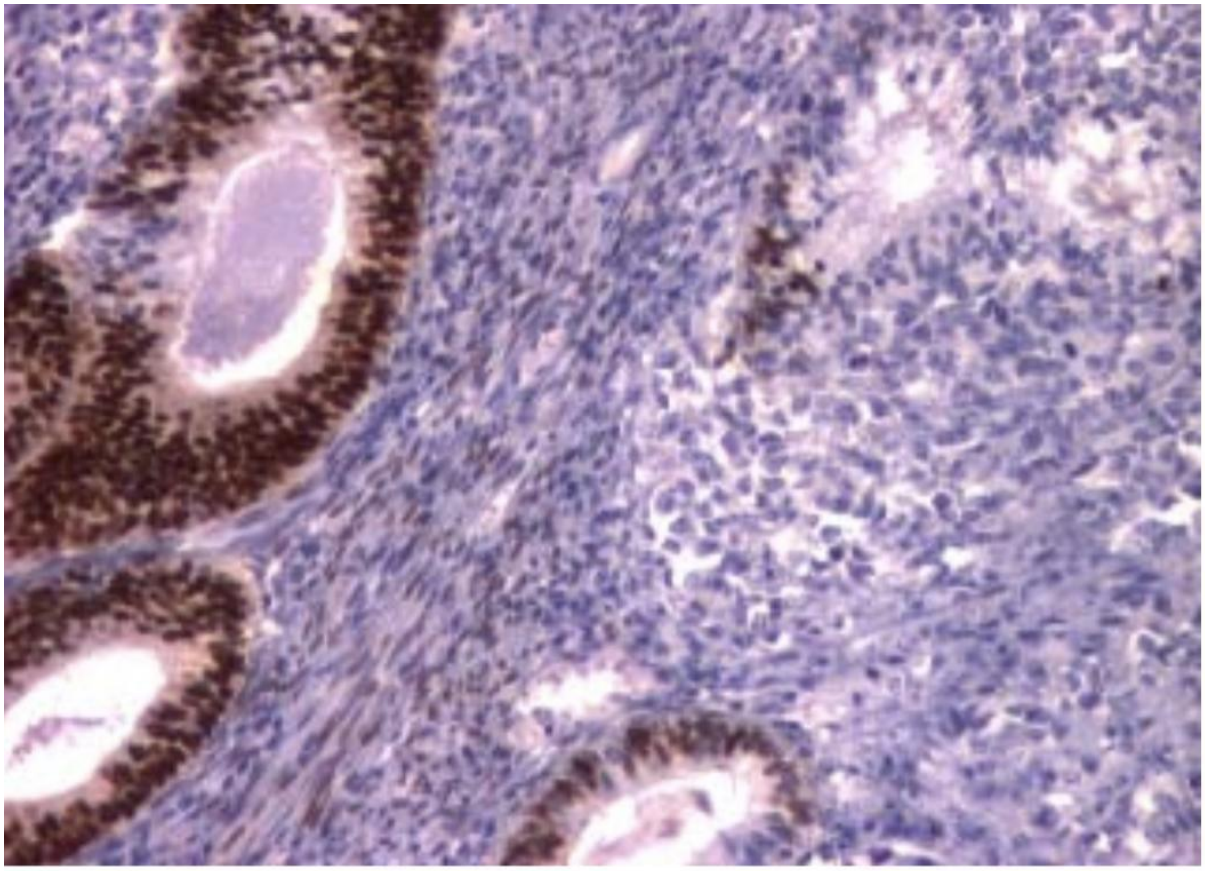


Figure 4: PR stain

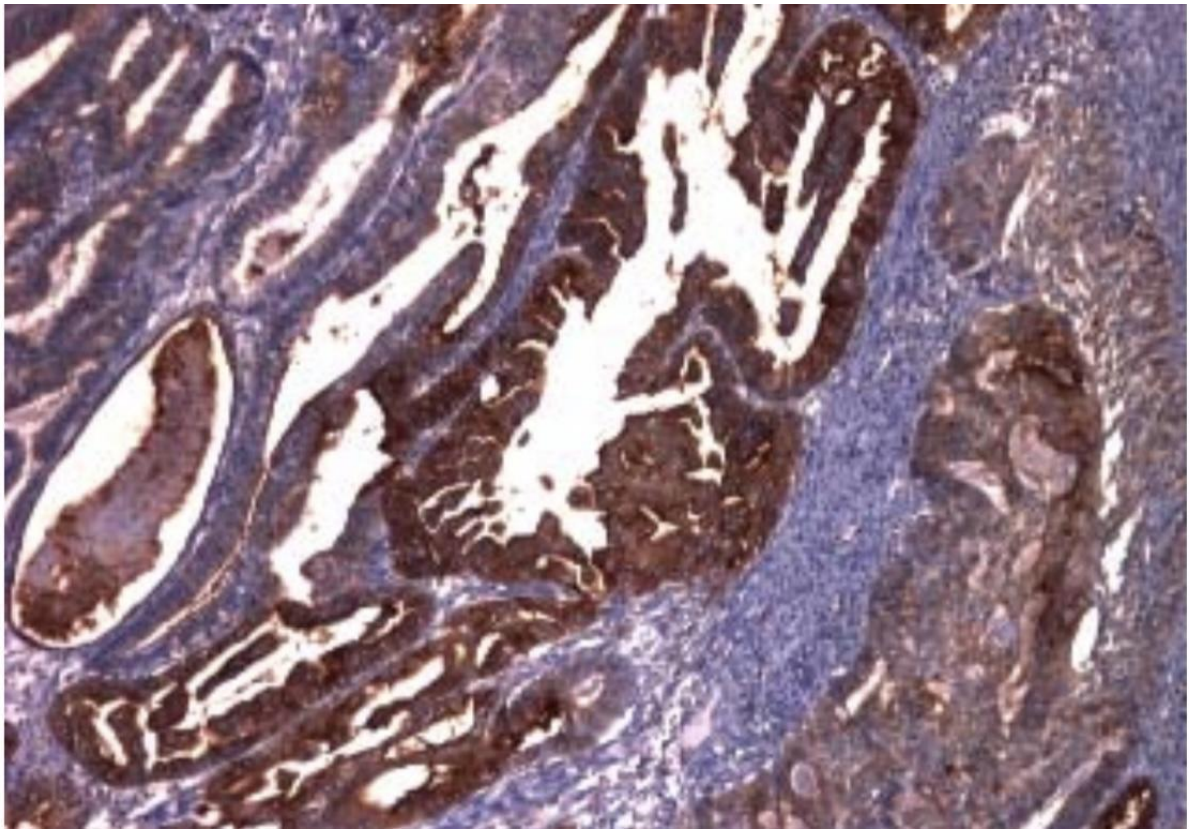


Figure 5: EMA stain

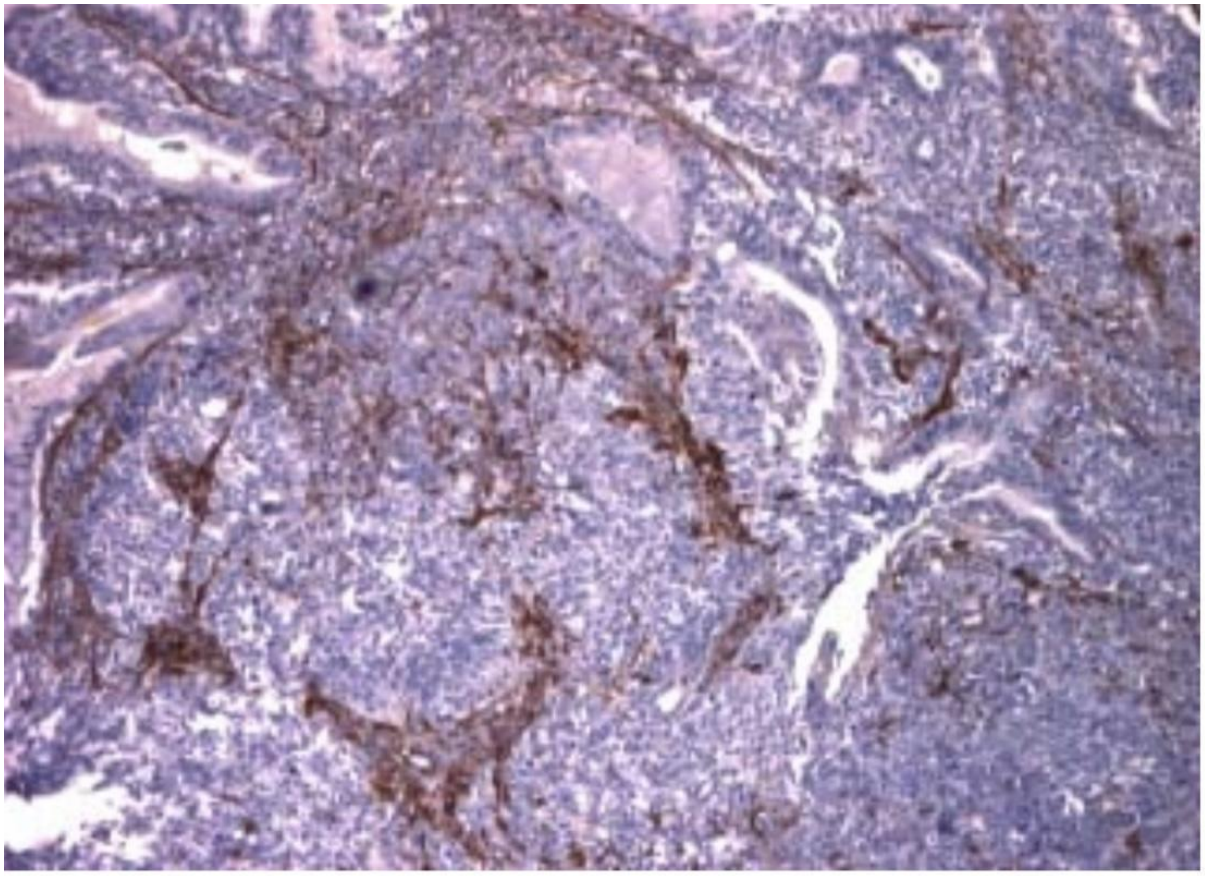


Figure 6: ACT stain

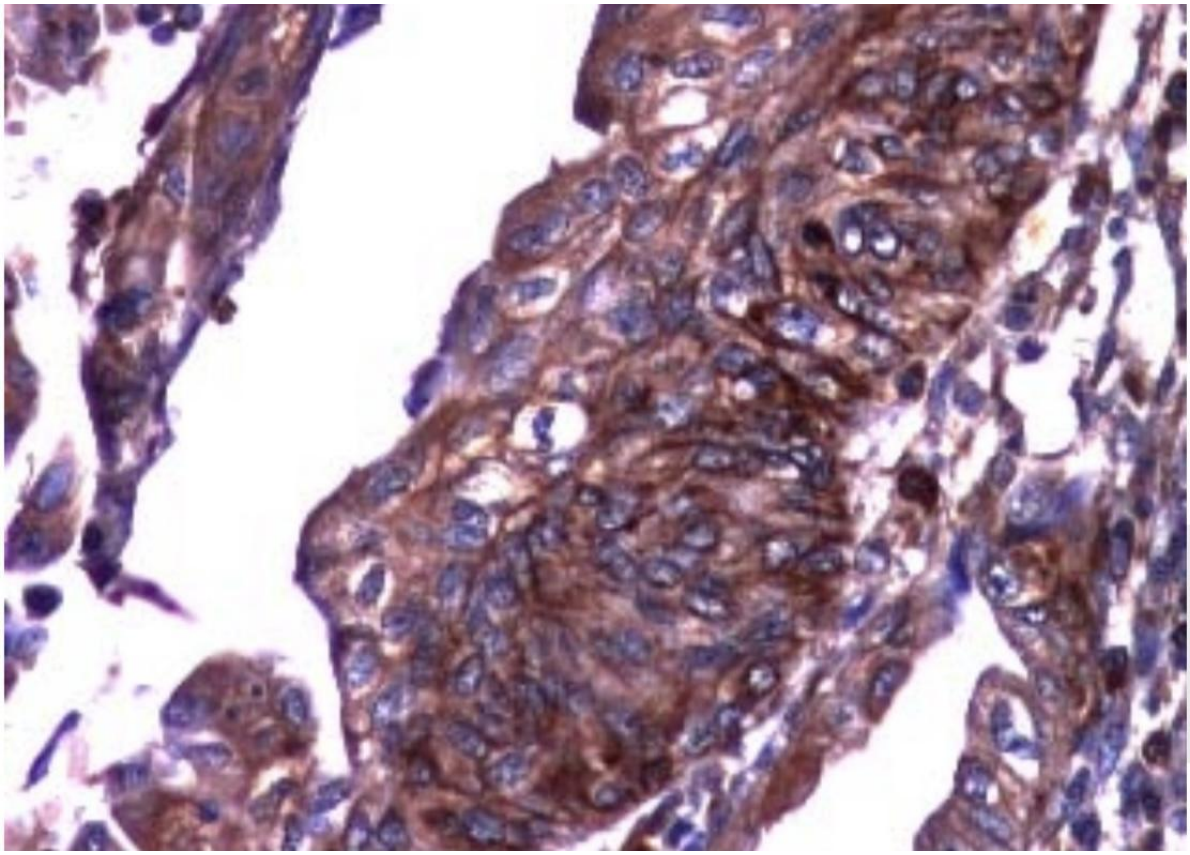


Figure 7: VIM stain

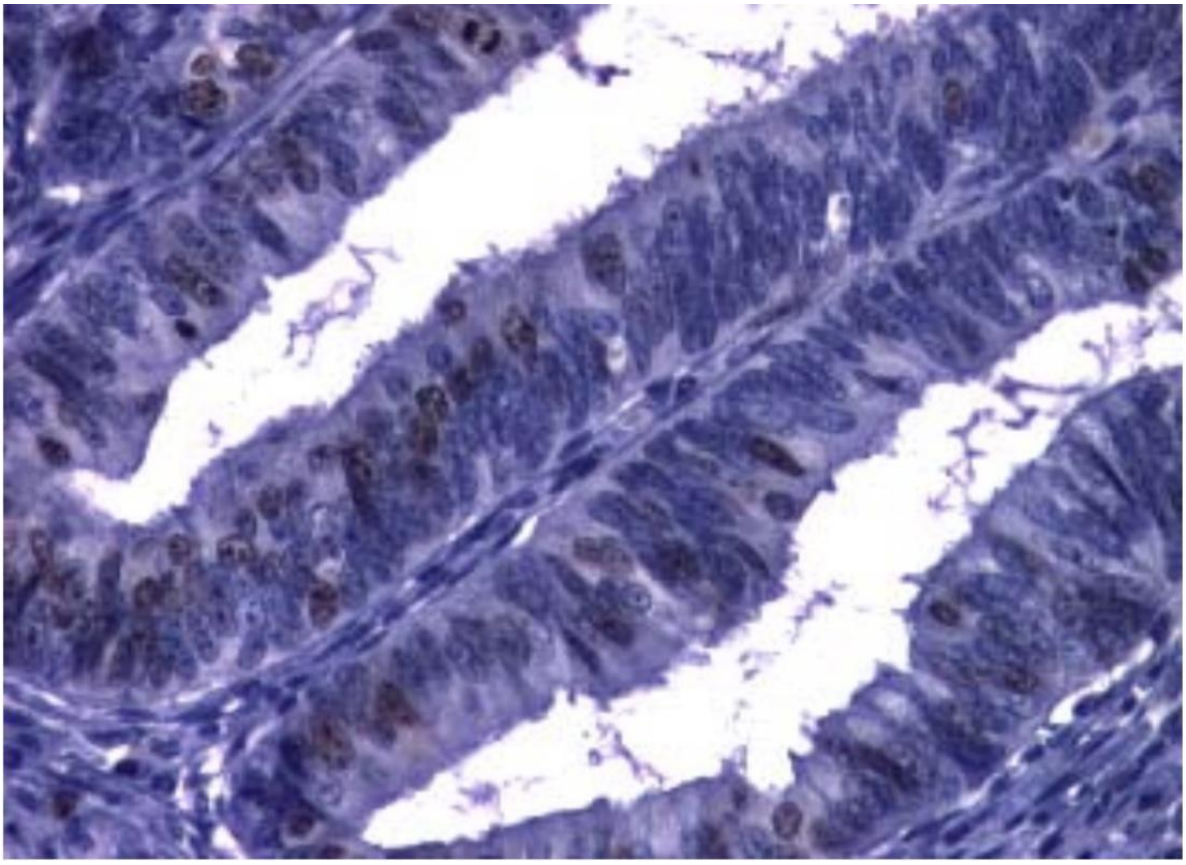


Figure 8: ki67 stain

4. Discussion

Uterine carcinosarcoma is an uncommon mixed müllerian tumour that makes about 3 to 4% of all malignant uterine tumours. Women between the ages of 62 and 67 were most commonly diagnosed with this malignancy. Vasovaginal haemorrhage and stomach discomfort are the most typical symptoms. The mixed mullerian tumour is frequently polypoid and can create a lot of tissue, which allows for the previous, but this is not the case in our patient.

The epithelial and mesenchymal origins of the two neoplastic proliferations revealed by histological examination prompted a diagnosis of carcinosarcoma.

The cytokeratin and EMA immunohistochemical stains might be useful in demonstrating the biphasic pattern of the Mixed mullerian tumour.

Both carcinomatous and sarcomatous elements are reactive for cytokeratin and the epithelial significant membrane antigen, according to immunohistochemistry studies (EMA).

In our scenario, EMA is being used mostly for the epithelial component. Carcinosarcoma is a better word for these tumours since they frequently contain a mixture of sarcomatous and carcinomatous cells and are originally separated into homologous and heterologous sub-types based on the constituent distinctive cells.

According to the literature, the sarcomatous mesenchymal component can contain heterologous parts of osteosarcoma, leiomyosarcoma, chondrosarcoma, or rhabdomyosarcoma type in around half of the cases.

According to recent research, uterine Mixed mullerian tumours are truly dedifferentiated epithelial tumours that should be treated as such.

The existence of this type of tumour complicates differential diagnosis, especially when it comes to the carcinoma component. That is why there is adenosarcoma as well as a slightly differentiated endometrial carcinoma with pseudosarcoma-like groupings of epithelial malignant cells in the surrounding stroma. A stromal sarcoma must also be considered in the differential diagnosis (appears at children and teenagers, microscopically it has not a carcinomatous component)

Even if the carcinosarcoma was detected and treated, its prognosis is poor.

Recurrence and survival were not linked to age, histological type (homologous or heterologous), or adjuvant treatment.

5. Conclusion

In a case of malignant mixed müllerian tumour, the presented case shows many clinical-histopathological characteristics as well as issues with differential diagnosis. The presence of both epithelial and mesenchymal growth raises the possibility of a biphasic tumour, which was supported by immunohistochemistry research.

In conclusion, the study reports on a rare case of uterine carcinosarcoma. Given the extremely invasive nature of uterine carcinosarcoma, early diagnosis of the disease using typical imaging and pathology findings is critical for patient survival.

Acknowledgement
The patient gave written authorization for the study to be published and presented.

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