International Journal of Reproduction, Contraception, Obstetrics and Gynecology
Agrawal T et al. Int J Reprod Contracept Obstet Gynecol. 2025 Aug;14(8):2757-2761
www.ijrcog.org
pISSN 2320-1770 | eISSN 2320-1789

DOI: https://dx.doi.org/10.18203/2320-1770.ijrcog20252169

Case Report

Uterine carcinosarcoma: a rare and aggressive neoplasm

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Received: 18 June 2025
Accepted: 03 July 2025

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ABSTRACT

Uterine carcinosarcoma (UCS) is a rare highly aggressive tumor accounting for 2-3% of all uterine malignancies. It's characterized by postmenopausal bleeding and often presents with a palpable pelvic mass. The tumors usually contain both malignant epithelial carcinomatous and sarcomatous mesenchymal components. Herewith presenting a case report of a patient with postmenopausal bleeding with a 16 weeks size lump in the abdomen.

Keywords: Postmenopause, Neoplasm, Uterine carcinosarcoma

INTRODUCTION

Uterine carcinosarcoma (UCS) also known as a malignant mixed mullerian tumor (MMMT) is a rare gynecological malignancy with poor prognosis. This neoplasm shows a combination of both epithelial i. e. carcinomatous and mesenchymal i. e. sarcomatous tumor cells. It comprises about 1.5 % of all uterine malignancy.[1] This type is a much more aggressive tumor than high grade endometrial carcinoma where the 5-year survival rate is approximately 30% (stage I-II: 59%; stage III: 25%; stage IV: 9%).[2] Presence of heterologous elements is a poor prognostic factor in early-stage disease but its significance remains to be determined in advanced stage disease.[3] Metastatic element of this is mostly of the carcinomatous type which typically spreads lymphatically, while sometimes it's sarcomatous which spreads locoregionally and combinations of both has also been found.[4] Difference between endometrial carcinoma and uterine sarcoma is difficult to diagnose clinically. Most patients mostly present with symptoms like vaginal bleeding, abdominal mass and pelvic pain. The 10% of patients have distant metastasis at presentation and extrauterine spread in up to 45% of patients at presentation.[5] Histological examination and immunohistochemistry can give definitive diagnosis. Carcinomatous cells convert themselves to sarcomatous cells through the epithelial to mesenchymal transition, this is supported by high epithelial to mesenchymal transition gene signature scores and is likely due to epigenetic alterations at microRNA promoters and histone gene mutations and amplifications.[6] Hence in our case immuno-histochemistry was advised.

CASE REPORT

A 66-year-old postmenopausal woman presented to tertiary care centre OPD with complaints of postmenopausal bleeding since two months. There was no associated pain or systemic symptoms. The patient had history of weight loss in past 2 months. She had 3 vaginal deliveries and underwent tubal ligation. Patient was a known case of hypertension for 1 year; there was no other past medical or surgical history. General examination revealed that patient was averagely built and moderately nourished. There was no pallor or edema. Respiratory and cardiac systemic examination were normal. On per abdomen examination, mass of approximately 14-16 weeks size, firm, mobile and non-tender in nature. On per speculum examination both lips of cervix adherent and cervix flushed to vagina which was dry and pale. On per vaginum examination uterus of 14-16 weeks size with posteriorly firm, non-tender mass felt. Ultrasound revealed 10.2×7.4×9.6 cm sized multilobulated solid cystic lesion involving endometrial cavity and with adjacent fluid collection in endometrium. It showed mild vascularity and few calcific foci within. Hence findings suggestive of

endometrial neoplastic etiology. All her laboratory findings were within normal limits. PAP smear was suggestive of ASCUS-atypical squamous cells of undetermined significance.

Per operative MRI pelvis suggested a large solid cystic lesion of altered signal intensity which is seen completely occupying the endometrial cavity measuring approx. 11.6×8.2×10.9 cm with the solid component appearing hypointense on T1W images and hyperintense on (T2-weighted imaging) T2W images measuring approximately 8.6×9.8×7.5 cm (AP×TR×CC) and is seen arising from the fundo-posterior uterine wall as shown in Figure 1A.

Few areas of blooming are noted within solid component of lesion. Cystic component appears hyperintense on T2W and hypointense on T1W with few small T2W hypointense solid components also noted within measuring approximately 1.2×1.1 cm. On post contrast study solid components show heterogeneous enhancement. Mild thin enhancement was also noted involving periphery of lesion. Inferiorly, it was seen indenting dome of urinary bladder with maintained fat planes with urinary bladder. No evidence of urinary bladder wall/bowel wall invasion is seen. Hence MRI findings suggestive of space occupying lesions of endometrial cavity likely of neoplastic etiology with morphological changes (Figure 1 B).

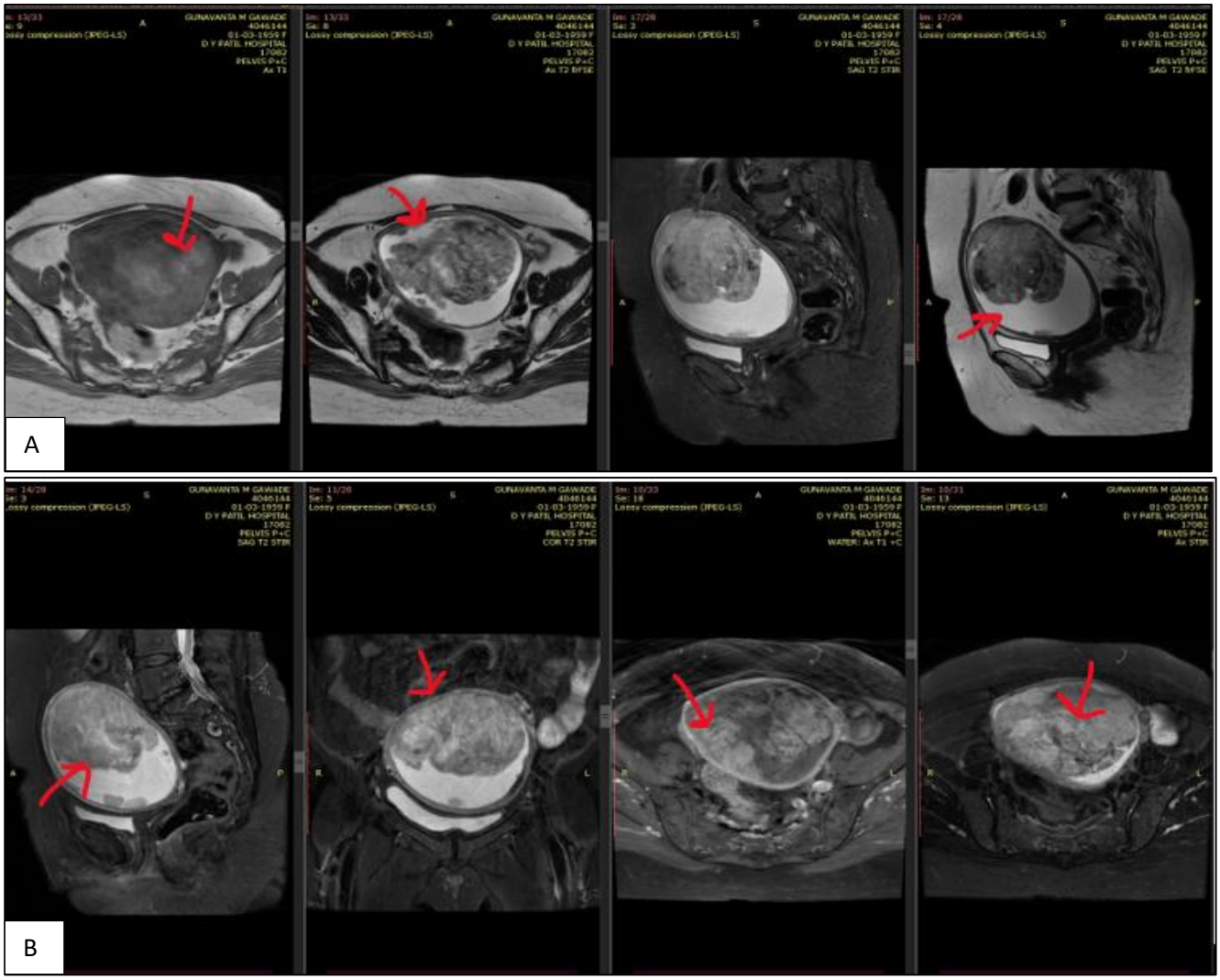

Figure 1 (A and B): A-showing MRI pelvis. B-showing MRI pelvis showing morphological changes.

After MRI report PET scan was advised which showed a Large solid cystic lesion involving the endometrial cavity with increased metabolic activity in the solid component-likely representing neoplastic etiology. PET scan also showed increased metabolic activity in right external iliac lymph node-suspicious for metastasis. There was no evidence of metabolically active disease anywhere else in the body.

The initial diagnosis was endometrial cancer. The patient underwent surgery-total abdominal hysterectomy with bilateral salpingo-oophorectomy and pelvic lymph node dissection which included external, internal and common iliac lymphadenectomy. The frozen section showed high grade carcinoma. On gross-examination, the cut open specimen of the uterus showed 10×8 cm friable degenerative mass with brownish colored discharge filling

the cavity approximately 100 ml. The endometrium was unhealthy was filled with the necrotic mass as shown in Figure 2.

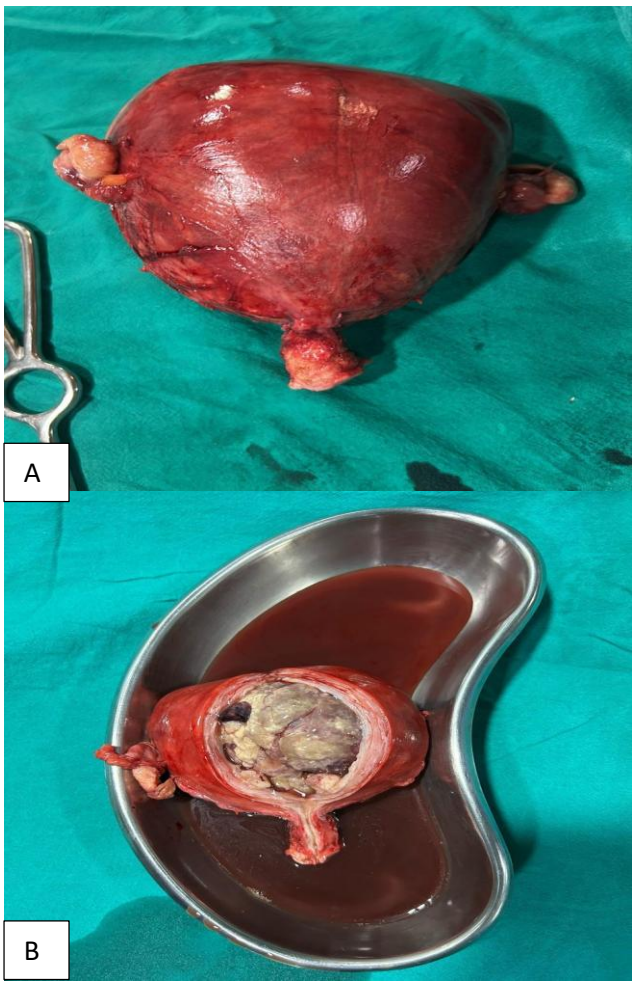

Figure 2 (A and B): Gross examination of specimen of uterus.

On microscopic examination of tumor-sections studied show dual morphology tumor with juxtaposed high grade carcinomatous and sarcomatous elements. Carcinomatous elements as seen in Figure 3 A shows high grade glandular elements with mixed serous and high grade endometrioid carcinoma like features. Sarcomatous elements-spindles and pleomorphic high grade and homologous pattern as shown in Figure 3 B. myometrial invasion present <50%.

However, the cervix, ovary, fallopian tubes, and surgical margins were free of tumor. Features suggestive of MMMT. PTNM classification (AJCC 8th edition): pT1aN1a.

pTta-Tumor limited to the endometrium or invading less than half of the myometrium. pNa-Regional lymph node metastasis (greater than 2 mm in diameter) to pelvic lymph nodes. Postoperative staging work-up revealed no distant metastasis. The patient was referred for the adjuvant therapy.

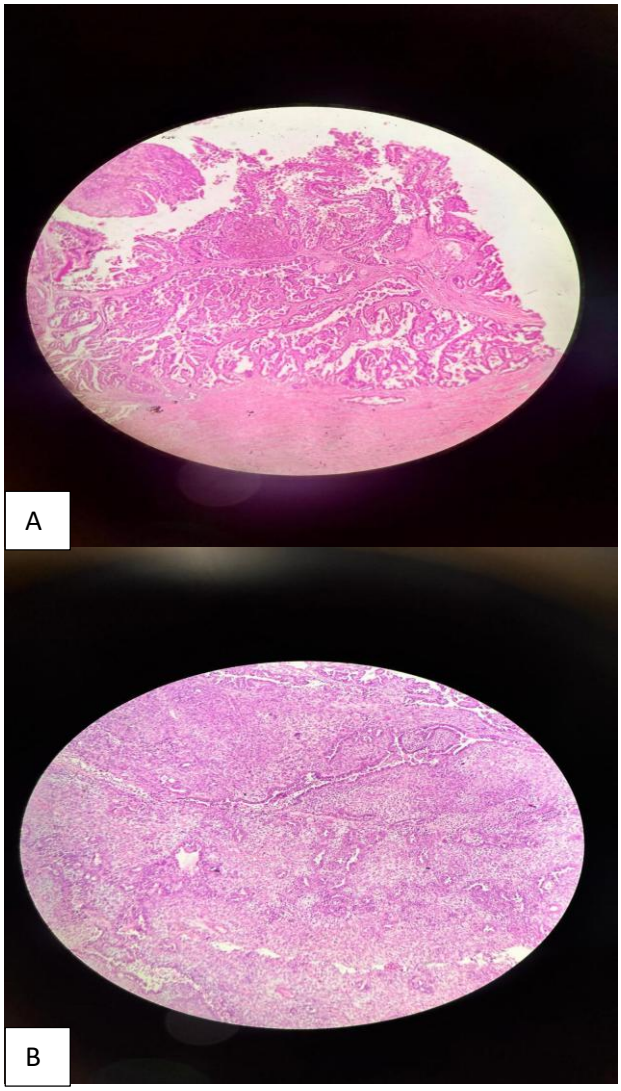

Figure 3 (A and B): A-Carcinomatous elements. B-sarcomatous elements.

DISCUSSION

UCSs are an aggressive and highly malignant type of tumor. They occur mainly in postmenopausal women and risk factors include obesity, nulliparity, and prior pelvic radiation.[7] Most patients present with common symptoms such as vaginal bleeding and uterine enlargement.[8] In the present case carcinosarcoma was diagnosed 11 years after menopause where patient complains of post-menopausal bleeding since 2 months. The symptoms and scan findings were typical of uterine carcinoma although the patient did not complain of abdominal pain. Carcinosarcomas are characterized by an aggressive clinical course and an extremely poor prognosis as there is distant metastasis via bloodstream and lymphatic system. It has been previously reported that 70-90% of tumor-related deaths occurred within 18 months after diagnosis.[10,11] However, a recent study reported that the prognosis of UCSs had improved with an overall median survival of 39 months.[12] UCSs are mixed epithelial and stromal tumors, with both components being malignant.[9,13] Homologous

carcinosarcomas feature sarcomatous elements such as fibrosarcoma, endometrial stromal sarcoma or leiomyosarcoma tissue types normally found in the uterus. In contrast heterologous carcinosarcomas contain sarcomatous components derived from tissues not typically present in the uterus. The epithelial carcinomatous portion most often consists of adenocarcinomas of the endometrioid, serous, or clear cell subtypes. In our case histopathology shows dimorphic tumors. Carcinomatous elements consisted of high grade glandular with mixed serous and endometrioid carcinoma like features, whereas Sarcomatous elements had spindles and pleomorphic- high grade and homologous type. Unlike pure endometrial carcinomas, carcinosarcomas have a higher tendency for deep myometrial invasion and early metastasis. Radiologically, MRI has a superior role in the staging of UCS with a 70% staging accuracy. The staging of this malignancy should follow the guidelines established by the international federation of gynecology and obstetrics (FIGO) or the tumor, node, metastasis (TNM) classification system, as it falls under the category of endometrial carcinoma.[14] UCSs typically present as large masses occupying the endometrial cavity. On imaging, they generally show low or isointense signals on T1-weighted imaging (T1WI) and high or mixed signal intensity on T2WI. The presence of high-signal foci on T1WI, which may indicate hemorrhage, is considered a distinctive feature of carcinosarcomas. Another characteristic imaging feature is mild to moderate contrast enhancement, which helps distinguish carcinosarcomas from other uterine malignancies. Unlike typical carcinomas which often show early enhancement followed by a decrease carcinosarcomas tend to demonstrate persistent or progressive mild to moderate enhancement over time.[15,16] Surgical removal remains the cornerstone of UCS treatment, commonly involving a total hysterectomy, bilateral salpingo-oophorectomy and lymph node dissection of both the pelvic and para-aortic regions. Postoperative outcomes are generally improved with the use of adjuvant therapies including radiation, chemotherapy or a combination of both.[17-19] Adjuvant therapy is recommended for all stages of the disease and has demonstrated a more favorable prognosis given the highly aggressive nature and poor prognosis of UCS.[20] The suggested follow-up protocol for patients with UCS includes physical and gynecological check-ups should be conducted every 3 to 4 months during the initial two years then every six months until five years. Additionally, a CT scan is typically performed annually for the first 3 to 5 years.[21]

Our case highlights the need for a high index of suspicion in elderly patients with postmenopausal bleeding and the role of MRI and histopathology diagnosis with timely surgical intervention.

CONCLUSION

This case emphasizes the importance of early recognition, thorough surgical staging, and a multidisciplinary approach to treatment. Given the rarity of the disease, every case contributes valuable insights into its behavior, prognosis, and response to treatment. Long-term follow-up is essential due to the high risk of recurrence. Further research and larger studies are necessary to establish standardized treatment protocols and improve patient outcomes.

Funding: No funding sources
Conflict of interest: None declared
Ethical approval: Not required

REFERENCES

1. Rojas C, Tian C, Powell MA, Chan JK, Bateman NW, Conrads TP, et al. Racial disparities in uterine and ovarian carcinosarcoma: A population-based analysis of treatment and survival. Gynecol Oncol. 2020;157(1):67-77.
2. Creasman WT, Odicino F, Maisonneuve P, Beller U, Benedet JL, Heintz AP, et al. Carcinoma of the corpus uteri. Int J Gynaecol Obstet. 2003;83(1):79-118.
3. Ferguson SE, Geisler JP, Geisler HE, Richard RB, Robert AS. Carcinosarcoma of the uterus: a clinicopathologic study of 61 cases. Am J Surg Pathol. 2007;31(10):1653-61.
4. Fader AN, Boruta D, Olawaiye AB, Gehrig PA. Uterine papillary serous carcinoma: epidemiology, pathogenesis and management. Curr Opin Obstet Gynecol. 2010;22(1):21-9.
5. Black JD, English DP, Roque DM, Santin AD. Targeted therapy in uterine serous carcinoma: an aggressive variant of endometrial cancer. Womens Health. 2014;10(1):45-57.
6. Hayes MP, Ellenson LH. Molecular alterations in uterine serous carcinoma. Gynecol Oncol. 2010;116(2):286-9.
7. Gallup DG, Gable DS, Talledo OE, Otken LB Jr. A clinical-pathologic study of mixed mullerian tumors of the uterus over a 16-year period-the medical college of Georgia experience. Am J Obstet Gynecol. 1989;161:533-8.
8. Ali S, Wells M. Mixed mullerian tumors of the uterine corpus: A review. Int J Gynecol Cancer. 1993;3:1-11.
9. Villena-Heinsen C, Diesing D, Fischer D, Griesinger G, Maas N, Diedrich K, Friedrich M. Carcinosarcomas-a retrospective analysis of 21 patients. Anticancer Res. 2006;26:4817-23.
10. Barwick KW, LiVolsi VA. Malignant mixed Mullerian tumors of the uterus. A clinicopathologic assessment of 34 cases. Am J Surg Pathol. 1979;3:125-35.
11. Norris HJ, Roth E, Taylor HB. Mesenchymal tumors of the uterus. II. A clinical and pathologic study of 31 mixed mesodermal tumors. Obstet Gynecol. 1966;28:57-63.
12. Rauh-Hain JA, Shoni M, Schorge JO, Goodman A, Horowitz NS, del Carmen MG. Prognostic determinants in patients with uterine and ovarian carcinosarcoma. J Reprod Med. 2013;58:297-304.

13. Jin Z, Ogata S, Tamura G, Katayama Y, Fukase M, Yajima M, Motoyama T. Carcinosarcomas (malignant mullerian mixed tumors) of the uterus and ovary: A genetic study with special reference to histogenesis. Int J Gynecol Pathol. 2003;22:368-73.
14. Li L, Huang W, Xue K, Feng L, Han Y, Wang R, et al. Clinical and imaging features of carcinosarcoma of the uterus and cervix Insights Imaging. 2021;12(1):142.
15. Kamishima Y, Takeuchi M, Kawai T, Kawaguchi T, Yamaguchi K, Takahashi N, et al. A predictive diagnostic model using multiparametric MRI for differentiating uterine carcinosarcoma from carcinoma of the uterine corpus. Jpn J Radiol. 2017;35(8):472-83.
16. Bharwani N, Newland A, Tunariu N, Babar S, Sahdev A, Rockall AG, et al. MRI appearances of uterine malignant mixed mullerian tumors. Am J Roentgenol. 2010;195(5):1268-75.
17. Li Y, Ren H, Wang J. Outcome of adjuvant radiotherapy after total hysterectomy in patients with uterine leiomyosarcoma or carcinosarcoma: a SEER-based study. BMC Cancer. 2019;19(1):697.
18. Shinde A, Li R, Amini A, Chen YJ, Cristea M, Dellinger T, et al. Improved survival with adjuvant brachytherapy in stage IA endometrial cancer of unfavorable histology. Gynecol Oncol. 2018;151(1):82-90.
19. Cantrell LA, Havrilesky L, Moore DT, O'Malley D, Liotta M, Secord AA, et al. A multi-institutional cohort study of adjuvant therapy in stage I-II uterine carcinosarcoma Gynecol Oncol. 2012;127(1):22-6.
20. Gonzalez Bosquet J, Terstriep SA, Cliby WA, Brown-Jones M, Kaur JS, Podratz KC, et al. The impact of multi-modal therapy on survival for uterine carcinosarcomas. Gynecol Oncol. 2010;116:419-23.
21. Bogani G, Ray-Coquard I, Concin N, Ngoi NYL, Morice P, Caruso G, et al. Endometrial carcinosarcoma. Int J Gynecol Cancer. 2023;33:147-74.

Cite this article as: Agrawal T, Satia M, Badhwar V, Bandhu R. Uterine carcinosarcoma: a rare and aggressive neoplasm. Int J Reprod Contracept Obstet Gynecol 2025;14:2757-61.