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Amsalu Dabela-Biketi, MD
Department of Radiology
Yale-New Haven Hospital
New Haven, CT

Uterine Mass

A 71-year-old multiparous, diabetic postmenopausal woman from Puerto Rico presented with two months of progressive vaginal bleeding, including lemon-sized clots that required five pad changes daily. She noted a worsening odor ten days prior to admission, and sought medical care at a local emergency room, where she received antibiotics for "bacterial vaginosis". Her symptoms persisted, and she underwent a pelvic examination by a gynecologist, which revealed a necrotic mass at the cervix. She was subsequently referred for pelvic ultrasound (US) (Figures 1, 2).

Figure 1

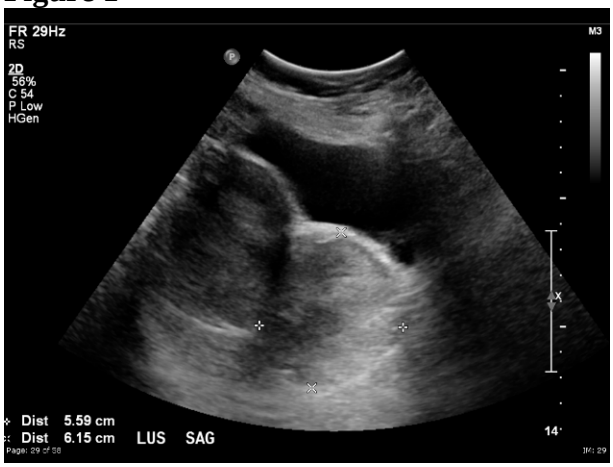

Figure 2 A and B

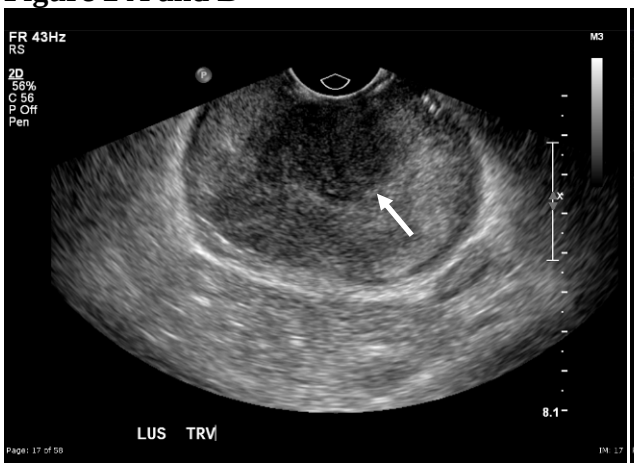

Figure 3 A and B

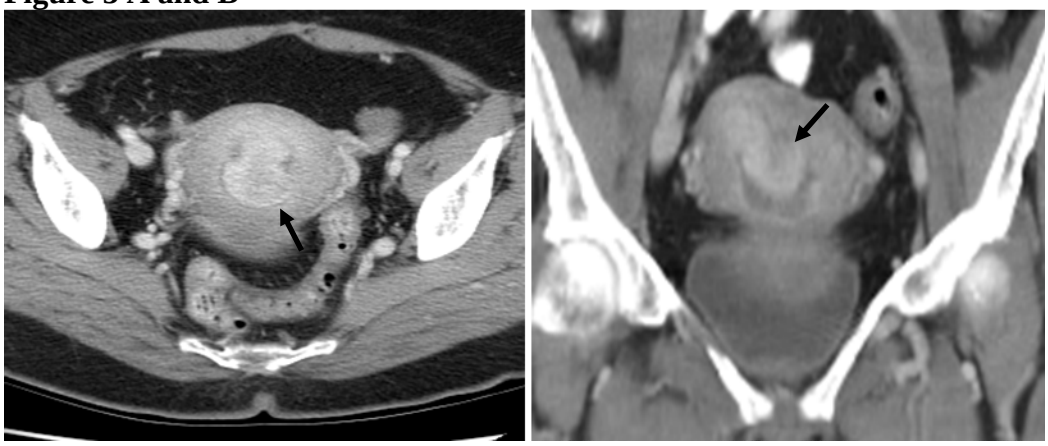

Figure 1: Transabdominal sagittal greyscale ultrasound image depicts a bulky mass expanding the lower uterine segment in this postmenopausal woman.
Figure 2: Transvaginal transverse greyscale (A) and sagittal color Doppler (B) ultrasound images of the lower uterine segment demonstrate a hypoechoic lesion centrally (arrow) in the expected location of the uterine cavity. Note the prominent adjacent vascularity on the color Doppler image.
Figure 3: Contrast-enhanced CT scans of the abdomen and pelvis were done for preoperative staging. Axial scan (A) and coronal reformatted image (B) demonstrates a polypoid mass (arrow) arising from the lower uterine segment and protruding inferiorly. Note the moderate density fluid within the endometrial cavity in B.

Figure 4 A and B

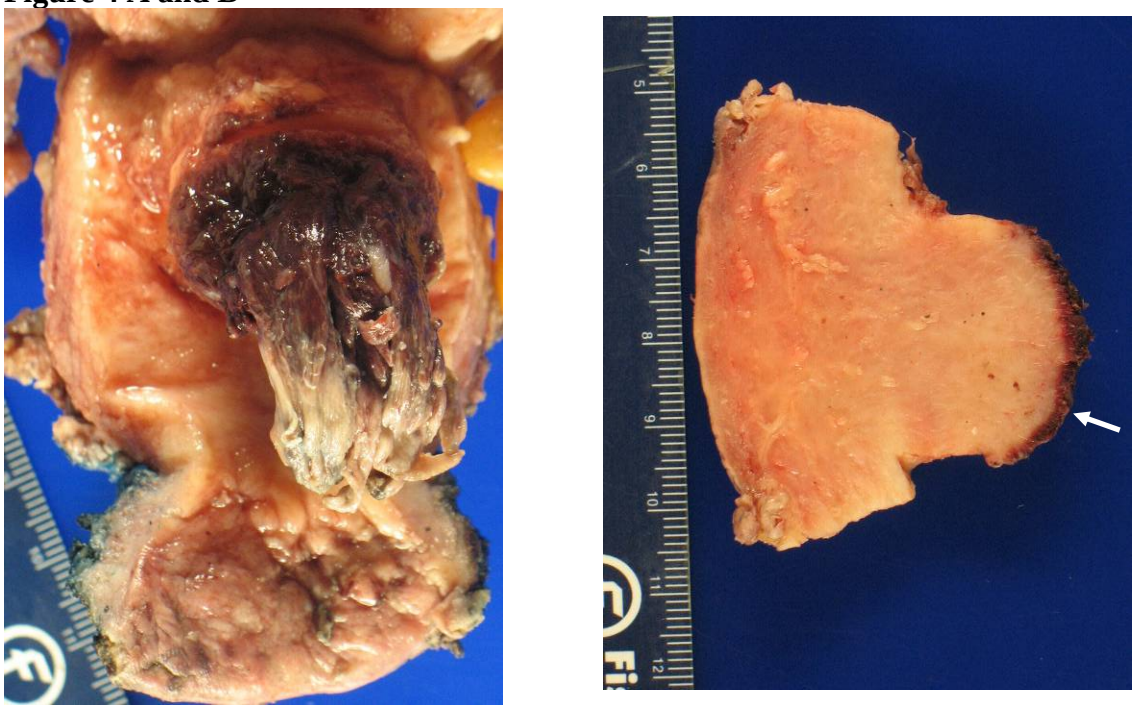

Figure 4.The patient underwent hysterectomy, bilateral salpingo-oophorectomy and pelvic lymph node dissection. **A:** Photograph of the uterine gross specimen demonstrates a purplish, polypoid mass arising from the lower uterine segment and directed inferiorly towards the cervix and vagina (pink colored tissue at bottom of image).The mass has purplish, friable filiform projections indicating gross areas of hemorrhage and necrosis. **B:** Photograph of the polypoid mass after bisection demonstrates tan-colored components with an external border of necrotic tissue (arrow).

Figure 5 A and B

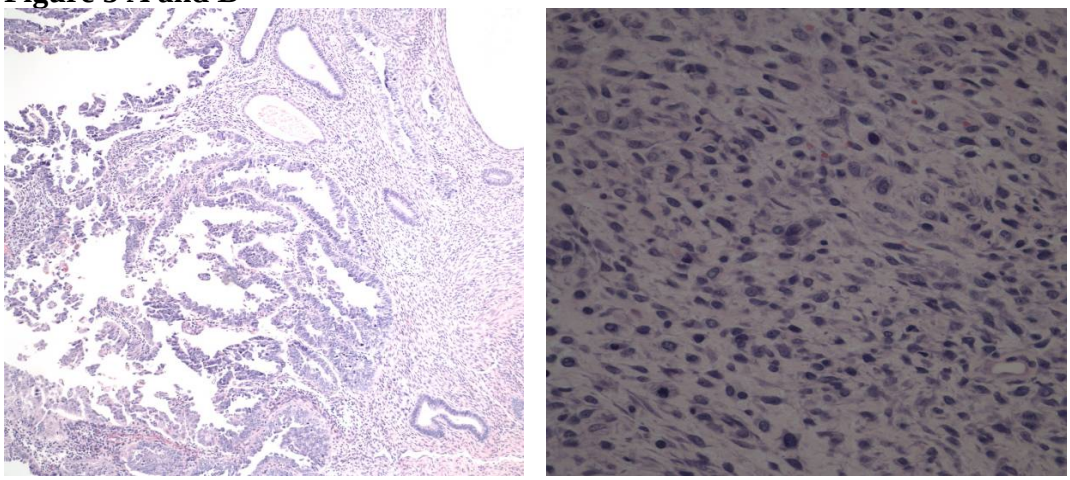

Figure 5.Histologic examination revealed both carcinomatous and sarcomatous components, with a few mixed areas. The carcinomatous component (arising from the endometrium) invaded the myometrium at the base of the polyp; representative hematoxylin- eosin (H&E) stained images are included here. **A:** Low-power (10X) H&E stain of the surface filiform projections of the polypoid mass demonstrates hypercellularity of the epithelial layer with a proliferation of disorganized glands, some of which contain fibrovascular stalks. **B:** High-power (60X) H&E stain of the central portion of the mass reveals disorganized, pleomorphic spindle-shaped cells, hypercellularity and multiple mitotic figures in varying stages, consistent with a higher-grade neoplasm. The ovaries and pelvic lymph nodes were negative for metastatic disease (not shown).

Diagnosis: Uterine carcinosarcoma, also known as Malignant Mixed Müllerian Tumor (MMMT)

Discussion

Uterine carcinosarcoma is a rare, aggressive, biphasic tumor that accounts for less than 8% of all uterine malignancies. However, it is important to consider given its high morbidity and mortality, which approaches 35% over five years [1,2,3]. Alternative names for this entity include "malignant mixed Müllerian (or mesodermal) tumor" (MMMT). The ‘biphasic’ nature of this tumor signifies its composition of both epithelial

and mesenchymal elements. While several theories exist regarding tumor origin, histologic evaluation can further divide the tumor into two categories based upon whether the mesenchymal component is from tissue native to the uterus or not, termed 'homologous' or 'heterologous', respectively [1].

Uterine carcinosarcoma is typically found in postmenopausal women aged 50-70 years who present with vaginal bleeding and passage of necrotic tissue, and a palpable pelvic mass [1]. On clinical examination, a necrotic mass may protrude through the cervical os. Risk factors for development of this neoplasm include nulliparity, obesity, exogenous estrogen exposure, chronic Tamoxifen use and prior pelvic irradiation [1]. Imaging is essential to patient evaluation and staging as metastases are often present at the time of diagnosis [3].

Although the imaging findings of uterine carcinosarcoma are not specific to this diagnosis, the tumor often presents as a large, heterogeneous broad-based mass arising in the lower uterine segment, often with polypoid or bulky morphology [1,3]. The mass may also prolapse through the cervix. Pelvic ultrasound is a useful imaging study that may reveal a bulky mass in the lower uterine segment and depict lesion hypervascularity [1].

CT scans show similar findings, and may also reveal areas of enhancement. However, the primary role of CT is in tumor staging [3]. MRI may help further characterize the extent of tumor in relation to the uterus. These tumors are usually heterogeneously hypointense on T1-weighted sequences and hyperintense on T2-weighted sequences [2,3,4]. Hemorrhage, necrosis and variable enhancement may be observed, in addition to local invasion of the endometrium, myometrium and cervix [2].

Overall, imaging features are not specific to the diagnosis of uterine carcinosarcoma. There is a broad set of differential diagnoses, including endometrial polyp, hyperplasia, or adenocarcinoma, cervical cancer, and uterine leiomyoma or leiomyosarcoma. The latter is a subset of uterine sarcoma along with carcinosarcoma and endometrial stromal sarcoma [2]. Treatment typically consists of hysterectomy with bilateral salpingoophorectomy, often accompanied with pelvic lymph node dissection, followed by varied chemotherapy and/or radiation regimens [1].

References

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Authors
Amsalu Dabela-Biketi, MD
Gowthaman Gunabushanam, MD

Mentor
Gowthaman Gunabushanam, MD

Institution
Department of Radiology, Yale-New Haven Hospital
20 York Street
New Haven, CT