

CLINICAL IMAGE

MR Imaging of a Leiomyosarcoma Arising in Leiomyoma

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Case Report

The patient was a 60-year-old woman (G2 P2) who was referred to our hospital due to an abdominal mass, which was incidentally pointed out at a nearby hospital. MRI was performed and demonstrated a huge (20 × 15 × 18 cm) mass in the right side wall of the uterus. It was composed of two different solid components with central hemorrhagic necrosis. One solid component exhibited a slightly low intensity on T₁-weighted images (T₁WI), and low intensity on T₂-weighted images (T₂WI) and diffusion-weighted images (DWI) compared to the myometrium, as well as heterogeneous strong contrast enhancement (Fig. 1). This component was suggested to be leiomyoma (LM). The other solid component with approximately 8 × 8 × 13 cm showed slightly low intensity on T₁WI, high intensity on both T₂WI and DWI, as well as heterogeneous moderate contrast enhancement (Fig. 1). The apparent diffusion coefficient (ADC) value was 0.91 × 10⁻³ mm²/s. This component was suggested to be leiomyosarcoma (LMS). Therefore, we diagnosed the mass as LMS arising in LM.

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Hysterectomy and bilateral salpingo-oophorectomy were performed. On pathological examination, the mass showed a peripheral solid component with central necrosis. It was composed of spindle cells with atypical nuclei and 1–2 mitoses per high-power field (HPF), including abnormal ones. These tumor cells were positive for smooth muscle markers, such as α -smooth muscle actin, desmin, and h-caldesmon, and the lesion was considered to be LMS. Additionally, the other component was composed of spindle cells arranged in fascicles without atypical nuclei and abnormal mitosis, which completely encircled the sarcoma. The latter component was diagnosed as LM. This tumor was pathologically diagnosed as LMS arising in LM (Fig. 2).

Discussion

Most cases of LMSs have been considered to have arisen *de novo*. Recently, the possibility was raised that some LMSs may arise in LM,^{1,2} LMS is considered not only develop from cellular or bizarre LM, but also from ordinary LM. Histologically, the border of both components is either clearly demarcated or merged.^{1,2} The immunohistochemical profiles and genetic aberrations suggest that uterine LMS could have arisen from pre-existing LM-like areas.³

Although the prognosis for LMS arising in LM is suggested to be better than that for *de novo* LMS,² it has not yet been fully characterized. Correct radiological evaluations might contribute to more appropriate pathological investigations, which help physicians arrive at the correct prognosis.

Conflicts of Interest

None.

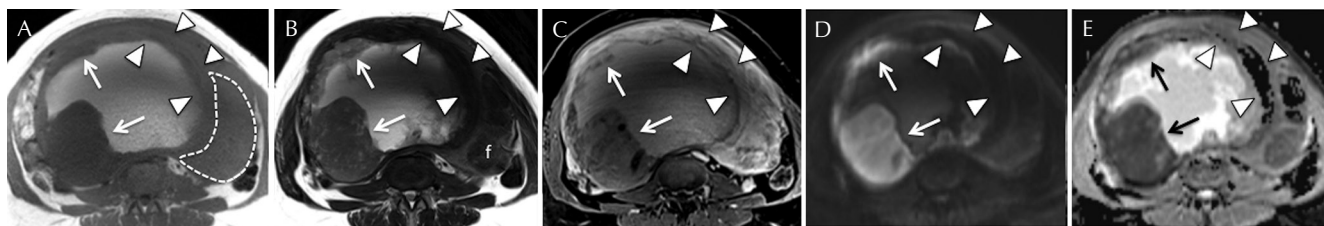


Fig. 1 (A) T₁-weighted images (T₁WI) (B) T₂-weighted images (T₂WI) (C) contrast-enhanced T₁WI (D) diffusion-weighted images (DWI) (E) apparent diffusion coefficient (ADC) map. The mass in the right side wall of the uterus (A, dotted line) is composed of two different solid components. One component (arrowheads) is suggested to be leiomyoma (LM). The other solid component (arrows) is suggested to be leiomyosarcoma. Another LM (f) is found in the uterus (B).

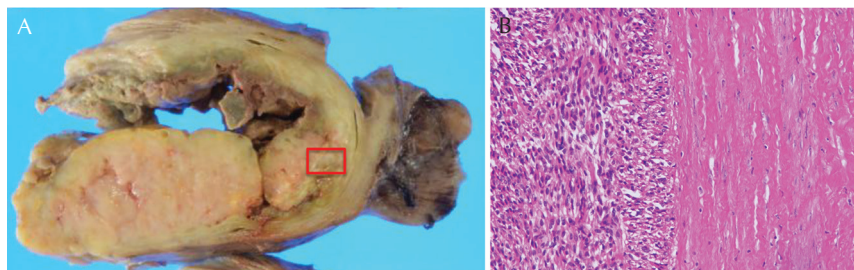


Fig. 2 (A) Histopathological photograph of the specimen corresponding to Fig. 1 reveals the solid mass with central necrosis; (B) histopathological specimen of the square area in Fig. 1 shows an abrupt transition between the leiomyosarcomatous (left side) and leiomyomatous (right side) components (hematoxylin and eosin staining; high-power field).

References

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