

Role of ultrasound in predicting surgical complexity in abdominal wall endometriosis

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Figure 1. Nodule infiltrating the subcutaneous tissue and fascia, with no apparent involvement of the underlying muscle

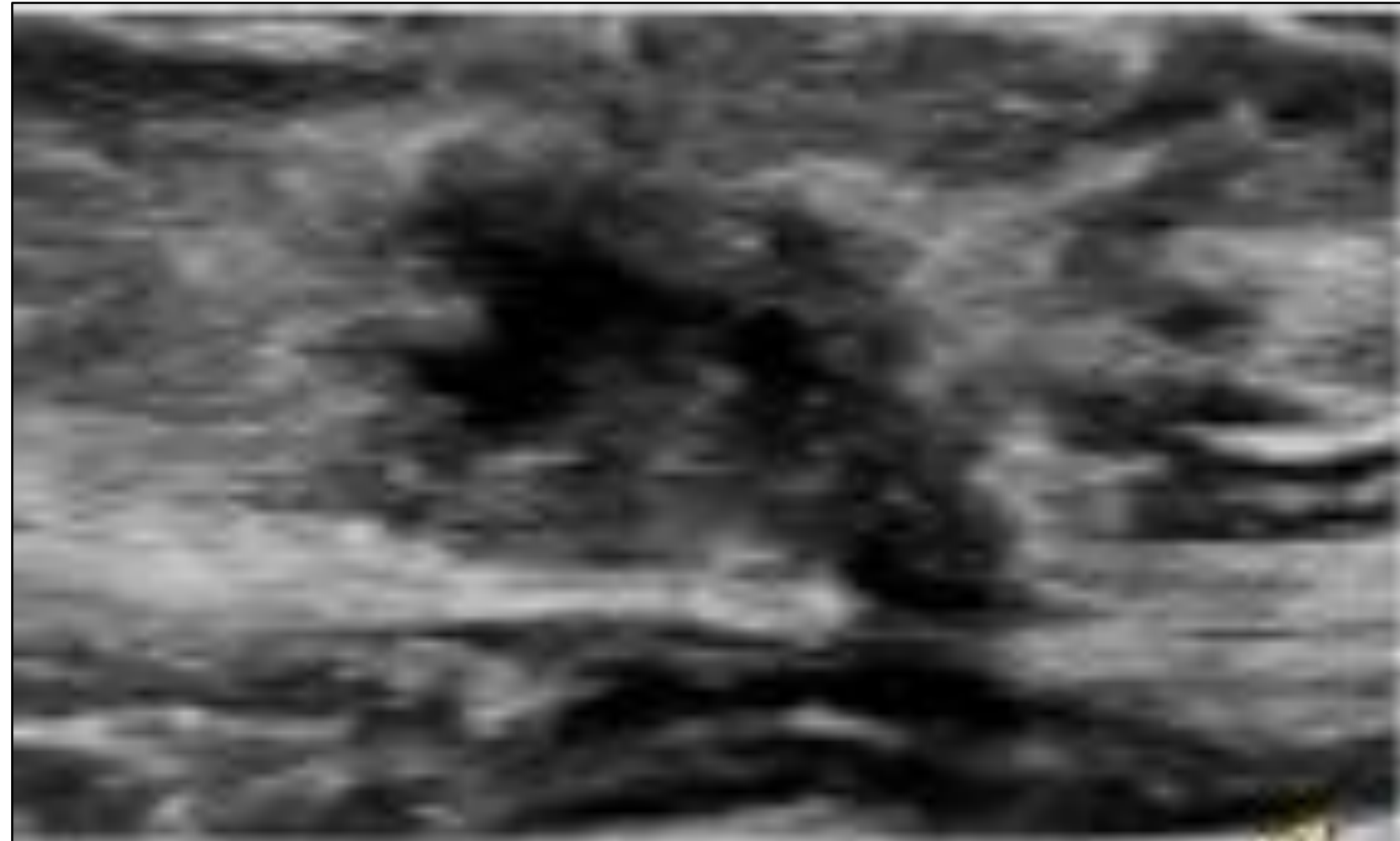


Figure 3. Nodule infiltrating fascia and superficially involving rectus abdominis muscle

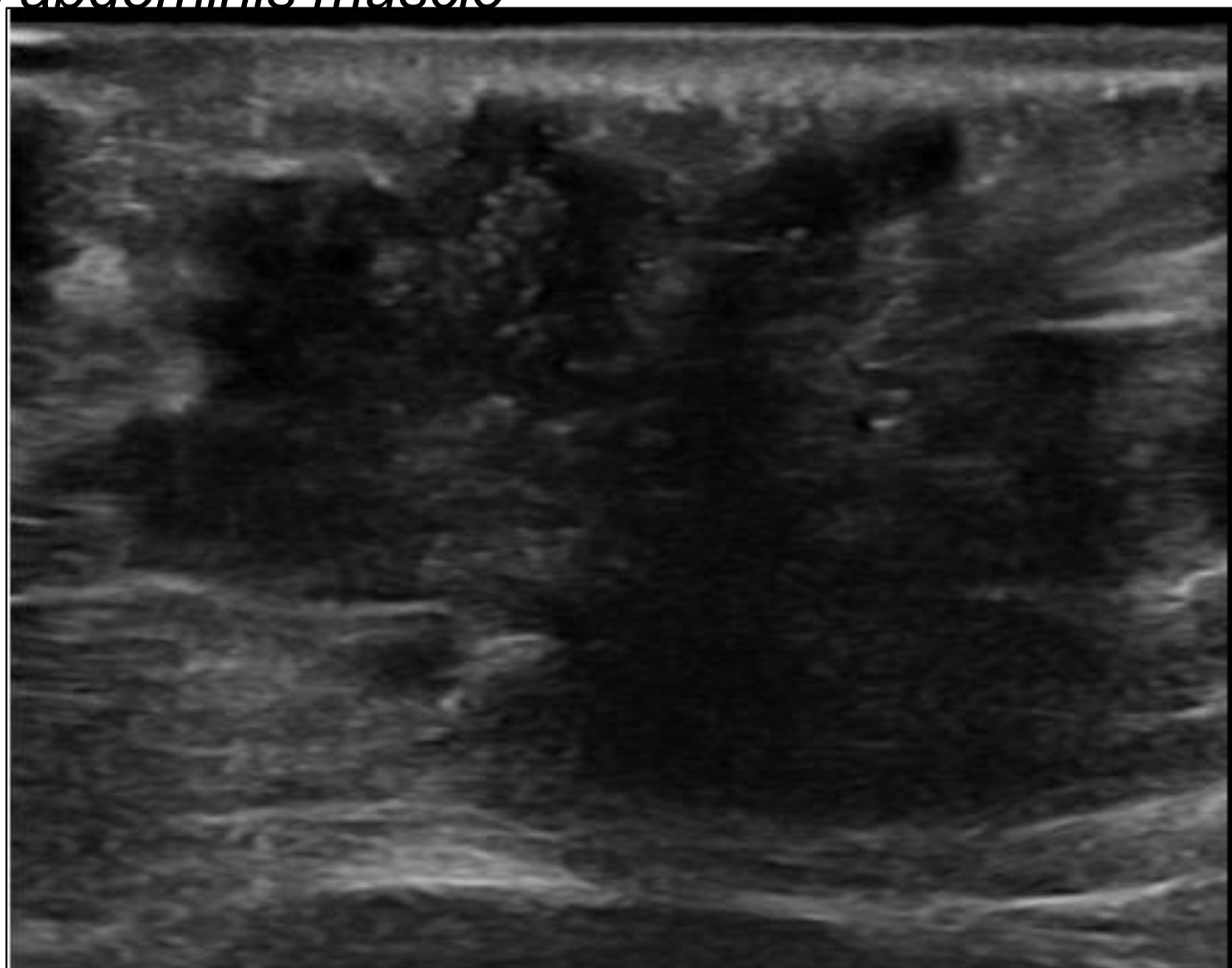
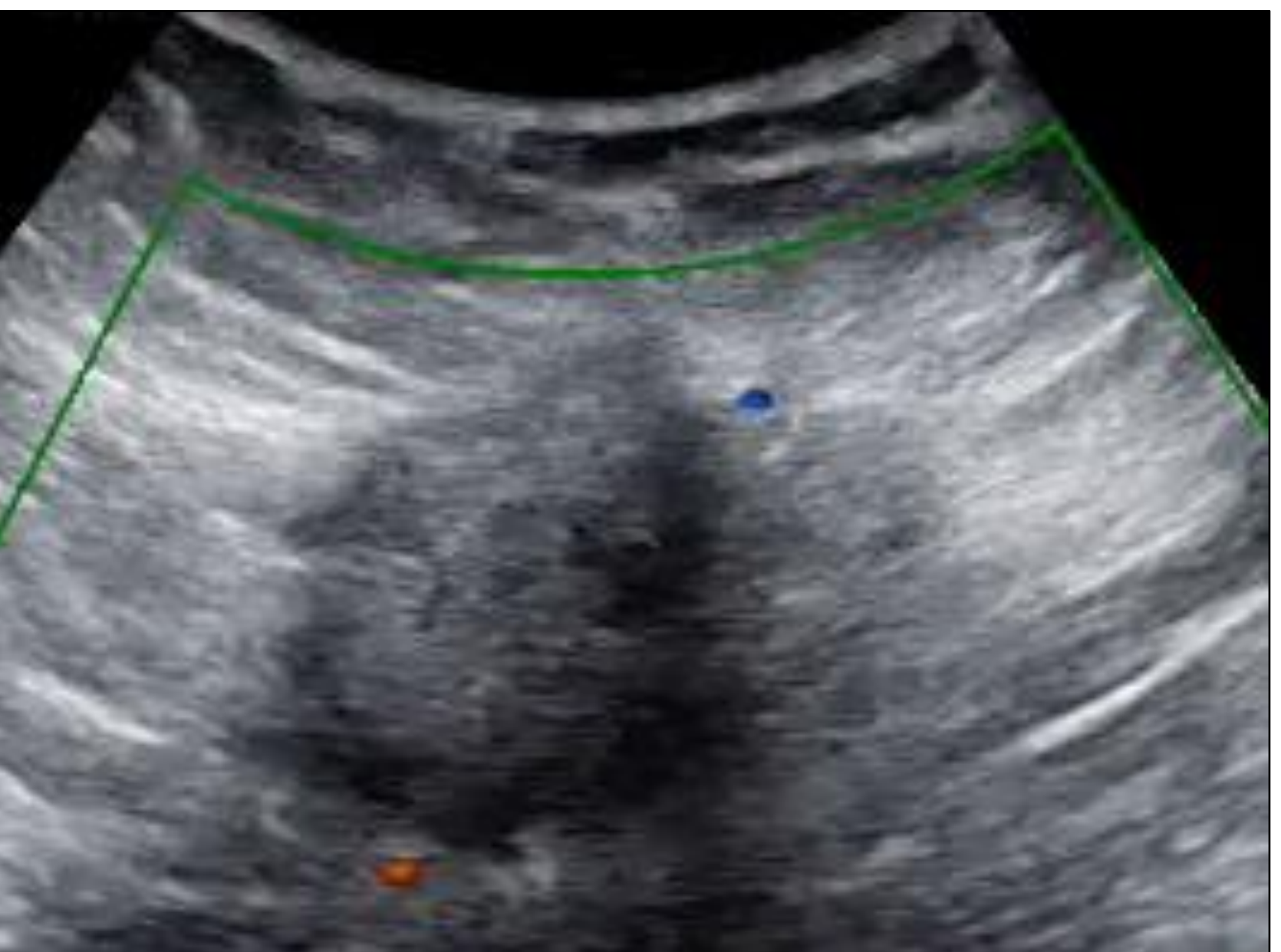


Figure 3. Big nodule infiltrating rectus abdominis muscle



Objectives

Abdominal wall endometriosis is an uncommon form of extrapelvic endometriosis. Ultrasound is the first-line imaging modality for diagnosis, but its role in predicting surgical complexity remains poorly investigated. This study aimed to evaluate whether preoperative ultrasound features are associated with surgical complexity in patients undergoing excision of abdominal wall endometriosis.

Methods

We conducted a retrospective monocentric observational study including patients who underwent surgical excision of histologically confirmed abdominal wall endometriosis between May 2020 and November 2025. All patients underwent preoperative ultrasound evaluation of the abdominal wall performed by experienced operators using linear or convex probes (3–5 MHz). Maximum lesion diameter and layer-by-layer infiltration of the abdominal wall were assessed. Surgical data included operative approach, intraoperative extent of infiltration, involvement of a general surgeon and prosthetic mesh use. Postoperative complications were recorded.

Results

Fifty-four patients were included. Mean age was 38.4 ± 5.8 years and mean BMI was 25.2 ± 5.7 kg/m². Most patients were premenopausal (98.1%) and had a history of cesarean section (92.6%). Mean lesion size on ultrasound was 29.4 ± 12.1 mm. Rectus abdominis muscle involvement was suspected on ultrasound in 55.6% of cases and confirmed intraoperatively in the same proportion. General surgeon involvement occurred in 38.9% of procedures and prosthetic mesh was used in 31.5%. Ultrasound showed approximately 80% sensitivity and 75% specificity for detecting rectus muscle infiltration. Larger lesions were significantly associated with mesh use and multidisciplinary involvement ($p < 0.001$). Postoperative complications occurred in fewer than 10% of patients.

Conclusions

Preoperative ultrasound is a useful tool for predicting surgical complexity in abdominal wall endometriosis. Lesion size and rectus abdominis muscle involvement appear to be key predictors of the need for prosthetic reconstruction and multidisciplinary surgical management.