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# Use of 3D and multiplanar ultrasound in the differential diagnosis of cervical versus cesarean scar ectopic pregnancy: a case report



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## Introduction

First-trimester obstetric hemorrhage is one of the most common reasons for emergency consultation in clinical practice. The main differential diagnoses include miscarriage, gestational trophoblastic disease, and ectopic pregnancy, the latter being one of the leading causes of early maternal morbidity and mortality due to severe hemorrhage, with an incidence of 5-10%. While tubal ectopic pregnancy accounts for over 80% of cases, less frequent locations, such as cervical or cesarean scar ectopic pregnancy, pose significant diagnostic and therapeutic challenges.

## Case description

We present the case of a 31-year-old patient in her second pregnancy, with a history of cesarean section 12 years prior, who presented with vaginal bleeding and pelvic pain of varying intensity. Ultrasound revealed a cervical ectopic pregnancy implanted beneath the cesarean scar, with a viable embryo. A multiplanar 3D evaluation using orthogonal planes allowed for precise characterization of the implantation site and its relationship to the myometrium.

Given these findings, a conservative approach was chosen using intrasac methotrexate, prioritizing maternal safety and fertility preservation. Serial ultrasound monitoring was essential in assessing treatment response and clinical evolution.

## Ultrasound evaluation

Revealed a lack of continuity of the gestational sac with respect to the endometrial cavity and the cervical canal. The gestational sac was located outside the endometrial canal, displaced toward the anterior portion of the uterus. The uterine coronal plane revealed inferior and anterior implantation, along the scar line, with distortion of the myometrial architecture.

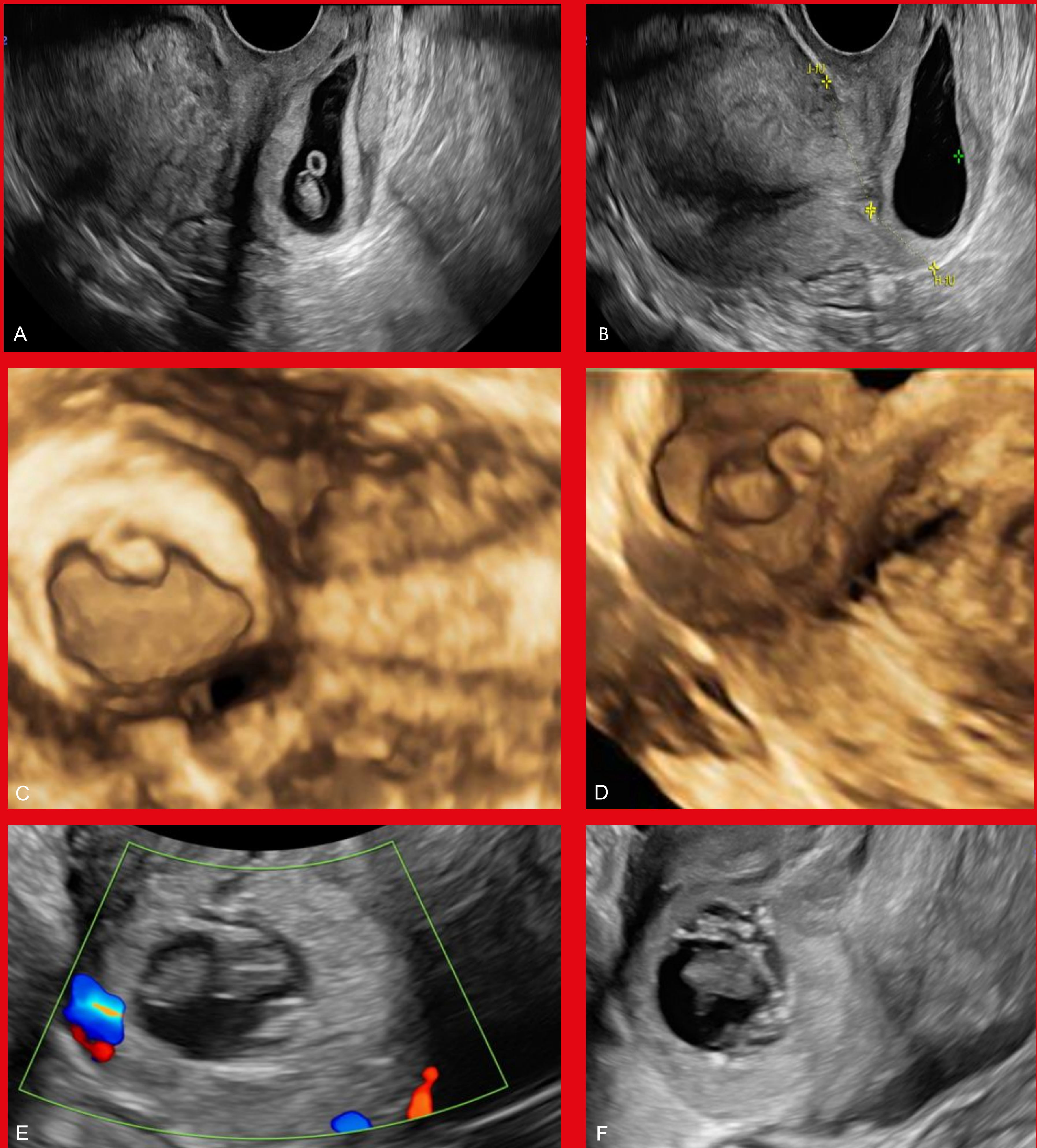


**Figure 1.** A-B) ectopic implanted beneath the cesarean scar. C-D) multiplanar 3D revealed precise implantation site and relationship to the myometrium E-F) post-treatment ultrasound control

## Conclusion

This case underscores the importance of early diagnosis and the key role of 3D ultrasound in clinical decision-making. Accurate detection of these atypical implantations facilitates the selection of appropriate therapeutic strategies, reducing maternal complications and avoiding unnecessary surgical interventions.

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