

Endometrial Osseous Metaplasia – An Uncommon but Treatable Cause of Infertility

¹Dr. Rohit V Kandalkar, Consulting Radiologist, Infinity Imaging and Diagnostic Center, Indapur Pune Maharashtra

Corresponding Author: Dr. Rohit V Kandalkar, Consulting Radiologist, Infinity Imaging and Diagnostic Center, Indapur Pune, Maharashtra.

Citation this Article: Dr. Rohit V Kandalkar, “Endometrial Osseous Metaplasia – An Uncommon but Treatable Cause of Infertility”, IJMSIR – May – 2026, Vol – 11, Issue – 3, P. No. 66 – 69.

Type of Publication: Original Research Article

Conflicts of Interest: Nil

Introduction

Endometrial osseous metaplasia is a rare benign condition characterized by bone formation within the endometrium. It is an uncommon but important reversible cause of secondary infertility. Commonly associated with prior abortion, chronic inflammation, or retained products of conception.

Patients may present with infertility, abnormal bleeding, pelvic pain, or dysmenorrhea. Early diagnosis by ultrasonography and hysteroscopy allows successful treatment.

Learning Objectives

- Clinical & Imaging concepts of Endometrial osseous metaplasia.
- USG Pelvis protocol.
- Case study with Radiology and Histopathology correlation.

Clinical History

- A 30 year old female with secondary infertility came for ovulation study on 11th day of her menstrual cycle.
- Her menstrual cycle was regular with 3 Days bleeding per cycle.
- Her past history was
 - Gravida 1 – FTV D

- Gravida 2 – Spontaneous abortion at 12 – 13 weeks. No Dilatation and curettage was done.

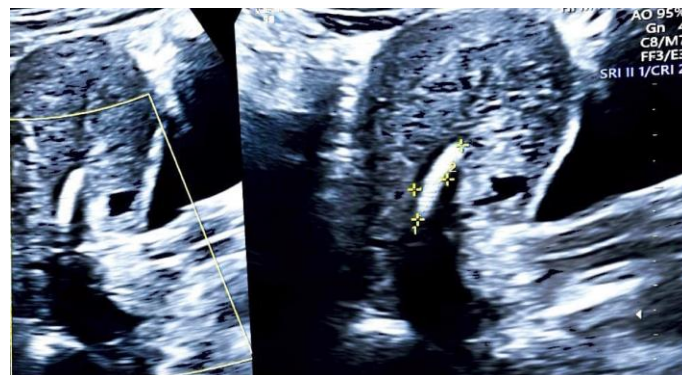
Imaging Modalities

- Pelvis ultrasonography was performed using curvilinear probe c 1-5 and RI C 5-9ars transvaginal probe.

Imaging Findings Whereas Below

- A Trans abdominal and Transvaginal USG was done and findings where as described below:
 - A linear hyperechoic stripe seen over lower uterine segment measuring 13 x 8 mm showing posterior acoustic shadowing.
 - Minimal collection in E.T.

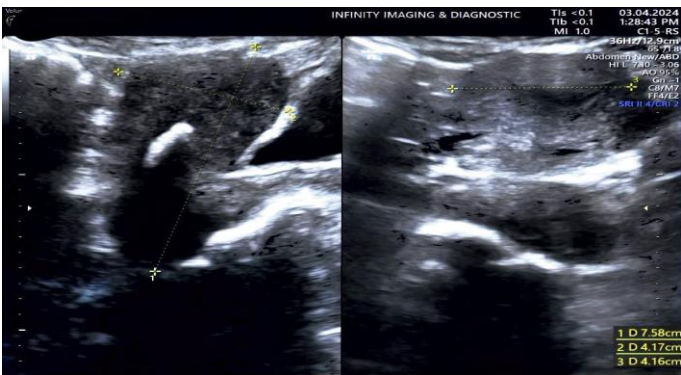
Transabdominal Images





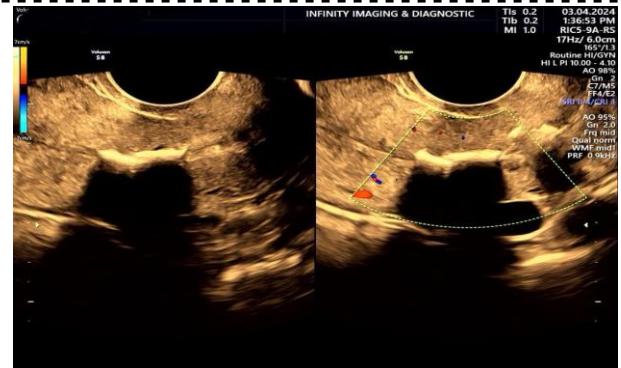
➤ A linear hyperechoic stripe seen over lower uterine segment measuring 13 x 8 mm.

Transabdominal Images



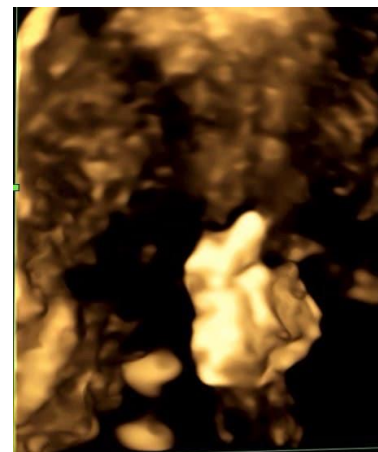
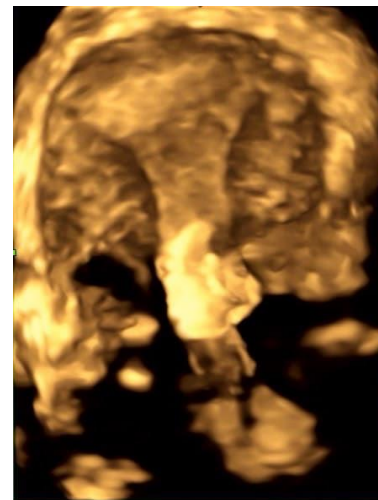
➤ A linear hyperechoic stripe seen over lower uterine segment.
 ➤ Minimal collection in E.T.

Transvaginal Images



➤ This hyperechoic stripe seen over lower uterine segment was showing posterior acoustic shadowing.

3D Image of Uterus



➤ The 2d imaging findings were confirmed on 3D Transvaginal Ultrasound.

Intraoperative Images



- Intraoperative images showed dense area of calcification within endometrium.

Postoperative Image



Histopathology Report



- Calcific material was removed during hysteroscopy from uterine cavity and was sent for Histopathology Analysis.
- Histopathology report was “Dystrophic calcification and ossification”

Discussion

Infertility is a common presentation in Endometrial Osseous Metaplasia as is seen in all patients. Reactive endometritis caused by metaplastic bone may interfere with blastocyst implantation. Another plausible explanation for associated infertility is osteoblastic bone acting as a foreign body, a mechanism similar to intra-uterine contraceptive device preventing conception. Complete removal of this metaplastic tissue restores fertility. Uterine curettage or hysteroscopically guided removal of endometrial ossification is the treatment of choice. Recently, ultrasound-guided hysteroscopic removal of bone has been recommended due to its good visibility which helps in complete removal of the metaplastic tissue embedded even in adjacent myometrium.

Conclusion

Endometrial osseous metaplasia is a rare and treatable cause of secondary infertility with ultrasound being the best non-invasive diagnostic imaging modality. Genital tuberculosis must be included in the diagnostic workup

especially in endemic zones. The actual pathogenesis is debatable and area of active research. Ultrasound-guided hysteroscopic removal/dilatation and curettage is the treatment of choice and usually curative for infertility.

Teaching Points

- Infertility is a common presentation in Endometrial Osseous Metaplasia as is seen in all patients.
- Complete removal of this metaplastic tissue restores fertility. Uterine curettage or hysteroscopically guided removal of endometrial ossification is the treatment of choice.
- Recently, ultrasound-guided hysteroscopic removal of bone has been recommended due to its good visibility which helps in complete removal of the metaplastic tissue embedded even in adjacent myometrium.

References

1. <https://mefj.springeropen.com/articles/10.1186/s43043-020-00045-0>
2. <https://pmc.ncbi.nlm.nih.gov/articles/PMC4770404/>
3. <https://pubmed.ncbi.nlm.nih.gov/29517145>