Endometrial Ossification: An Unusual Cause of Heavy Menstrual Bleeding (HMB)

Pabashi Poddar¹ · Komal Chavan¹ · Rajendra M. Saraogi¹ · Pramila Yadav¹

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About the Author

Dr. Pabashi Poddar MS, DNB OBGY She did MS OBGY from Grant Medical College, Mumbai in 2014. She was working as Speciality Medical Officer, DR RN Cooper Hospital, Juhu, Mumbai from 2014–2015. Currently she is doing her fellowship in gynec-oncology from GCRI, Gujarat.

Introduction

Endometrial ossification is a rare occurrence and has also been described as osseous metaplasia of the endometrium, ectopic intrauterine bone, and heterotopic intrauterine bone formation [1]. Most patients present between 20 and 40 years, and the common underlying factors are a history of menstrual irregularities, recurrent abortions, and endometritis. Endometrial ossification may present as

secondary infertility, prolonged unexplained vaginal bleeding, or intrauterine pain.

Case Study

A 32-year-old para 2 living 2 (P2L2) came to our out-patient department (OPD) with complaints of polymenorrhagia since last child birth (13 years back). There were no complaints of dysmenorrhea, no relieving or aggravating factors, history of pill use, history of Koch's, or use of intra-uterine contraceptive device (IUCD). On examination, vital signs were stable with no signs of pallor or any significant abnormality. On per speculum, cervix and vagina were healthy. On per-vaginum examination, uterus was bulky and fornices appeared free.

A routine pelvic ultrasonogram was done wherein uterus was $8.2 \times 4.0 \times 4.3$ cm with multiple linear to curvilinear dense after shadows measuring 1.5 to 2 cm in

Pabashi Poddar: Speciality Medical Officer; Dr. Komal Chavan, Asst Honorary, HBTMC and DR RN Cooper Hospital, Mumbai; Dr. Rajendra M. Saraogi, Honorary, HBTMC and DR RN Cooper Hospital, Mumbai; Dr. Pramila Yadav, Asst Professor, HBTMC and DR RN Cooper Hospital, Mumbai.

✉ Pabashi Poddar
pabashi@gmail.com

¹ Department of OBGY, Dr R N Cooper Hospital, Mumbai, India

Fig. 1 Bony chips removed during curettage

submucosal region of the lower uterine segment which could represent calcified fibroids. Few subcentimeter calcific foci were noted in fundal region. Endometrial thickness (ET) was 5 mm. Rest of the study was within normal limits.

On repeat examination, during per speculum examination, after holding the anterior lip of cervix with vulsellum, a uterine sound was introduced. A hard calcified density could be felt in the posterior part of lower uterine segment. On per-vaginum examination, the calcified part could be felt through the os in the cervix area on the posterior lip toward the right side.

A repeat scan was done by senior sonologist which also showed irregular calcifications in posterior subendometrial region in lower uterine segment for a length of 4 cm with similar calcifications in fundal region. A magnetic resonance imaging (MRI) pelvis was advised which to our surprise appeared normal.

Myomectomy was planned but keeping in mind a normal MRI scan, decision to do a diagnostic hysteroscopy first to reach the final conclusion was taken.

During hysteroscopy, after dilating the cervix, hard calcified linear densities/bands were seen in the posterior part of cervix and in the left lateral wall of uterus near and obscuring the cornu. Rest of the endometrium appeared normal.

During endometrial curetting, multiple hard bony chips with small 2-cm linear bone remnants were also extracted. The material was sent for histopathology (Fig. 1).

On repeated retrospective questioning also, the patient denied any history of dilatation and curettage (D&C) or history of amenorrhea followed by bleeding per vaginum (PV) or history of missed periods or using any emergency contraceptive. There was no history of lactational amenorrhea or history of any abortion or twin pregnancy or intra-uterine fetal death (IUFD).

Fig. 2 Histo-pathological report (HPR) slide showing endometrial ossification

HPR Report

Endometrial glands in proliferative phase with stroma showing multiple foci of ossification (Fig. 2).

Discussion

Findings of bones/bone remnants inside the uterine cavity is a rare phenomenon with very few cases reported in the literature, with most of the cases reported due to infertility with a relevant history of medical termination of pregnancy (MTP) or D&C done for missed abortion.

Endometrial ossification is an uncommon finding with several suggestions been made regarding the pathogenesis of this lesion [2] like osseous metaplasia from multipotential stromal cells, usually fibroblasts, which become osteoblasts; continuous and strong endometrial estrogenic stimulation; retention of fetal bones that secondarily promote osteogenesis in the surrounding endometrium;

implantation of embryonic parts without preexisting bone after abortions at an early stage; dystrophic calcification of retained and necrotic tissues, usually after an abortion; chronic endometrial inflammation such as endometritis or pyometra; and metabolic disorders such as hypercalcemia, hypervitaminosis D or hyperphosphatemia [3]. The actual contribution of these pathogenic mechanisms is unknown.

Retained fetal bones in the uterine cavity may be subsequent to mid-trimester pregnancy termination, spontaneous intrauterine death, and missed abortion. The reported incidence of retained fetal bone is 0.15 % among diagnostic hysteroscopies. They may prevent pregnancy by an intrauterine contraceptive device (IUCD)—like effect. There are only a few case reports of intrauterine-retained fetal bones resulting in secondary infertility in the literature.

Prolonged retention of fetal bones may present as pelvic inflammatory disease, chronic pelvic pain, infertility, menorrhagia, irregular bleeding, offensive vaginal discharge, or passage of bony fragments per vaginum.

The differential diagnosis of such unusual findings on ultrasound examination includes intrauterine contraceptive devices, foreign bodies, calcified submucous fibroids, endometrial tuberculosis, Asherman's syndrome, and rarities such as heterotopic bone and uterine malignant mixed müllerian tumor [4]. Hysteroscopy remains the gold standard for diagnosis of endometrial pathology [2]. However, transvaginal ultrasound is an excellent alternative, with a high sensitivity and specificity for endometrial pathology, particularly when combined with saline infusion.

Optimum treatment for such lesions is hysteroscopic removal of osseous material. Most of the cases reported had resolution of symptoms and several conceived spontaneously [5]. On follow-up the patient was started on combination oral estrogen–progesterone cyclical for 3 months and has regular cycles since then with symptoms being relieved

Conclusion

This case report highlights endometrial ossification as a very rare and peculiar case. It is important to take a detailed past history and obstetric history and keep in mind this diagnosis while evaluating a pelvic sonogram [6, 7].

Compliance with Ethical Standards

Conflict of interest We the authors declare that they have no conflict of interest.

Ethical Statement We the authors of Dr R N Cooper Hospital Juhu, Mumbai, would like to submit a rare interesting case report of endometrial ossification: an unusual cause of heavy menstrual bleeding (HMB). We have obtained necessary permission from the hospital to publish it.

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