

# Endometrial Osseous Metaplasia—A Rare Presentation of Polymenorrhagia: A Case Report

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## ABSTRACT

Endometrial ossification is a rare entity in which bones are found in the uterus. Exact aetiopathogenesis is not known but the most accepted theory is metaplasia of stromal cells into osteoblast cells result in the formation of bones. The possibility of malignant mixed mullerian tumour should be in the mind of clinician and pathologist while making diagnosis. We hereby report an extremely rare case, which is among very few reported cases in the world, in which endometrial ossification presented in a perimenopausal female with polymenorrhagia.

A 41-year-old multiparous patient presented with irregular bleeding per vaginum for the past two years. She was found to be a case of endometrial calcification with osseous metaplasia with presence of bones varying from 7mm – 1.5 cms size in the uterine cavity. She was successfully managed by total abdominal hysterectomy.

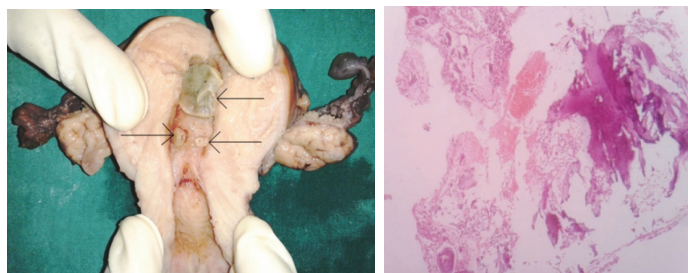
**Keywords:** Aetiopathogenesis, Endometrial calcification, Uterine cavity ossification

## CASE REPORT

A 41-year-old female presented to the gynecology outpatient department with a history of continuous, excessive bleeding, lower abdominal pain and vaginal discharge for the past two years. She was multiparous and had delivered two children, both vaginally. The last delivery was 14 years back. The patient gave history of dilatation and curettage at 6 weeks of gestation for incomplete abortion, approximately three and a half years back. Despite conventional hormone therapy, the patient was not relieved. She had no other relevant history suggestive of any systemic disorder. On general examination, she appeared normal except mild pallor was observed. Bimanual examination revealed bulky uterus with mild bilateral tenderness. Ultrasound of pelvis revealed presence of hyper echoic foci measuring 9mm and 15×10mm in the uterine cavity [Table/Fig-1]. So, dilatation and curettage was done. During curettage gritty sensation was felt and only scanty tissue was removed and it was subjected to histopathological examination. The report revealed chronic endometritis. The decision for hysterectomy was taken since there was no response to the previous treatment and she had no desire of having more children.



**[Table/Fig-1]:** USG showing hyperechoic foci inside the uterine cavity



**[Table/Fig-2]:** Uterus & cervix showing dilated uterine cavity revealing three bony pieces (arrow mark) **[Table/Fig-3]:** Photomicrograph showing poorly formed woven bone formation, with areas of calcification ( Hematoxylin and Eosin stain x 100)

On cut section, uterus showed 3 bony fragments of approx. 1.5 × 1 cm, 7mm × 5mm and 6mm × 4mm respectively [Table/Fig-2]. Histopathology of the uterus showed endometrial glands in late secretory phase with poorly formed woven bone formation, with areas of calcification. No inflammation and reactive changes was there [Table/Fig-3].

Patient had no signs or laboratory findings suggestive of calcium disorder. Her serum calcium and phosphates level were in the normal range. So, diagnosis of endometrial ossification was made. One and a half year after treatment patient has recovered completely and is healthy.

## DISCUSSION

Endometrial calcification, osseous metaplasia and presence of ectopic uterine bone is an uncommon phenomenon. Nearly 80 cases have been reported in the world literature including nine cases from India [1,2]. Most of the cases presented with infertility with prior history of abortion [1-4]. Three cases reported with menstrual irregularities alone [5,6]. Other sites of ossification are vagina [7], cervix [8] and ovary [9]. Previous case reports [1, 10, 11] have shown that antecedent abortion were present in most patients (76.5%). Regarding clinical presentation infertility was the most common feature (72.9) followed by menstrual abnormalities [10]. The indexed patient presented with polymenorrhagia and vaginal discharge.

The pathogenesis of endometrial ossification has been discussed by many hypothesis such as hypercalcemia, hypervitaminosis D, hyperphosphotemia, chronic endometritis, pyometra, persistent

stimulation of endometrium by estrogen or osteogenesis in the surrounding endometrium which is promoted by retained fetal bones or dystrophic calcification of retained and necrotic tissues. The most accepted hypothesis as suggested by Acharya et al., is metaplasia of the endometrial stromal cells, usually fibroblast which change to osteoblast and thus results in the bone formation [2].

In most of the previously reported cases osseous change were followed by previous history of D&C following incomplete abortion and patients presented with secondary infertility [1,3,11,12]. After thorough search of literature we could find very few cases in which patient presented with menstrual complaints. Fawad S reported a case in which patient presented with menometrorrhagia [6] and other cases as reported by Muzaffar M et al., [13] and Patil SB et al., [5] in which patient presented with polymenorrhagia. The indexed case is also a rare occurrence as the patient presented with menorrhagia.

In majority of the reported cases, patients were in the reproductive age group with history of first trimester abortion and spontaneous normal menstrual cycle in post abortal phase in contrast to our case who was of perimenopausal age. Time interval between previous abortion and detection of ossification varies between 8 wk to 14 y [11]. In this case it was 3 years 5 months. Shimizu and Nakayama described endometrial ossification in 62-year-old post menopausal women who had history of abortion 37 y back [14]. Bhatia and Hoshiko discovered endometrial and cervical osseous metaplasia in a 24-year-old female [1].

Osseous metaplasia is described as an endogenous non neoplastic pathological condition as no tissue reaction is found in the biopsied endometrial tissue and the endometrium showed normal regular cyclical changes [1], as noticed in our case also. Adomson & Somners reported a case of endometrial ossification in a patient who was taking high dose of calcium and vitamin D for long time [15]. No such history was found in our patient and her serum calcium and phosphate levels were normal that rules out any such type of metabolic cause for ossification. Common differential diagnosis for bone in the uterus are endometrial tuberculosis, retained fetal products, intrauterine foreign body and malignant mixed mullerian tumour [11,14].

As discussed previously this condition is most commonly seen in reproductive age group and most often patients present with infertility, hysteroscopic removal of bony chips have resulted in successful restoration of fertility [2,10,11]. In contrast to it our patient was of

perimenopausal age group, was suffering for long time and her family was completed she opted for hysterectomy. And further more role of estrogen has been found to have osteogenesis promoting effect; treatment with hormones is not practical [11].

## CONCLUSION

This case report highlights that endometrial calcification with osseous metaplasia is a very uncommon case in perimenopausal patient presenting with menorrhagia. So, in patients of post abortion menorrhagia, the possibility of endometrial ossification should always be kept in mind. It should also be kept in differential diagnosis of malignant mixed mullerian tumour. So clinician and pathologist should be aware of this rare entity.

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