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Gynecology

# **Osseous Metaplasia of Endometrium**

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# Abstract Case Report

Endometrial osseous metaplasia is a very rare clinical condition when the presence of bone within the endometrium. Common clinical presentation of the patient is secondary subfertility following an abortion. There are various theories proposed and most accepted theory is metaplasia of the stomal cells into osteoblastic cells that produce the bone. It is necessary to distinguish this condition from mixed Mullerian tumor of the endometrium to avoid hysterectomy. Removal of these bony spicules lead to spontaneous conception. We present one such case in a 19 year old female patient presented with secondary sub fertility with history of termination of pregnancy (Menstrual regulation) **Keywords:** Osseous Metaplasia, endometrium, Secondary Subfertility.

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## **INTRODUCTION**

Osseous metaplasia of the endometrium is a very uncommon clinical entity with presence of mature or immature bone in the endometrium. Closely 80 cases have been reported in the world literature including around nine cases from India. Most of the reported case, ossification was followed by an abortion and patients presented with sub fertility [1-5]

Various theories have been proposed but accepted theory is metaplasia of the stromal cells into osteoblastic cells that produce mature bone. [1, 2, 7]. Evacuation of the bony spicules is the preferred management [6, 8] and most of patients conceived after the evacuation [4, 5, 8].

# **CASE REPORT**

A 19 years old female patient presented in outpatient department of Akij Ad-din media college and Hospital, Khulna with the history of subfertility. She was married for 2.5 years. Past history revealed that she conceived in early marriage and underwent medical termination of pregnancy by dilatation and curettage at 8 weeks of Gestation. After dilatation and curettage she did not have any significant complaints, her menstrual history was normal.

The couple was advised for infertility work up, the semen analysis of the husband was normal. The trans vaginal ultra sonography of the female partner revealed multiple elongated echogenic structures seen in uterine cavity larger one I cm, .72cm.



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Figure: Transvaginal sonography:

Multiple elongated acrogenicstructure seen in uterine cavity producing shadow.

The patient was underwent dilatation and curettage. Multiple small, bony specula was removed and submitted for histopathological study.

The hematoxylin and eosin stained paraffin sections showed trabeculae of woven bone with non haemopoietic bone marrow.

Endometrial tissue was scanty and predominantly composed of tubular glands with scanty stroma. No evidence of inflammatory reaction, necrosis and products of conception was seen. Serum calcium level and phosphorus level was within normal limit.

### **DISCUSSION**

In most of the osseous changes of endometrium was followed by previous history of abortion. So patients are on reproductive age group with history of first trimester abortion either spontaneous or therapeutic.

Patients have normal menstrual cycle in post abortive period as noted in our case. The time interval between antecedent pregnancy and discovery of endometrial ossification varies from 8 weeks to 14 years [8] Common clinical presentation are menstrual irregularities, dyspareunia, pelvic pain, vaginal

discharge, and secondary subfertility [10]. In our case secondary infertility was the only complaint.

Pathogenesis of osseous metaplasia of endometrium may be dystrophic calcification, heterotopia and ossification of post abortive endometrium, metaplastic changes in healing tissue, metastatic calcification, prolonged osteogenic therapy often abortion and retained fetal bone are the common theories [1-5, 7].

It is described as an endogenous nonneoplastic pathological condition become no tissue reaction occur endometrium tissue and have regular cyclical changes occur in endometrium [1, 3].

It is unlikely that endometrial bone is origin from fetal tissue. Because there is no fetal tissue found on biopsy material studied. On biopsy review that minimal or no tissue reaction which explain ossification was dystrophic in nature.

Cayuela et al., [13] studied DNA pattern in 27 years old women diagnosed to have endometrial osseous metaplasia following first trimester abortion. They found same DNA pattern in the blood of the patient and endometrial biopsy including the bone removed from endometrium. No genetic material of male or fetus was found.

Most of the case reported did not have any evidence of hyperkalemia or the condition to hypercalcemia to support the theory of metastatic calcification. Adamson and Sommers [12] reported case of endometrial ossification in patient who was taking high dose of calcium and vitamin D for long term.

In India, endometrial tuberculosis was ruled out as it cause infertility, calcification and subsequent ossification occurs [2].

Baheccei and Demirel [6] suggested that chronic endometritis after abortion stimulates the release of superoxide radicals, tumor necrosis factor from the inflammatory cells. Long term exposure of superoxide radicals and tumor necrosis factor leads to metaplasia of stromal cells to osteoblastic cells in patients who have deficient superoxide dismutase activity. Chronic endometritis also stimulate the proliferation of mesenchymal cells and under go differentiate metaplasia into chondroblasts or osteoblasts [2].

It is also important for the pathologist to recognize this non-neoplastic nature of endometrium and differentiate it from malignant Mullerian tumor of the uterus [1, 8, 10].

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Initially preferred a series of dilatation and curettage to remove the bone from endometrium. Vigorous Single curettage should be avoided which may lead to synechiae formation [1].

Recently recommended that hysteroscopic removal of bone under the ultra-sonic guidance which case proper visualization and complete removal of bony spicules within endometrium [6, 8, 13].

Bone in the endometrium act as an intrauterine Contraceptive device. Complete removal con restore the fertility and spontaneous conception [4, 5, 8]

Use of oestrogens is controversial as it can stimulates osteogenesis and can causes endometrial ossification [1] woman who have normal regular menstrual cycle, endogenous hormones are sufficient for endometrial regeneration [8].

### **CONCLUSION**

Ossification of endometrium is a rare but treatable causes of infertility in which intrauterine bone prevents normal conception. Chronic endometritis after abortion causes metaplastic changes in the pluripotent endometrial stromal cells into osteoblastic cells.

Surgical pathologists should be aware to avoid making erroneous diagnosis of malignant mixed Mullerian tumor of endometrium. Complete removal of bony spicules from the endometrialcavity by hysteroscopy under ultrasonicguidance regains the fertility.

### REFERENCE

- 1. Bhatia NN, Hoshiko MG. Uterine osseous metaplasia. Obstetrics and gynecology. 1982 Aug;60(2):256-9.
- 2. Shroff CP, Kudterkar NG, Badhwar VR. Endometrial ossification--report of three cases with literature review. Indian journal of pathology & microbiology. 1985 Jan;28(1):71.
- Hsu C. Endometrial ossification. BJOG: An International Journal of Obstetrics & Gynaecology. 1975 Oct;82(10):836-9.

- Dutt S. Endometrial Ossification Associated With Secondary Infertility: Case Report. BJOG: An International Journal of Obstetrics & Gynaecology. 1978 Oct;85(10):787-9.
- Acharya U, Pinion SB, Parkin DE, Hamilton MP. Osseous metaplasia of the endometrium treated by hysteroscopic resection. BJOG: An International Journal of Obstetrics & Gynaecology. 1993 Apr;100(4):391-2.
- Coccia ME, Becattini C, Bracco GL, Scarselli G. Ultrasound-guided hysteroscopic management of endometrial osseous metaplasia. Ultrasound in Obstetrics and Gynecology: The Official Journal of the International Society of Ultrasound in Obstetrics and Gynecology. 1996 Aug 1;8(2):134-6.
- Waxman M, Moussouris HF. Endometrial ossification following an abortion. American Journal of Obstetrics & Gynecology. 1978 Mar 1;130(5):587-8.
- Bahçeci M, Demirel LC. Case report: Osseous metaplasia of the endometrium: a rare cause of infertility and its hysteroscopic management. Human reproduction. 1996 Nov 1;11(11):2537-9.
- Campo S, Campo V, Zannoni GF, Gambadauro P. Simultaneous ovarian and endometrial osseous metaplasia: a case report. The Journal of reproductive medicine. 2007 Mar;52(3):241-2.
- Shimizu M, Nakayama M. Endometrial ossification in a postmenopausal woman. Journal of clinical pathology. 1997 Feb 1;50(2):171-172.
- Bedaiwy MA, Goldberg JM, Biscotti CV. Recurrent osseous metaplasia of the cervix after loop electrosurgical excision. Obstetrics & Gynecology. 2001 Nov 1;98(5):968-70.
- 12. Adamson NE, Sommers SC. Endometrial ossification: report of two cases. American Journal of Obstetrics & Gynecology. 1954 Jan 1;67(1):187-90.
- 13. Cayuela E, Perez-Medina T, Vilanova J, Alejo M, Cañadas P. True osseous metaplasia of the endometrium: the bone is not from a fetus. Fertility and sterility. 2009 Apr 1;91(4):1293-e1.
- 14. Landim FM, Tavares JM, de Melo Braga DN, da Silva JE, Bastos Filho JB, Feitosa RG. Vaginal osseous metaplasia. Archives of gynecology and obstetrics. 2009 Mar 1;279(3):381-4.