





Figure: Transvaginal sonography:

Multiple elongated acrogenic structure 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, pelvic pain, dyspareunia, 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 non-neoplastic 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].

Bahceci 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 metaplasia differentiate 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].

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 intra-uterine Contraceptive device. Complete removal can restore the fertility and spontaneous conception [4, 5, 8]

Use of oestrogens is controversial as it can stimulate osteogenesis and can cause 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 cause 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 endometrial cavity by hysteroscopy under ultrasonic guidance regains the fertility.

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