

Successful diagnostic and surgical hysteroscopy for endometrial ossification

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Summary

Purpose of investigation: Diagnostic-operative hysteroscopy was successful in two cases of endometrial ossification, and fertility was restored.

Methods: A 30-year-old and a 32-year-old woman presented at our Department with a history of secondary infertility, complaining of pelvic pain, dysmenorrhea and polymenorrhea which lasted for about one year before admission. Previous ultrasound studies revealed the presence of two bright hyperechogenic bands with posterior shadowing.

Results: In both cases diagnostic-operative hysteroscopies were performed, displaying osseous fragments which were removed with resectoscopy, mainly mechanically.

Conclusion: Hysteroscopic resection should be the elective treatment for endometrial ossification because it allows complete removal of osseous fragments and reduces the chance of residual synechia. The main objective of hysteroscopy in endometrial ossification is the restitution of conception capability.

Key words: Endometrial ossification; Secondary infertility; Hysteroscopy.

Introduction

Endometrial ossification, a rare condition, has also been defined as bone metaplasia of the endometrium, heterotopic ossification of the endometrium and osteogenesis of the genital tract. The pathogenetic mechanisms proposed to explain this condition are multiple and include: osseous metaplasia from multipotential cells, usually fibroblasts; continuous endometrial estrogenic stimulation; retention of fetal bones and secondary osteogenesis; implantation of embryonic parts without pre-existing bone after abortions at early stages; dystrophic calcification of retained necrotic tissues; chronic endometrial inflammation and metabolic disorders such as hypercalcemia, hypervitaminosis D or hyperphosphatemia [1, 2].

A history of pregnancy loss, secondary infertility, chronic endometritis or suspicion of foreign intracavitary bodies are usually present in the differential diagnosis of endometrial ossification. We report two cases successfully treated by hysteroscopy.

Case reports

Case 1

A 32-year-old woman was referred to our Department for secondary infertility, complaining of pelvic pain, dysmenorrhea and polymenorrhea that had lasted for about one year before admission. She had had a voluntary interruption of pregnancy 11 years before admission. A previous ultrasound study three months before had revealed the presence of two bright hyperechogenic bands then confirmed in our Department, showing intracavitary hyperechogenic echoes with posterior shadowing (Figure 1). Diagnostic-operative hysteroscopy was performed displaying two osseous fragments located in the isthmus uteri and in the posterior wall of the uterine cavity which were

removed with resectoscopy, mainly mechanically. An endometrial evaluation was performed showing proliferative endometrium with inflammatory infiltrate and immature bone trabeculae. Serum calcium, phosphorus and alkaline phosphatase were normal at the time of hysteroscopy. The symptoms were completely alleviated one week after the procedure. Three months after hysteroscopy the patient was controlled in our Department for a normal intrauterine pregnancy.

Case 2

A 30-year-old woman presented at our Department with a history of secondary infertility. She had had two voluntary interruptions of pregnancy, one and two years before admission, respectively. No abnormality was detected on physical or pelvic examination. Ultrasound showed massive intracavitary echoes with posterior shadowing suggesting calcification. Hysteroscopy showed left intracavitary synechia that lay from nearly the left ostium and reached the cervical internal os. Once the synechia was successfully resected with electrosurgical energy, net fragments of bone tissue were found in the endometrial cavity, predominantly extending to the left lateral, anterior and posterior uterine wall, and then removed. An endometrial evaluation was performed and histological examination revealed immature bone trabeculae with exudative inflammatory infiltrate and myometrial tissue. Serum calcium, phosphorus and alkaline phosphatase were normal. Postoperative ultrasonography showed no abnormalities. Five months after surgery the patient presented at our Department and the ultrasound study showed a pregnancy compatible with 8 wks' gestation (CRL: 14.7 mm).

Discussion

The first cases of endometrial ossification described in the literature were mostly resolved by hysterectomy or dilation and curettage. Only recently, has hysteroscopic resection of bone material been described as successful [1, 3]. Many times in the reported endometrial ossification cases it has not been possible to distinguish intraute-

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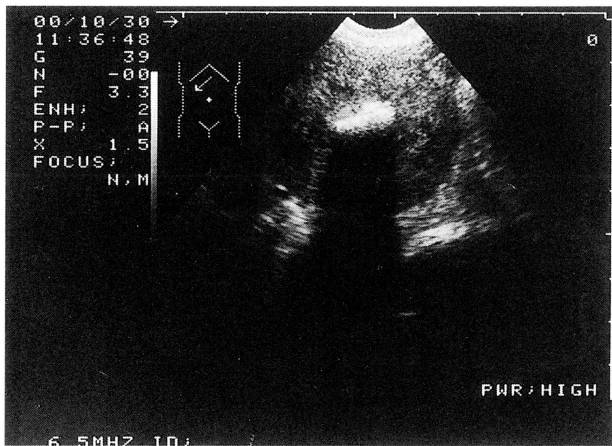


Figure 1. — Intracavitary hyperechogenic echoes with posterior shadowing.

rine retention of fetal bones from heterotopic bone formation.

In both cases described here incomplete abortion may have been a reasonable cause of the presence of bone formation. Furthermore, bone tissue present in utero – either way formed – would act as a foreign body avoiding the implantation of blastocysts and thus inducing secondary infertility.

Implantation of fetal parts in early pregnancy with an antecedent of induced abortion and subsequent curettage would imply implantation in the endometrium of embryogenic cells.

In the second case reported, other than a history of repeated voluntary interruption of pregnancy, the finding of important synechia and inflammatory infiltrates at histology would be associated with chronic endometritis. This entity is associated with the metaplasia of the endometrial

stromal cells into cartilagenous or bone tissue.

The role of pelvic ultrasonography is important in the diagnosis and follow-up of endometrial ossification. The characteristic hyperechogenic bands with posterior shadowing suggest calcification and may be helpful in cases where bone fragments are embedded in the endometrium or myometrium which are difficult to identify by diagnostic hysteroscopy. Briefly, a hysteroscopic procedure was performed by means of a resector (26 French, with urologic solution as distensor) targeting the extraction of cutting bone material.

In conclusion, hysteroscopic resection should be the elective treatment for endometrial ossification, allowing complete removal of osseous fragments and reducing the chance of residual synechia. The main objective of hysteroscopy in endometrial ossification is the restitution of conception capability.

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