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Case Report

# Osteoid Metaplasia of the Endometrium After Late Abortion: A Case Report and Review of the Literature

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## Abstract

Osteoid metaplasia of the endometrium is a rare pathology, defined by the presence of bone fragments in the endometrium, it most often occurs after late abortion. The pathophysiology is unknown. The symptomatology is variable and non-specific, but it is necessary to think about it in front of secondary infertility which constitutes the main reason for consultation. Pelvic ultrasound as well as diagnostic hysteroscopy can confirm the diagnosis and suggest surgical treatment by operative hysteroscopy. Through a clinical case we insist on the epidemiological, physiopathological, clinical and para-clinical characteristics of this rare entity, knowledge of which is essential for a sure diagnosis and consequently an adapted treatment often allowing to recover the fertility of the patient.

**Keywords:** Osteoid Metaplasia; Endometrium; Late Abortion; Infertility; Operative Hysteroscopy

## Clinical Observation

This is a 31-year-old patient, O rhesus positive, second primary gesture, with no particular medical history, having as surgical history, a cesarean section in 2018 for mechanical dystocia, the second pregnancy was the induced warming results in 16 weeks of amenorrhea with initiation of misoprostol, supplemented by curetage.

The patient presented 6 months after the abortion, pelvic pain of the type of expulsive colic associated with brown leucorrhoea and deep dyspareunia, moreover the patient had a regular cycle, and did not report abnormal uterine bleeding.

Clinically, the patient was in good general condition, apyretic, with normocolored conjunctivae, the gynecological examination found a normal vulvo-perineal examination, a healthy-looking cervix, a normal-sized uterus, with no latero-uterine mass, the breast examination and the rest of the devices were without anomalies.

Faced with this symptomatology, an endovaginal pelvic ultrasound was performed showing a normal-sized uterus, with regular contours, a homogeneous myometrium, with intracavitary presence of two hyperechoic images, with a posterior shadow cone (Figures 1,2), ovaries without abnormalities, and absence of pelvic effusion.

A diagnostic hysteroscopy was performed revealing 2 bone fragments with irregular contours partially covered by the endometrium.

**Figure 1:** Longitudinal section of the uterus showing a hyperechoic isthmic image with cone shadow.

**Figure 2:** Longitudinal section of the uterus showing a hyper echogenic body image with shadow cone.

**Figure 3:** Hysteroscopic image showing two bone fragments with an eggshell appearance.

## Discussion and Conclusion

Endometrial osteoid metaplasia (EOM) is a rare entity corresponding to the presence of bone tissue in the endometrium. Its frequency is estimated at 0.3/1000 [1]. As in our case, the EOM is classically diagnosed in the context of a history of abortion, especially if it is repeated, late, or if it has been the subject of an instrumental uterine revision [2].

The delay separating the abortion from the diagnosis of EOM is very variable, from a few days to several years [1]. The literature reports variable modes of revelation: metrorrhagia, leucorrhoea, dysmenorrhoea, but above all in the first place secondary infertility in a young woman of childbearing age, chronic pelvic pain is also reported in connection with an array of chronic aseptic endometritis, and more rarely the spontaneous expulsion of bone fragments [3]. However, asymptomatic cases have been reported [2], as well as observations have been described in postmenopausal women who had a history of curettage for miscarriage more than 20 years previously [4].

Several physiopathological hypotheses of the EOM have been proposed, the origin would be either fetal with inclusion of bone fragment or fetal mesenchymal cells with bone potential following a miscarriage or a generally late abortion [3], or maternal by the replacement of the chorion following a curettage or endometritis by scar connective tissue of maternal origin which would then see its mesenchymal cells transform into osteoblasts.

Indeed, some authors have reported some sporadic cases of EOM in nulligest women who consulted for primary infertility, which pleads in favor of this theory [5], moreover the maternal origin was confirmed by Enrique Cayuela by the study of DNA from a case of MOE [6].

The pelvic ultrasound shows hyperechoic linear streaks, with cones of shadows in the intracavity [7], however several differential diagnoses can lead to confusion with osteoid metaplasia, in particular, genital tuberculosis, squamous or muscular metaplasia, calcified fibroma, calcification of the arteries of the myometrium, malignant Mullerian tumours, teratomas or finally a foreign body such as a copper IUD [2].

Diagnostic hysteroscopy finds irregular, jagged, whitish-colored bone fragments with a coral-like or eggshell appearance, plates of ossification embedded in the deep part of the endometrium in contact with the myometrium, and sometimes even small clearly recognizable bones (femur, tibia, scapula...). However, hysteroscopy may be found to be normal when the bone fragments are embedded deep in the myometrium and covered with normal endometrium [2].

Hysteroscopy allows treatment by excision of bone fragments. The greater uterine fragility encourages extra caution in its realization because of a significant risk of perforation. This risk must be evaluated on ultrasound by measuring the myometrial thickness separating the bone fragments from the uterine serosa (safety border). This hysteroscopy is therefore difficult to perform and requires the use of small grippers. The ablation of fragments

deeply embedded in the endometrium is quite difficult. Some recommend performing this hysteroscopy under ultrasound control [1] thus making it possible to visualize the uterine and pelvic cavities simultaneously. This technique would reduce the risk of perforation and increase efficiency. The removal of all fragments is necessary in order to obtain uterine emptiness and thus treat chronic endometritis. It most often restores fertility [8].

The risk of recurrence exists but it is difficult to estimate, prompting clinical, ultrasound or even hysteroscopic follow-up of these patients [9].

In our cases, the clinical control 3 months after the diagnosis found a clinically asymptomatic patient, as well as a hysteroscopic control carried out 3 months later returning satisfactory.

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