

OSSEOUS METAPLASIA OF THE UTERUS

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ABSTRACT

Osseous metaplasia (OM) is a rare pathological entity that affects the uterus with an extension to the cervix and consist of development of micro-calcification within the uterus wall. OM usually appears following abortion, chronic endometritis, metabolic disorders, hypervitaminosis D, or following electro-excision of the cervix (e.g. in severe dysplasia). Herein we present the occurrence of OM in a 52 years old patient, nullipara, with a history of 3 abortions, diagnosed 8 years, after the onset of menopause. In absence of other evident causes we suggest that the abortion may be involved in the development of OM in our patient.

Key Words: Osteoid metaplasia, microcalcification

INTRODUCTION

The paper presents a case of osseous metaplasia (OM) of the uterus, a rarely encountered disease. Usually the diagnosis of OM is established by ultrasound and hysteroscopy, and certified by histopathological examination. The etiology of OM has given rise to controversies, various theories of the uterin bone formation have been discussed.^{1,7}

Some studies showed that OM may be generated from stromal tissue by differentiation of fibroblast into osteoblastes.

Other studies hypothesized that OM is secondary to abortion and retention of fetal bone, a tissue that may initiate osteogenesis.^{2,3,8}

Many authors believe that the presence of osseous structures in the uterus is associated with two very distinct situations. One is the uterine retention in uterus of fragments of fetal bone after a late abortion. In

this case the bone fragments have a recognizable morphology and a well differentiated structure. The other situation is osseous metaplasia from elements which are believed to be of Mullerian origin, arising in the myoendometrial transitional zone.⁴

Most patients having OM present with menstrual irregularities, pelvic pain, bloody vaginal discharge, infertility and sterility.

In most cases the treatment of osseous metaplasia consists in the removal of the ectopic intrauterine bone by hysteroscopy or by ultrasound-guided hysteroscopy. Sometimes hysterectomy is necessary for the definitive treatment of the patient.

CASE REPORT

A 52-year old patient, nullipara, with a history of 3 abortions and 8 years of menopause, presented with bloody vaginal discharge related to physical activity. The patient did not complain of pelvic pain. The clinical examination, colposcopy (including Schiller test) were normal. A cervico-vaginal cytology was sampled and coloured by Papanicolau, APT Dragan and PAS reaction. The cytology smears revealed mild atrophy, cytolysis and intense inflammatory process; numerous cocci, leukocytes and amorphas PAS+ material, and numerous. The endovaginal ultrasound showed a hyperechogenic area (Fig. 1). An endometrial biopsy by curettage was done in order to identify the nature

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of hyperechogenic tissues. The hyperechogenic image persisted even after curettage (Fig. 2). The biopsy samples were paraffin-included and stained by Hematoxylin – Eosin and trichrome Masson method. The histopatological exam showed extended areas of microcalcification.

The pathologists concluded that the patient had uterine osseus metaplasia and supposed that the calcification occurred during the healing proces after an abortion.

Specific for this case was the occurrence of the disease after 8 years of menopause.



Figure 1. Ultrasound image before biopsic curettage of the uterine areas of hyperechogenicity



Figure 2. Ultrasound image after biopsic curettage of the uterus, areas of hyperechogenicity persisting

DISCUSSIONS

Osteoid metaplasia of the uterus is a rare disease that affects the uterus and was reported after abortion, in chronic endometrites, metabolic disorders, and electro excision of the cervix (e.g. for severe cervical dysplasia).

Bedaiwn reported a case of a woman that developed osseous metaplasia of the cervix shortly after loop electrosurgical excision procedure (LEEP) for severe cervical dysplasia. In this case the bone formation rapidly recurred after initial removal.² Heterotopic

tissue in the uterus is rare and unexplainable. It is supposed that remaining fetal bone tissue initiates the proces of osseous metaplasia.

The effects of the heterotopic bone can be compared to those of an IUD so that symptoms such as irregular bleeding, sterility or infertility, repeated early abortions are frequently found in these patients; the symptoms cease only after removal of the bony material from the uterus. After removal of the bony material the patient can develop a normal pregnancy.³

OM needs to be differentiated from calcification of a necrotic tissue. Some authors consider that OM is due to retention of placental fragments or chronic endometritis.

Metabolic disorders like hypercalcemia, hypervitaminosis can also lead to endometrium calcification.^{8,10} Pathogenetic mechanism is not known, but cases have been reported especially after abortion.⁹ The period of time between abortion and diagnoses of the disease can vary from several months to 12 years.¹¹⁻¹⁴

Endometrial ossification in postmenopausal women is very rare; most women presenting this disease were aged between 20 and 40 years.⁶ Therefore, clinicians should consider the possibility of endometrial ossification as a differential diagnosis of intrauterine foreign body on ultrasound, even in older patients. In addition, pathologists should be aware of this rare entity in order to avoid a misdiagnosis of malignant mixed mullerina tumor in the endometrial curettage specimen, which may result in unnecessary hysterectomy.

CONCLUSION

We consider that osseus metaplasia of the uterus in our patient was produced by the calcification of the endometrium during the healing process after an abortion.

Specific for our patient was the occurence of OM 8 years after the onset of menopause.

REFERENCES

1. Duguid JP, et al. Microbiol. Infections, vol. I, 1978, Churchill Livingstone, p. 304.
2. Bedaiwy MA, Goldberg JM, Biscotti CV. Recurrent osseous metaplasia of the cervix after loop electrosurgical excision. *Obstet Gynecol* 2001;98:968-70.
3. Degani S, Gonen R, de Vries K, Sharf M. Endometrial ossification associated with repeated abortion. *Acta Obstet Gynecol Scand* 1983; 62(3):281-2.
4. Hoang-Ngoc Minh, Lemay B, Smadja A. Reflection of endometrial osteogenesis. *Rev Fr Gynecol Obstet* 1984;79(6):471-4.
5. Garcia Leon F, Kably Ambe A. Osseous metaplasia of the endometrium as a cause of infertility. Hysteroscopic approach. *Ginecol Obstet Mex* 1999;67:37-41.

6. Shimizu M, Nakayama M. Endometrial ossification in a postmenopausal women. *J Clinic Pathol* 1997;50:171-2.
7. Niccoli V, Carillo C, Caruso MT, et al. Clinical-diagnostic considerations of a case of endometrial ossification as a cause of secondary infertility. *Minerva Gynecol* 1997;49:289-91..
8. Ejeckam JC, Haseeb F, Ahmad R, et al. Endometrial ossification. *Trop Geogr Med* 1991;43(3):314-6.
9. Lewis V, Khan-Dawood F, King M, et al. Retention of intrauterine fetal bone increases menstrual prostaglandin. *Obstet Gynecol* 1990;75:561-3.
10. Ombelet W. Endometrial ossification, an unusual finding in an infertility clinic. A case reported. *J Reprod Med* 1989;34(4):303-6.
11. Basu M, Mammen C, Owen E. Bony fragments in the uterus: an association with secondary subfertility. *Ultrasound Obstet Gynecol* 2003;22(4):402-6.
12. Bedaiwy Ali Mohamed, et al. Recurrent osseous metaplasia of the cervix after loop electrosurgical excision. *Obstetrics and Gynecology* 2003;3:231-4.
13. Mc Cartney M. *Medical microbiology*, vol. I, Churchill Livingstone: p.324.
14. Mandell G. *Principles and practice of disease*, vol.I, , 1988, Churchill Livingstone: p.1427-34.