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RESEARCH ARTICLE

Osseous Metaplasia of the Cervix: A Rare Case Report

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Abstract: Osseous metaplasia of the cervix is an extremely rare benign condition characterized by the presence of mature bone tissue within the cervical stroma. Fewer than ten cases have been described in literature. We report a case of a 55-year-old postmenopausal woman presenting with abnormal vaginal bleeding and lower abdominal pain. Diagnostic evaluation and histopathological examination confirmed osseous metaplasia of the cervix. This case highlights the clinical, radiological, and histopathological features of this rare entity and emphasizes the importance of differentiating it from malignant conditions.

Keywords: Osseous metaplasia, cervix, heterotopic bone, hysteroscopy, postmenopausal bleeding

INTRODUCTION

Metaplasia refers to the reversible transformation of one differentiated cell type into another, often as an adaptive response to chronic irritation or inflammation. Osseous metaplasia involves the formation of mature bone tissue in an abnormal soft-tissue site. While osseous metaplasia of the endometrium is occasionally reported, its occurrence in the cervix is exceedingly uncommon, with only a handful of cases documented globally since 1982 [1,2].

The pathogenesis of cervical osseous metaplasia is still debated. Hypotheses include chronic inflammation, tissue repair following trauma or abortion, and metaplastic transformation of fibroblasts into osteoblasts [3,4]. Clinically, the condition may mimic malignancy, making accurate diagnosis crucial to avoid overtreatment.

Case Presentation

A 55-year-old woman, gravida 5, para 3, with two prior abortions and previous normal vaginal deliveries, presented to the gynecology outpatient department with complaints of spotting per vaginam for one month and lower abdominal pain for ten days. She had undergone tubal ligation 28 years ago and attained menopause two years prior. There was no history of malignancy, metabolic disease, or hormonal therapy.

On examination, she was well nourished with stable vital signs. Abdominal examination revealed a healthy post-tubal ligation scar without tenderness or palpable mass. Per speculum examination revealed brownish discharge; no cervical growth was visible. Per-vaginal examination found a normal-sized uterus with no adnexal masses.

Investigations: Routine hematological and biochemical parameters were within normal limits. Pelvic ultrasound showed a uterus measuring 9.8 × 4.5 × 5.5 cm with endometrial thickness of 12 mm and a hyperechoic focus in the lower uterine segment/cervix, suggestive of a calcified intrauterine foreign body or displaced IUCD.

Figure 1: Ultrasound showing a hyperechoic cervix.

Pap smear demonstrated inflammatory changes and bacterial vaginosis but was negative for intraepithelial lesion or malignancy.

She was treated empirically with metronidazole 400 mg for seven days. Hysteroscopy and fractional curettage revealed dense bony material within the cervical canal. The specimen sent for histopathology showed mature lamellar bone fragments within fibrous cervical stroma, confirming osseous metaplasia. The endometrial curettings revealed disordered proliferative endometrium. A non-descent vaginal hysterectomy was subsequently performed, and recovery was uneventful.

Discussion

Osseous metaplasia (OM) is characterized by the presence of mature bone tissue in non-skeletal sites such as the endometrium, cervix, or ovary [5,6]. Cervical OM is exceptionally rare compared to endometrial OM, with fewer than ten reported cases worldwide. The estimated incidence is approximately 0.3 per 1,000 women [1].

Proposed mechanisms include:

Metaplastic transformation of mesenchymal cells or fibroblasts into osteoblasts due to chronic inflammation [3].

Retention of fetal bone following abortion or curettage, which may trigger osteogenesis [7].

Metabolic or hormonal influences, including hypercalcemia, hypervitaminosis D, and prolonged estrogenic stimulation [8].

Iatrogenic trauma from cervical procedures such as conization or electro-excision [2].

Clinically, patients may present with abnormal bleeding, postcoital spotting, pelvic pain, dyspareunia, or infertility. Radiologically, it may mimic a calcified mass or retained IUCD. Hysteroscopy aids in diagnosis and removal, while histopathology remains the gold standard [5].

Differentiation from dystrophic calcification and metastatic calcification is essential. Dystrophic calcification occurs in necrotic tissue with normal calcium metabolism, whereas metastatic calcification arises from elevated calcium-phosphate levels [4].

In this patient, no metabolic abnormalities or recent abortions were noted, suggesting reactive osseous metaplasia secondary to chronic cervical inflammation. Recognition of this benign condition is vital to prevent misdiagnosis as a malignant mixed Müllerian tumor.

Conclusion

Cervical osseous metaplasia, though benign, can mimic malignancy both clinically and radiologically. Awareness of this rare entity among clinicians and pathologists is crucial for accurate diagnosis and appropriate management. Hysteroscopic excision or hysterectomy provides definitive treatment with an excellent prognosis.

References

1. Coccia ME, Becattini C, Bracco GL, Scarselli G. Ultrasound-guided hysteroscopic management of endometrial osseous metaplasia. Ultrasound Obstet Gynecol. 1996;8(2):134–136.
2. Bhatia NN, Hoshiko MG. Uterine osseous metaplasia. Obstet Gynecol. 1982;60(2):256–259.
3. Srofenyoh E, Addison M, Dortey B, Kuffour P. Intrauterine retained fetal bones as a cause of secondary infertility. Ghana Med J. 2006;40(3):105–109.
4. Grayzel DM, Lederer M. Metastatic calcification. JAMA Intern Med. 1939;64(1):136–147.
5. Karaca M, Koyuncu FM, Haberal A, Yalçin HR, Yildirim N. Osseous metaplasia of the cervix: A rare entity. Case Rep Pathol. 2018;2018:1392975. doi:10.1155/2018/1392975
6. Shroff CP, Pathak R. Endometrial ossification and infertility—a case report. J Postgrad Med. 1990;36(4):219–220.
7. Marcus SF, Bhattacharya J, Williams G, Brinsden P. Endometrial osseous metaplasia: A cause of secondary infertility. Hum Reprod. 1994;9(10):1934–1937.
8. Cayuela E, Perez-Medina T, Vilanova J, Alejo M, Cañadas P, Jiménez JS. True osseous metaplasia of the endometrium: The bone is not from a fetus. Fertil Steril. 2009;91(4):1293.e1–1293.e4.