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## CASE REPORT

### Endometrial Microcalcification in a 31-Year-Old Woman: A Case Report

Ano-Edward GH, Bobo TI, Bakare TY

<sup>1</sup>Department of Anatomic Pathology, <sup>2</sup>Department of Obstetrics and Gynaecology, Bowen University, Iwo, Nigeria

\*Correspondence: Dr GH Ano-Edward, Department of Anatomic Pathology, Bowen University Teaching Hospital, Ogbomoso, Oyo State, Nigeria. E-mail: ganorltd@gmail.com; ORCID - <https://orcid.org/0000-0002-2496-6788>.

#### Summary

Endometrial microcalcifications are an uncommon event, though they may be a cause of amenorrhoea and infertility. It is often detected incidentally as echogenic lesions on ultrasonography and in endometrial samples sent for histopathological examination. A 31-year-old Para 0<sup>+3</sup> presented with amenorrhoea and a "curettage sample" obtained from an evacuation performed for a missed abortion at ten weeks gestation. She brought the tissue obtained during the endometrial curettage, which was performed at a private hospital for histopathological examination and follow-up at the Gynaecology Clinic. A provisional diagnosis of atrophic endometrium was made following a pelvic ultrasound scan, while histopathological examination revealed placenta tissue with microcalcifications. The patient was subsequently placed on combined oral contraceptives for three cycles, having ruled out possible contraindications. She had regular *per vaginam* bleeding for three consecutive cycles. She resumed spontaneous menses and eventually achieved pregnancy. Although endometrial microcalcification is rare, it is a potential cause of secondary amenorrhea and infertility in women of reproductive age group.

**Keywords:** Amenorrhea, Endometrial calcification, Infertility, Placenta, Missed abortion.

#### Introduction

Endometrial calcification may be classified as macro or micro (less than 2 mm). [1] Calcification is the deposition of calcium in tissues, which may be physiological or pathological. Pathological calcification can be either dystrophic or metastatic. [1] Dystrophic calcification occurs in damaged tissues, either dead or degenerative, which may involve the following processes: denaturation of proteins, which exposes groups capable of binding to phosphates. This later acts

as nucleation sites for the precipitation of calcium, and the process is accentuated by hypercalcemia. However, metastatic calcification may occur in normal tissues whenever there is hypercalcemia, which may be due to hyperparathyroidism, malignancy, vitamin D intoxication, high bone turnover and renal failure. [1] Endometrial microcalcifications are rare findings that are usually seen incidentally during histopathologic examination of tissue specimens curetted from the endometrium. Sometimes, during ultrasound examination, it is

seen on images projected on the screen as echogenic foci, and the histopathologic findings reveal the presence of microcalcifications in the tissue. [1,2] The clinical implication can be innocuous to ominous. [1]

Endometrial calcifications have been associated with menstrual abnormalities and infertility in young women, while in postmenopausal women, it is linked with placenta site nodules, chronic endometritis, atrophic endometrium, endometrial polyps, endometrial hyperplasia, and endometrioid carcinoma. [1,2] Most tissues showed secretory endometrial tissue, ciliated cell metaplasia, and, at times, atrophic endometrium. [2] Truskinovsky *et al.* reviewed specimens from 16 patients who had endometrial microcalcifications and reported that the extent of microcalcifications was positively correlated with the presence of endometrial polyps, postmenopausal state, atrophic endometrium and hormonal replacement therapy. [1] The true aetiology remains unknown, the pathogenesis is marked with controversies, and its clinical importance still needs to be fully validated. [1] Its pathologic recognition is clinically important to reassure clinicians in symptomatic postmenopausal women, alert gynaecologists to a treatable albeit rare cause of infertility in younger women, and assist in patients' counselling. [2]

Some women who had problems with fertility were screened with ultrasound and magnetic resonance imaging (MRI), conceived after appropriate treatment. Thus, raising the possibility of endometrial microcalcification being a cause of infertility. [3] Endometrial microcalcification is rare, and most cases occur in women of the reproductive age group. [4] It has been reported in a woman of childbearing age who had a hysteroscopy and histopathological examination of the curetted, calcified tissue sample from the uterine cavity, which turned out to be a bony tissue. [5]

Preceding abortion has been reported to be a cause of endometrial microcalcification in a review by Mariana C Pereira *et al.* [6] They also found out that endometrial microcalcification is a cause of secondary infertility, and ultrasound scanning with hysteroscopy treatment can restore fertility in most patients. [6] Todani and Todani also reported a case of endometrial microcalcification that caused primary amenorrhea in a 17-year-old girl. [7] Other researchers have attributed the presence of calcification to conditions like oral contraceptive pills, the use of an intrauterine contraceptive device, benign papillary structures, and the use of clomiphene. [8] In addition, endometrial calcification has been observed in patients with an average age of 12.3-13 years. In some cases, it is attributed to sexually transmitted infections in women. [7] This report is about a case of endometrial calcification in a 31-year-old woman following a missed abortion at 10 weeks who had repeated manual uterine evacuation and curettage.

### Case Description

A 31-year-old para 0<sup>+3</sup> was referred to Bowen University Teaching Hospital, Ogbomoso, Nigeria with a curettage endometrial sample obtained from the second and third evacuation following a missed abortion, which occurred at ten weeks' gestation. She brought the second sample from the uterine curettage, which was performed at a private hospital for histopathological examination and subsequent follow-up gynaecological care.

She had been pregnant about seven months ago; she booked the pregnancy shortly after her first missed period. However, at her subsequent antenatal clinic visit, she was informed after a routine ultrasound examination that the foetus was not viable at ten weeks gestation because of

the absence of foetal cardiac activity. Subsequently, she had a manual vacuum aspiration (MVA) at the clinic where she booked the pregnancy. Following the procedure, she only noticed scanty spotting *per vaginam* that lasted for two days. Her menses did not resume three months following the procedure, but she had features of pregnancy. Thus, she presented at a teaching hospital nearby and was evaluated (Figure 1). She subsequently had endometrial evacuation a second time.

She presented at another clinic after about two months of amenorrhoea. Thus, the third uterine evacuation was performed, and an endometrial curettage sample was obtained. She was referred on suspicion of gestational trophoblastic disease (invasive molar gestation) or the presence of bony tissue within the endometrium. During endometrial curettage, a hard, craggy sensation was noticed. Thus, the patient brought the curettage tissue sample for histopathological examination and further gynaecological care.

At the gynaecology outpatient clinic, she presented with amenorrhoea of eight months duration following a missed abortion at ten weeks and a history of three episodes of manual uterine evacuation. Endometrial curettage samples were obtained on the second and third evacuations, as stated above. Her Body Mass Index (BMI) was within the normal range, and she has not had other vaginal procedures besides from the uterine evacuation stated above. There was no history suggestive of thyroid disease or galactorrhea, but she had a history of two previous induced abortions at gestational ages of between six and eight weeks while she was in secondary school. Routine physical examination showed no remarkable findings, the vital signs were within normal range, and there were no abnormal findings with abdominal and vaginal examination. The serum pregnancy test was negative, and the pelvic ultrasound scan revealed a normal uterus measuring 4.7x 3.5cm in

anteroposterior and transverse diameter with an ill-defined endometrial plate.



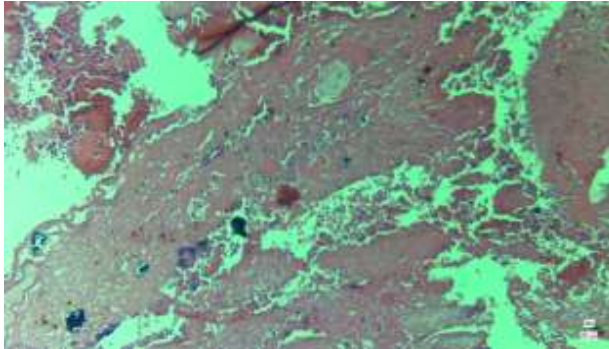
**Figure 1: Third ultrasound scan showing retained products of conception**

On the histopathological examination of the tissue sample, a grey-brown tissue admixed with clotted blood was found; it was soft in consistency and aggregated to about 6-7cm in the widest diameter (Figure 2).

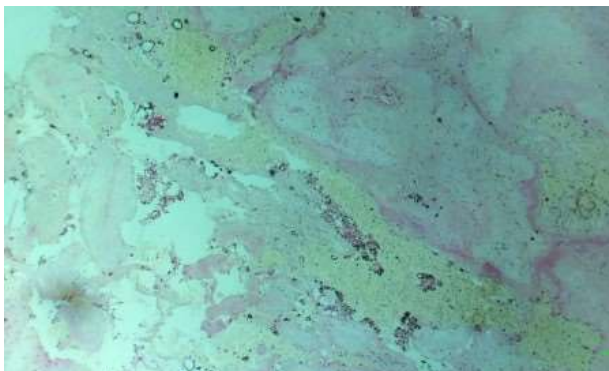


**Figure 2: Gross features of endometrial tissue sample**

Four cassettes of the tissue were partially embedded. The histopathological examination findings aligned with placenta tissue with microcalcification (Figures 3a and 3b).



**Figure 3a:** X100 shows placenta tissue with calcifications



**Figure 3b:** X40 shows the Von Kossa stain of the placenta tissue

A provisional diagnosis of secondary amenorrhea due to suspected atrophic endometrium following overzealous endometrial curettage was made. She was subsequently placed on combined oral contraceptives for three cycles, having ruled out possible contraindications. She was regular on follow-up visits at the outpatient gynaecology clinic for three months with a history of bleeding *per vaginam* after each cycle. Spontaneous menses resumed subsequently, and by the sixth to the seventh month, she became amenorrhoeic with suggestive manifestations of cyesis, which was confirmed with a pregnancy test. She is currently attending the antenatal clinic and being closely monitored.

**First histopathology report:** Sections from the sample obtained by endometrial curetting showing numerous viable and non-viable chorionic villi in a background of extensive fresh

haemorrhage. A diagnosis of placenta tissue was made.

**Second ultrasound report:** An ultrasound scan revealed an echogenic mass within a poorly formed low echogenic structure within the endometrial cavity. The features are in keeping with a retained product of gestation (Figure 1).

**Second histopathology report:** A non-viable, ghost-like, degenerating chorionic villi with extensive areas of haemorrhagic necrosis was seen. There were occasional foci of dystrophic calcification on Von Kossa stained sections.

## Discussion

Endometrial microcalcification is a very uncommon and rare event that may account for amenorrhea and subfertility in some patients. [3,8] In the index patient who has had repeated episodes of uterine curettage, it is possible that endometrial microcalcification was responsible for the amenorrhoea of about eight months duration following the last foetal loss. The index patient was very observant; she had noted that there was no bleeding whatsoever after the last uterine evacuation. This prompted her quest for repeated examinations, as she felt from past experience that it was unusual. It was also unusual that an endometrial sample of foetal loss was sent for histopathological examination, except in cases of suspected molar gestation, choriocarcinoma, or an unusual craggy sensation felt during the procedure. This was the case with this patient, prompting a referral for further evaluation and management.

Interestingly, the index case had atrophic endometrium on pelvic ultrasound. This is not commonly seen with endometrial microcalcification, which might follow repeated curettage or have a rare association with microcalcification, as reported by Abdull Gaffar *et al.* The latter observed that most endometrial samples in endometrial microcalcifications

showed secretory endometrial tissue, ciliated cell metaplasia and occasionally atrophic endometrium. [2]

Furthermore, in the evaluation of female patients for infertility, repeated dilatation and curettage may reveal the presence of psammoma bodies or dystrophic calcification in a normal uterus. This may be the cause of the infertility. [10] In some cases, anatomic pathology services in underserved areas may not be available. Due to the large volume of work, microcalcification may be missed where the services are available. Therefore, pathologists need to look out for the presence of microcalcification in samples of endometrial curettage sent for examination, especially in women with subfertility. The role of ultrasound scanning must be emphasized in the patient's diagnosis and follow-up management. [3] The procedure revealed an echogenic mass suggesting retained products of gestation and affirmed there was no other uterine abnormality. Ultrasound scanning is a simple and efficient tool in underserved areas where Magnetic Resonance Imaging may not be available. Therefore, it is a basic diagnostic tool needed across levels of healthcare delivery.

### Conclusion

Although a rare condition, endometrial microcalcifications may be considered a likely aetiology of secondary amenorrhoea and infertility, especially in the presence of an antecedent history of pregnancy loss and uterine evacuation, when other possible causes have been ruled out. Access to basic ultrasound scanning and specialized histopathologic services is required in the evaluation of suspected ambiguous cases of infertility.

**Informed Consent:** The patient reported in the study gave informed permission to use her data in this report.

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**Authors' Contributions:** AEGH conceived the report. BTI and BTY did a literature review. BTI drafted the manuscript. BTY revised it. All the authors approved the manuscript.

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