

**Case Report:****Retained intrauterine foetal bones: a rare cause of secondary infertility leading to diagnostic dilemma**

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**ABSTRACT**

The presence of intrauterine bone fragments is rare. These patients may present with pelvic pain, dysmenorrhoea, abnormal uterine bleeding and secondary infertility. We present a case of a 36-year old woman complaining of dysfunctional uterine bleeding with secondary infertility of six years duration. Detailed history, pelvic ultrasonography, hysteroscopy and histopathological examination of the hysteroscopically evacuated uterine cavity fragments were performed. Morphological examination revealed interesting presence of some tiny bony chips along with endometrial tissue. Intrauterine retained foetal bony chips due to previous medical termination of pregnancy was identified to be the cause of secondary infertility in the present case. Our case reiterates the importance of analyzing detailed clinical history in the evaluation of patients with secondary infertility.

**Key Words:** *Intrauterine foetal bones, Infertility*

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**INTRODUCTION**

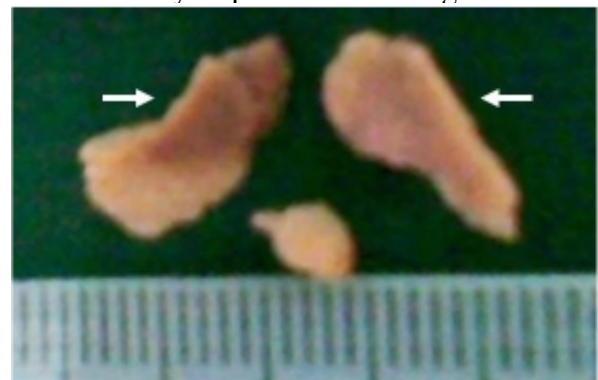
The presence of intrauterine bone fragments is a rare condition. Retained foetal bones in the uterine cavity may be subsequent to mid-trimester pregnancy termination, spontaneous intrauterine death and missed abortion. The reported incidence of retained foetal bone is 0.15% among diagnostic hysteroscopies.<sup>1</sup> They may prevent pregnancy by an intrauterine contraceptive device (IUCD) - like effect. There are only a few case reports of intrauterine retained foetal bones resulting in secondary infertility in the world literature.<sup>2-10</sup>

**CASE REPORT**

A 36-year-old married woman with secondary infertility of six years duration presented with pelvic pain and dysfunctional uterine bleeding (DUB) in the form of polymenorrhoea and hypomenorrhoea. On examination she was lean and thin built and manifested moderate pallor. Laboratory examination revealed haemoglobin 8 g/dL, total leucocyte count 11800/mm<sup>3</sup>, differential count 72% polymorphs, erythrocyte sedimentation rate 22 (at the end of first hour). Remaining haematological and biochemical parameters

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including fasting blood glucose levels were within normal limits. Urine examination was normal. Hepatitis B surface antigen (HBsAg), serological markers for hepatitis C virus (HCV) and human immunodeficiency virus (HIV) were non-reactive by enzyme linked immunosorbent assay (ELISA) method. Per-speculum examination and pelvic ultrasonography (USG) did not reveal any remarkable findings. Hysteroscopy revealed multiple tiny bony chips in the uterine cavity which were evacuated and submitted for histopathological examination. Gross examination revealed two small flattened bony chips each measuring 0.8 and 0.7

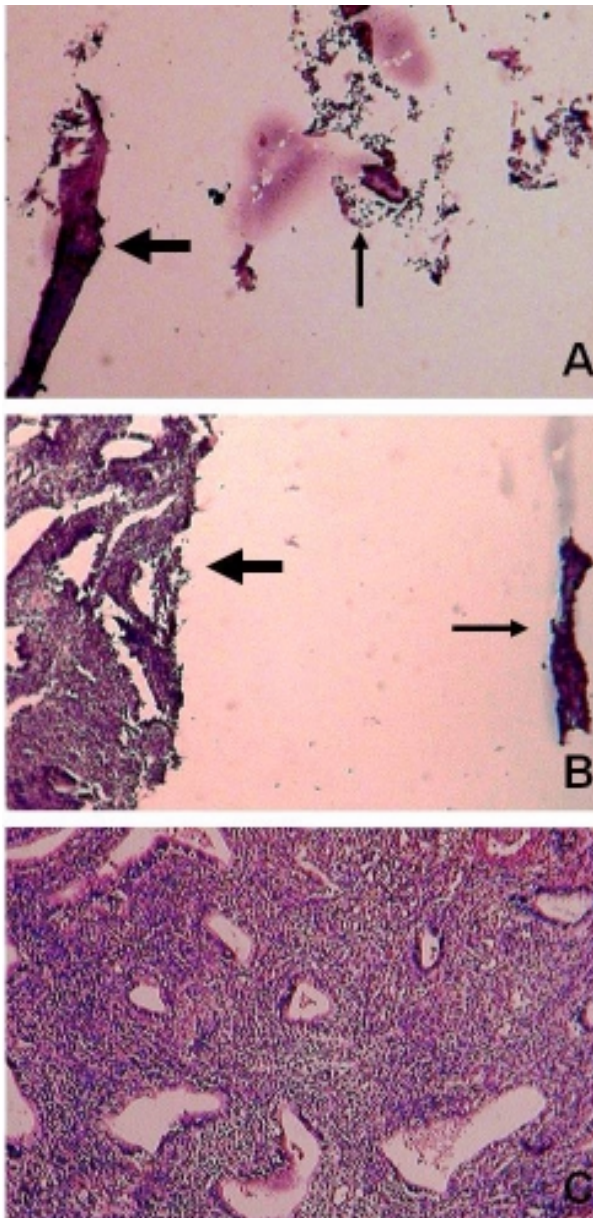


**Figure 1:** Gross specimen photograph of hysteroscopically removed bony chips (white arrow) along with tiny endometrial tissue

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cm along with a tiny greyish brown endometrial soft tissue piece (Figure 1).

Microscopic examination revealed a late proliferative endometrium going onto very early secretory phase with fragmented osseous tissue bits (Figure 2). A thorough review of the past history revealed the woman had become pregnant one year after her marriage (i.e., nine years back). Immediately afterwards, due to personal



**Figure 2:** Photomicrograph showing bony fragments (thick arrow) with shattered endometrial glands (thin arrow) (Haematoxylin and eosin  $\times 100$ ) [A] endometrial fragments (thick arrow) (Haematoxylin and eosin  $\times 200$ ) with closely placed bony chip (thin arrow) [B] and late proliferative endometrium going to early secretory phase (Haematoxylin and eosin  $\times 400$ ) [C]

problems, the couple had divorce and this unexpected turn of events forced the lady to undergo medical termination of pregnancy (MTP) during mid-trimester by dilatation and curettage method. After a couple of years she got married again and was facing secondary infertility problem since the past six years. Correlating with the past history, it was concluded that the patient had retained foetal bony fragments during the second trimester MTP, leading to secondary infertility. Removal of the fragments by curettage relieved her of pelvic pain symptoms and regularized her menstrual cycle.

## DISCUSSION

Retention of foetal bones in the uterus is a rare complication of abortion or following removal of a macerated foetus. Roth and Taylor<sup>4</sup> hypothesized that without a previous pregnancy loss, metaplasia of mature endometrial stromal cells into bony tissue occurs in response to chronic inflammation or trauma. Prolonged retention of foetal bones might cause pelvic inflammatory disease, chronic pelvic pain, infertility, menorrhagia, irregular bleeding, offensive vaginal discharge or passage of bony fragments per vaginum. Taylor and colleagues<sup>5</sup> in a study of nine patients reported secondary infertility in seven, pelvic pain in one and passage of bony fragments in one.

Verma et al<sup>6</sup> reported the case of a 20-year-old woman with history of multiple terminations of pregnancy leading to chronic pelvic pain which got relieved after hysteroscopic removal of the intrauterine foetal bones. In another study,<sup>7</sup> a case of secondary infertility was reported following MTP by dilatation and evacuation procedure at 22 weeks of gestation. The woman subsequently conceived shortly after hysteroscopic removal of numerous intrauterine bone fragments. A similar case with secondary infertility for a prolonged period of six years was noted by other workers who speculated that the presence of the bones resulted in uterine synechiae and an IUCD like effect and thus prevented pregnancy. It is also possible that the presence of bones near the fundal region elevated endometrial prostaglandin F<sub>2</sub> $\alpha$  concentration in that region and rendered her

infertile. Eleven cases were reported from a Korean medical centre<sup>9</sup> in which retained fragments of foetal bone after midtrimester abortion were contributing to secondary infertility. In midtrimester abortion, instrumentation tends to detach the foetal head and the skull may have to be crushed. The retention of a bony structure in the endometrial cavity or ossification of the endometrium may play the role of an IUCD in preventing conception.<sup>9</sup> An interesting but contrary opinion was suggested by others<sup>10</sup> based on their observation that removal of intramural bony fragments may not be needed in an asymptomatic patient, as their presence does not seem to compromise fertility.

Retained bony fragments may not always be visualized by hysterosalpingography. Diagnosis can be made on transvaginal USG and x-ray study of the pelvis. Hysteroscopy is an invaluable tool in both confirming the diagnosis and achieving its successful removal. Women with complaints of pelvic pain or infertility with a past history of abortion should be evaluated by a transvaginal ultrasound to rule out the presence of intrauterine foetal bones. Hysteroscopy offers great help in identifying and treating such a case.

Intrauterine bone fragments may result from retained foetal bones or endometrial osseous metaplasia or both. Retained foetal bone fragments should be remembered in patients with persistent DUB, dysmenorrhoea, chronic pelvic pain and secondary infertility following a pregnancy or pregnancy termination. Infertile women with a history of late first trimester or midtrimester abortion should be evaluated by transvaginal USG to rule out the presence of intrauterine foetal bone.<sup>2,9</sup> Our patient gave birth to a healthy child one year after removal of retained bony chips in uterus, confirming it as the cause of secondary infertility. This case report emphasizes the

importance of analyzing detailed history, including past history, in clinical practice. In this case the bony chips could not be picked up by USG, though their size was more than 0.5 cm, which suggests that the radiologists should also keep in mind this rare entity while evaluating USG findings in such a case.

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