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A Bony Barrier to Conception: Intrauterine Retained Fetal Bone and Secondary Subfertility

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Abstract

A rare but significant cause of secondary subfertility is the retention of intrauterine fetal bone following a second-trimester abortion. Patient with retained intrauterine fetal bone may present with irregularities of menstrual cycle, dysmenorrhoea, dyspareunia, foul smelling discharge. Accurate diagnosis relies on clinical history and imaging. Hysteroscopy is used for detecting and removing retained fetal bone fragments.

Keywords: Intrauterine fetal bone, secondary subfertility, hysteroscopy.

Introduction

Female subfertility may arise from various causes, including ovarian, tubal, and uterine pathologies. A prior history of abortion, particularly when involving procedures like dilation and evacuation (D&E), can contribute to subfertility through post-procedural infections that damage the fallopian tubes. Moreover, repeated or aggressive curettage may lead to intrauterine adhesions which can further compromise fertility. A rare but noteworthy cause of secondary subfertility is the retention of fetal bone within the uterine cavity following a second-trimester abortion.[1] This condition is often associated with symptoms such as irregular vaginal bleeding, foul-smelling discharge, chronic pelvic pain, and dyspareunia. Retained fetal bone can act similarly to an intrauterine contraceptive device, disrupting endometrial function and preventing implantation. Diagnosis requires careful clinical evaluation and a high degree of suspicion. Imaging modalities like transvaginal ultrasound and hysterosalpingography can assist in identifying retained bone fragments. We present a rare case of secondary subfertility attributed to retained intrauterine fetal bone, notable for its asymptomatic presentation.

Case Presentation

A 28-year-old woman (P1L1A1) presented to the gynaecology outpatient department with complaints of secondary subfertility for five years. Her obstetric history included a spontaneous vaginal delivery 10 years ago and

a mid-trimester abortion five years prior. She had no menstrual complaints. She gives no history of irregular vaginal bleeding, foul smelling discharge, chronic pelvic pain or dyspareunia.

On general physical examination no abnormalities were detected. On per abdominal examination, abdomen was found to be soft and non-tender. On Gynaecological examination, per speculum examination revealed the cervix and vagina to be healthy, uterus was found bulky on bimanual examination, bilateral fornices were free and non-tender. The couple underwent a routine infertility workup, and all laboratory investigations, including hormonal assays and routine blood tests, were within normal limits. A transvaginal ultrasound (TVUS) revealed a hyperechoic structure within the uterine cavity, suggestive of a foreign body, initially presumed to be an intrauterine contraceptive device (IUCD). (Fig 1) Upon further history-taking, the patient denied any history of IUCD insertion. A decision was made to perform hysteroscopy for direct visualization and removal of the suspected foreign body. The patient was counselled regarding the procedure, and informed consent was obtained.

Figure 1: USG image

Figure 2: Retrieved specimen

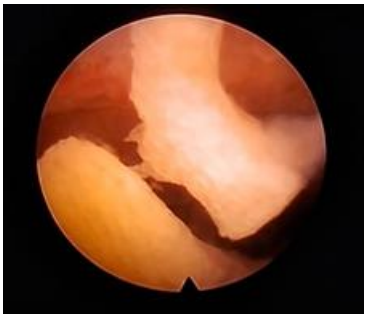

Figure 3: Hysteroscopic view

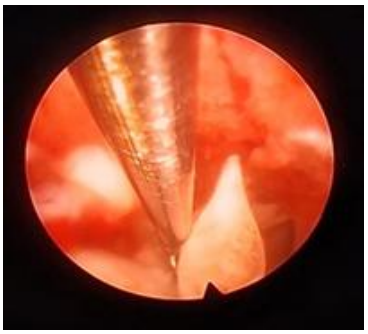

Figure 4: Removal by hysteroscopy

Treatment and Outcome

Hysteroscopy was performed under local anaesthesia. A whitish, foreign body was identified within the uterine cavity and removed in a piecemeal manner. The extracted tissue closely resembled fetal bone (Fig 2) and was sent for histopathological examination (HPE), which confirmed the diagnosis of fetal bone. Post procedure patient was stable and was discharged next day. The patient was followed up regularly and conceived spontaneously within four months post procedure.

Discussion

The majority of individuals with retained intrauterine bone fragments have a prior history of induced abortion or uterine curettage.

A case review done by Agolli A, Lawrence JA et al. showed secondary infertility frequently occurs following a dilation and curettage procedure, often as a result of retained fetal bone fragments.[1] Hysteroscopy is considered the most reliable method for both diagnosing and managing this condition.

Retained fetal bones were identified in 0.28% of all women with infertility and represented 12% (22 out of 144) of uterine causes requiring operative hysteroscopy in a study done by Gainder S., Arora P et al. Following hysteroscopic removal, only 5 of 18 women (27.7%) conceived—three delivered full-term vaginally, one experienced a mid-trimester abortion, and one is currently in the third trimester.[2]

Humane A, Agarwal N highlighted that intrauterine retained fetal bone acts as a intrauterine device stimulates endometrial prostaglandins which leads to secondary subfertility and patient comes with various symptoms like dyspareunia, dysmenorrhoea and irregular vaginal bleeding.[3] Retained intrauterine fetal bone is also a unusual cause of chronic pelvic pain in a study done by Gupta N, Singh N et al.

Barton B, Every E, et al. described a case of incidentally detected retained intrauterine fetal bone following therapeutic abortion, presenting with mid-cycle pain and secondary subfertility.[4]

Hajihashemi M, Mohammadizadeh F, et al. reported a case from Iran of retained intrauterine fetal bone presenting with malodorous vaginal discharge, irregular bleeding, and uterine tenderness. Ultrasound revealed calcified foci within the uterine cavity. Hysteroscopic removal was attempted but could not be performed due to cervical stenosis. Consequently, a hysterectomy was undertaken, and multiple fetal bone fragments were identified on cross-sectional examination.[5]

A case review done by Reddy l., Jaiswal A et al in 2023 showed Retained fetal bone fragments are an uncommon but important cause of secondary infertility. They can induce chronic inflammation and impair endometrial receptivity, hindering implantation. Diagnosis is often difficult with standard imaging, making hysteroscopy the preferred method for both detection and treatment. Its ability to directly visualize and remove intrauterine fragments offers a significant advantage in restoring fertility. This case highlights the need to consider this diagnosis in women with unexplained infertility and a history of pregnancy loss or termination.[6]

Kramer HMC, Rhemrev JPT reported a similar case retained fetal bones diagnosed eight years post-abortion in an asymptomatic woman. Hysteroscopic removal led to spontaneous conception within six months. This underscores the importance of thorough history and endometrial evaluation in secondary infertility[7]

This case is notable for the rarity of an asymptomatic retained intrauterine fetal bone persisting for over five years, with the patient presenting solely with complaints of secondary infertility.

Conclusion

This case highlights the importance of thorough history-taking, clinical suspicion, and appropriate investigations in cases of secondary subfertility. In patients with a history of mid-trimester abortion or intrauterine fetal demise, careful examination of fetal expulsion completeness should be performed, and a follow-up ultrasound may be beneficial in detecting retained products. By reporting this case, we aim to draw attention

to this rare but easily reversible cause of secondary subfertility. The successful retrieval of intrauterine fetal bone can significantly improve fertility outcomes, leading to spontaneous conception in affected patients.

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