Clinical consult – Unexpected pregnancy with intrauterine contraception in situ

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CASE

Dana is a 38 year old, Para 1 (previous uncomplicated caesarean section 1 year ago). She had a discussion about contraception with her midwife during pregnancy and planned to have a copper intrauterine device (IUD) inserted after her baby was born. She was provided with the progestogen-only pill before leaving the maternity unit and used this until attending her local sexual health clinic for IUD insertion eight weeks’ later. The patient reports this being in her words a ‘difficult’ insertion due to discomfort. Following insertion, she continued to have regular periods. Around 12 months’ after the IUD was inserted, she presents acutely with lower abdominal pain.

On further questioning, she reports having missed her most recent period. She had no vaginal bleeding and was otherwise clinically well. Repeat urinary pregnancy testing was positive. On examination, there was central lower abdominal tenderness but no guarding or rebound. On speculum examination the IUD threads were not visible.

INTRODUCTION

Intrauterine contraception (including the hormonal and non-hormonal IUD) is amongst the most effective at preventing pregnancy. Failure rates for the copper coil with a copper content >300mm² are between 0.1-1% in the first year of use and around 2.2% after 12 years¹. The 52mg levonorgestrel-releasing IUD has a pregnancy rate of 0.5 per 100 users over 5 years¹. However, as no method has 100% efficacy pregnancy should always be considered a possibility in any patient of reproductive years¹.

Table 1: Common risks of IUD insertion

<table>
<thead>
<tr>
<th>Risk</th>
<th>Rate</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Insertion-related pain</td>
<td></td>
<td>This side effect may be improved by post insertion NSAID¹</td>
</tr>
<tr>
<td>Device expulsion</td>
<td>1 in 20</td>
<td>Most common in first year of insertion¹</td>
</tr>
<tr>
<td>Uterine perforation</td>
<td>1-2 in 1000¹</td>
<td>Higher in the post natal period and breastfeeding women with a relative risk of 3 and 4.9 ⁵ Insertion can be delayed until 4 weeks postpartum to reduce the risk if not performed within 48 hours of delivery for the sake of convenience and compliance (assuming otherwise eligible)¹</td>
</tr>
<tr>
<td>Change in bleeding pattern</td>
<td>Variable</td>
<td>Depends on IUD selected – tend to resolve over 3-6 months ¹</td>
</tr>
<tr>
<td>Infection</td>
<td>1 in 100¹</td>
<td>Risk is procedure-related and mainly confined to the initial 20 days after insertion. Prophylactic antibiotics are not required even in those at risk of bacterial endocarditis¹</td>
</tr>
</tbody>
</table>

Causes of IUD failure

There are a number of clinical considerations when someone is found to have a positive pregnancy test in the context of a previous or recent IUD insertion. Differential diagnosis includes:

1. Device expulsion
2. Malposition

3. Perforation at insertion

4. True IUD failure

A thorough history and examination can provide clues as to the diagnosis. For example, if the patient reports a history of seeing an expelled device or the presence or absence of IUD threads. Most device expulsions happen within the first few weeks after insertion. For women using the copper IUD, sometimes expulsion can occur during heavy menses. The type of device is also helpful in devising a differential diagnosis. A hormonal IUD will often lead to lighter periods or amenorrhoea. A history of difficult or particularly painful insertion could raise the suspicion of a possible perforation, although perforation can occur in the absence of any particular signs.

A ‘malpositioned’ IUD is often only identified on ultrasound assessment. The clinical significance of a low-lying or malpositioned IUD in the absence of symptoms remains uncertain. Theoretically, a non-fundally placed IUD may be associated with reduced efficacy, although the evidence is limited as to when a device should be removed in this circumstance. Certain factors should be considered such as the type of device, its distance from the fundus, the patient’s symptoms and risks associated with removal and repeat insertion. An individualised approach to management is important and the patient should be fully informed and supported to make an individual choice.

One of the less common but important risks of using intrauterine contraception is ectopic pregnancy. The absolute risk of ectopic pregnancy with an IUD in situ is less than those using no contraception, with an overall risk of ectopic pregnancy in 5 years being 1 in 1000. If a pregnancy does occur the rate of ectopic is increased with some studies suggesting that half of pregnancies conceived whilst an IUD is in situ being an ectopic pregnancy. It is important to exclude this at the earliest opportunity in women presenting with a positive pregnancy test in the context of IUD use, even in the absence of other typical symptoms such as pain.

**MANAGEMENT**

*Figure 1*

If she decides to continue the pregnancy, there are risks associated with both leaving the IUD in place or removing this. It is known that removing the IUD can lead to miscarriage and even after it has been removed there is an increased risk of preterm labour (OR 10.8). Conversely leaving a foreign body in the uterus with a growing pregnancy carries a greater risk of pregnancy loss and can lead to infection (chorioamnionitis), Septic abortion (RR 2.7-6.1) and preterm labour (RR1.2 – 4.2).

There is no good evidence of birth defects linked to pregnancy with IUD (hormonal or non-hormonal) in situ. Overall, early removal of the device is linked with the best outcomes for pregnancy but a key consideration is the IUD position. Removal is usually attempted when the pregnancy is above the IUD and expected to be straightforward. Some studies suggest that ultrasound-guided removal of IUD where the threads have retracted could be considered, however this is controversial as there is a hypothetical risk of disrupting the pregnancy.

If she decides to proceed with abortion, she would be eligible for either a medical or surgical procedure in line with local guidelines and gestational limits. This includes the option of a medical abortion at home (EMAH). If she is seen in-person by the abortion service, the IUD can be removed at time of the initial assessment, if the device is located below the gestation sac on ultrasound and
the threads are easily visible on speculum examination. If the IUD is above the gestation sac, or a more complex removal procedure is anticipated, the device should be left in situ and removal can be attempted once the abortion is complete. If the patient plans to proceed to surgical abortion, the IUD can be removed at the same time as the pregnancy.

If the IUD has not been removed before a medical abortion, attention should be paid to whether or not the IUD passes during the expulsion of the pregnancy. If this is clearly seen then no further follow-up of the IUD is required. If the device is not seen during medical abortion, a repeat ultrasound should be arranged to confirm if it is still present and subsequent IUD removal performed in the most appropriate setting. In the absence of visible threads, this may involve referral to a specialist sexual health service.

**PATIENT OUTCOME**

Dana was referred urgently to the local early pregnancy service. She remained clinically stable and an ultrasound scan revealed a viable intrauterine pregnancy of six weeks gestation, with the IUD sitting low in the uterus.

Dana did not wish to continue the pregnancy and was referred for abortion. After a discussion about her options she wished to proceed with an EMAH. IUD removal was not attempted as the threads were not visible on speculum examination, but she was counselled about what to look out for during the procedure.

She went on to have an uncomplicated EMAH and confirmed that she saw the IUD pass at home. She have another intrauterine method, but this time opted for a hormonal IUD. A follow-up appointment was arranged for her to have this inserted in the local sexual health clinic two weeks’ following a negative follow-up pregnancy test.

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Figure 1: Management of pregnancy with suspected IUD in situ
References


