100 Cases in Obstetrics and Gynaecology

Cecilia Bottomley and Janice Rymer

Series Editor: P John Rees
100 CASES
in Obstetrics and Gynaecology
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Learning in medicine has gradually moved away from an apprentice system to a more structured course format. Advances have been made with the use of simulated cases, problem-based learning and electronic learning resources; however, this has led to a separation of the learning environment from the clinical art of real medicine.

This book aims to redress the balance with entirely clinical cases, highlighting the history and examination features with salient investigations. This allows the reader to place themselves in the position of the practising doctor encountering these scenarios in the everyday clinical setting.

Obstetrics and gynaecology involves the same clinical reasoning as other specialties covered in this series, but several points should be highlighted. First most patients seen in obstetrics and gynaecology are generally fit and healthy. As such they will withstand cardiovascular insults such as haemorrhage very effectively by increasing cardiac output. Signs of tachycardia and hypovolaemia may be late and signify severe compromise. Second, there are many physiological changes in pregnancy and normal ranges therefore alter. Where indicated, normal values for pregnant and non-pregnant women have been included. Finally, many abnormalities in obstetrics and gynaecology are picked up during ‘routine’ care. This book therefore differs from those of Clinical Medicine and Surgery in that women do not always ‘present’ with a problem, but one may be detected through, for example, routine antenatal care or during a cervical smear investigation.

The cases are grouped into broad categories with random ordering of cases within each category to mimic the way cases present in clinical practice.

We have written this book with both clinicians and medical students in mind, with cases varying in complexity, to reinforce common or important subject areas. We hope they will stimulate and challenge as well as build confidence for those working in or learning obstetrics and gynaecology.

Cecilia Bottomley
Janice Rymer
January 2008
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ABBREVIATIONS

AFP  alpha-fetoprotein
APH  antepartum haemorrhage
APTT activated partial thromboplastin time
ARM artificial rupture of membranes
BMI  body mass index
BV  bacterial vaginosis
CIN cervical intraepithelial neoplasia
COCP combined oral contraceptive pill
CT computerized tomography
CTG cardiotocograph
CTPA computerized tomography pulmonary angiogram
CVS chorionic villous sampling
DCDA dichorionic diamniotic
DIC disseminated intravascular coagulopathy
DUB dysfunctional uterine bleeding
EAS external anal sphincter
ECG electrocardiogram
EIA enzyme immunoassay
ERPC evacuation of retained products of conception
FBS fetal blood sampling
FSH follicle-stimulating hormone
FTA-abs treponemal antibody-absorbed (test)
GBS group B streptococcus
GDM gestational diabetes mellitus
GP general practitioner
Hb  haemoglobin
HCG human chorionic gonadotrophin
HELLP haemolysis, elevated liver enzymes and low platelets
HIV human immunodeficiency virus
HRT hormone replacement therapy
IAS internal anal sphincter
Ig  immunoglobulin
INR international normalized ratio
IUCD intrauterine contraceptive device
IUS intrauterine system
IVF in vitro fertilization
LLETZ large-loop excision of the transformation zone
LH luteinizing hormone
LMP last menstrual period date
MCH mean cell haemoglobin
MoM multiples of the median
MRI magnetic resonance imaging
Abbreviations

NT nuchal translucency
OAB overactive bladder syndrome
OC obstetric cholestasis
PCA patient-controlled analgesia
PCOS polycystic ovarian syndrome
PE pulmonary embolism
PIH pregnancy-induced hypertension
PMB postmenopausal bleeding
PMS premenstrual syndrome
POP progesterone only pill
PPH postpartum haemorrhage
PUL pregnancy of unknown location
RDS respiratory distress syndrome
SLE systemic lupus erythematosus
SPD symphysiopelvic dysfunction
STI sexually transmitted infection
TCRF transcervical resection of a fibroid
TEDS thromboembolic stockings
TIBC total iron-binding capacity
TPN total parenteral nutrition
TSH thyroid-stimulating hormone
T₃ tri-iodothyronine
T₄ thyroxine
UTI urinary tract infection
VBAC vaginal birth after Caesarean
VDRL venereal disease research laboratory (test)
VTE venous thromboembolism
WHO World Health Organization
CASE 1: INTERMENSTRUAL BLEEDING

History
A 48-year-old woman presents with intermenstrual bleeding for 2 months. Episodes of bleeding occur any time in the cycle. This is usually fresh red blood and much lighter than a normal period. It can last for 1–6 days. There is no associated pain. She has no hot flushes or night sweats. She is sexually active and has not noticed vaginal dryness.

She has three children and has used the progesterone only pill for contraception for 5 years.

Her last smear test was 2 years ago and all smears have been normal. She takes no medication and has no other relevant medical history.

Examination
The abdomen is unremarkable. Speculum examination shows a slightly atrophic-looking vagina and cervix but there are no apparent cervical lesions and there is no current bleeding.

On bimanual examination the uterus is non-tender and of normal size, axial and mobile. There are no adnexal masses.

<table>
<thead>
<tr>
<th>INVESTIGATIONS</th>
<th>Normal range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Haemoglobin 12.7 g/dL</td>
<td>11.7–15.7 g/dL</td>
</tr>
<tr>
<td>White cell count 4.5 × 10^9/L</td>
<td>3.5–11 × 10^9/L</td>
</tr>
<tr>
<td>Platelets 401 × 10^9/L</td>
<td>150–440 × 10^9/L</td>
</tr>
</tbody>
</table>

Transvaginal ultrasound scan and hydrosonography is shown in Fig. 1.1.

Figure 1.1

Questions
• What is the diagnosis and differential diagnosis?
• How would you further investigate and manage this woman?
ANSWER 1

The diagnosis is of an endometrial polyp, as shown by the hydrosomography image (Fig. 1.1). These can occur in women of any age although they are more common in older women and may be asymptomatic or cause irregular bleeding or discharge. The aetiology is uncertain and the vast majority are benign. In this specific case all the differential diagnoses are effectively excluded by the history and examination.

Differential diagnosis for intermenstrual bleeding

- Cervical malignancy
- Cervical ectropion
- Endocervical polyp
- Atrophic vaginitis
- Pregnancy
- Irregular bleeding related to the contraceptive pill

Management

Any woman should be investigated if bleeding occurs between periods. In women over the age of 40 years, serious pathology, in particular endometrial carcinoma, should be excluded. The polyp needs to be removed for two reasons:

1. to eliminate the cause of the bleeding
2. to obtain a histological report to ensure that it is not malignant.

Management involves outpatient or day case hysteroscopy, and resection of the polyp under direct vision using a diathermy loop or other resection technique (Fig. 1.2). This allows certainty that the polyp had been completely excised and also allows full inspection of the rest of the cavity to check for any other lesions or suspicious areas. In some settings, where hysteroscopic facilities are not available, a dilatation and curettage may be carried out with blind avulsion of the polyp with polyp forceps. This was the standard management in the past but is not the gold standard now, for the reasons explained.

Figure 1.2 Hysteroscopic appearance of endometrial polyp prior to resection. See Plate 1 for colour image.

KEY POINTS

- Any woman over the age of 40 years should be investigated if bleeding occurs between the periods, to exclude serious pathology, in particular endometrial carcinoma.
- Hysteroscopy and dilatation and curettage is rarely indicated for women under the age of 40 years.
CASE 2: INFERTILITY

History
A 31-year-old woman has been trying to conceive for nearly 3 years without success. Her last period started 7 months ago and she has been having periods sporadically for about 5 years. She bleeds for 2–7 days and the periods occur with an interval of 2–9 months. There is no dysmenorrhoea but occasionally the bleeding is heavy.

She was pregnant once before at the age of 19 years and had a termination of pregnancy. She had a laparoscopy several years ago for pelvic pain, which showed a normal pelvis.

Cervical smears have always been normal and there is no history of sexually transmitted infection.

The woman was diagnosed with irritable bowel syndrome when she was 25, after thorough investigation for other bowel conditions. She currently uses metoclopramide to increase gut motility, and antispasmodics.

Her partner is fit and well, and has two children by a previous relationship. Neither partner drinks alcohol or smokes.

<table>
<thead>
<tr>
<th>INVESTIGATIONS</th>
<th>Normal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Follicle-stimulating hormone</td>
<td>3.1 IU/L</td>
</tr>
<tr>
<td>Luteinizing hormone</td>
<td>2.9 IU/L</td>
</tr>
<tr>
<td>Day 21 progesterone</td>
<td>12 nmol/L</td>
</tr>
<tr>
<td>Prolactin</td>
<td>1274 mu/L</td>
</tr>
<tr>
<td>Testosterone</td>
<td>1.4 nmol/L</td>
</tr>
<tr>
<td>Thyroid-stimulating hormone</td>
<td>4.1 mu/L</td>
</tr>
<tr>
<td>Free thyroxine</td>
<td>17 pmol/L</td>
</tr>
<tr>
<td></td>
<td>Day 2–5</td>
</tr>
<tr>
<td></td>
<td>1–11 IU/L</td>
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<tr>
<td></td>
<td>Day 2–5</td>
</tr>
<tr>
<td></td>
<td>0.5–14.5 IU/L</td>
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<tr>
<td></td>
<td>90–520 mu/L</td>
</tr>
<tr>
<td></td>
<td>0.8–3.1 nmol/L</td>
</tr>
<tr>
<td></td>
<td>0.5–7 mu/L</td>
</tr>
<tr>
<td></td>
<td>11–23 pmol/L</td>
</tr>
</tbody>
</table>

Questions
• What is the diagnosis and its aetiology?
• How would you further investigate and manage this couple?
ANSWER 2

The infertility is secondary to anovulation as shown by the day 21 progesterone (>30 nmol/L suggests ovulation has occurred). Normal testosterone and gonadotrophins and high prolactin suggest the likely case of anovulation is hyperprolactinaemia. Hyperprolactinaemia may be physiological in breast-feeding, pregnancy and stress. The commonest causes of pathological hyperprolactinaemia are tumours and idiopathic hypersecretion, but it may also be due to drugs, hypothyroidism, ectopic prolactin secretion or chronic renal failure. In this case the metoclopramide is the cause, as it is a dopamine antagonist (dopamine usually acts via the hypothalamus to cause inhibition of prolactin secretion, and if this is interrupted, prolactin is excreted to excess). Galactorrhoea is not a common symptom of hyperprolactinaemia, occurring in less than half of affected women.

### Drugs associated with hyperprolactinaemia (due to dopamine antagonist effects)

- Metoclopramide
- Phenothiazines (e.g. chlorpromazine, prochlorperazine, thioridazine)
- Reserpine
- Methyldopa
- Omeprazole, ranitidine, bendrofluazide (rare associations)

The metoclopramide should be stopped and the woman reviewed after 4–6 weeks to ensure that the periods have restarted and that the prolactin level has returned to normal. If this does not occur, then further investigation is needed to exclude other causes of hyperprolactinaemia such as a pituitary micro- or macro-adenoma. It would be advisable to repeat the day 21 progesterone level to confirm ovulatory cycles. The woman should have her rubella immunity checked and should be advised to take preconceptual folic acid until 12 weeks of pregnancy.

If the woman fails to conceive then a full fertility investigation should be planned with semen analysis and tubal patency testing (hysterosalpingogram or laparoscopy and dye test).

### KEY POINTS

- A full drug history should be elicited in women with amenorrhoea or infertility.
- Galactorrhoea occurs in less than half of women with hyperprolactinaemia.
- Day 21 progesterone over 30 nmol/L is suggestive of ovulation.
CASE 3: AMENORRHOEA

History
A 32-year-old woman complains that she has not had a period for 3 months. Four home pregnancy tests have all been negative. She started her periods at the age of 15 years and until 30 years she had a normal 27-day cycle. She had one daughter by normal delivery 2 years ago, following which she breast-fed for 6 months. After that she had normal cycles again for several months and then her periods stopped abruptly. She was using the progesterone only pill for contraception while she was breast-feeding and stopped 6 months ago as she is keen to have another child. She reports symptoms of dryness during intercourse and has experienced sweating episodes at night as well as episodes of feeling extremely hot at any time of day. There is no relevant gynaecological history. The only medical history of note is that she has been hypothyroid for 10 years and takes thyroxine 100 μg per day. She does not take any alcohol, smoke or use recreational drugs.

Examination
Examination findings are unremarkable

<table>
<thead>
<tr>
<th>INVESTIGATIONS</th>
<th>Normal range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Haemoglobin</td>
<td>12.2 g/dL</td>
</tr>
<tr>
<td>White cell count</td>
<td>5.1 × 10⁹/L</td>
</tr>
<tr>
<td>Platelets</td>
<td>203 × 10⁹/L</td>
</tr>
<tr>
<td>Thyroid-stimulating hormone</td>
<td>3.6 mu/L</td>
</tr>
<tr>
<td>Free thyroxine</td>
<td>28 pmol/L</td>
</tr>
<tr>
<td>Follicle-stimulating hormone</td>
<td>45 IU/L</td>
</tr>
<tr>
<td>Luteinizing hormone</td>
<td>30 IU/L</td>
</tr>
<tr>
<td>Prolactin</td>
<td>401 mu/L</td>
</tr>
<tr>
<td>Oestradiol</td>
<td>87 pmol/L</td>
</tr>
<tr>
<td>Testosterone</td>
<td>2.3 nmol/L</td>
</tr>
<tr>
<td></td>
<td>11.7–15.7 g/dL</td>
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<tr>
<td></td>
<td>3.5–11 × 10⁹/L</td>
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<tr>
<td></td>
<td>150–440 × 10⁹/L</td>
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<tr>
<td></td>
<td>0.5–7 mu/L</td>
</tr>
<tr>
<td></td>
<td>11–23 pmol/L</td>
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<tr>
<td></td>
<td>Day 2–5</td>
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<tr>
<td></td>
<td>1–11 IU/L</td>
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<tr>
<td></td>
<td>Day 2–5</td>
</tr>
<tr>
<td></td>
<td>0.5–14.5 IU/L</td>
</tr>
<tr>
<td></td>
<td>90–520 mu/L</td>
</tr>
<tr>
<td></td>
<td>Day 2–5</td>
</tr>
<tr>
<td></td>
<td>70–510 pmol/L</td>
</tr>
<tr>
<td></td>
<td>0.8–3.1 nmol/L</td>
</tr>
</tbody>
</table>

Questions
- What is the diagnosis?
- What further investigations should be performed?
- What are the important points in the management of this woman?
ANSWER 3

This woman has symptoms of amenorrhoea as well as hypo-oestrogenic vasomotor symptoms and vaginal dryness. The diagnosis is of premature menopause, confirmed by the very high gonadotrophin levels. High levels occur because the ovary is resistant to the effects of gonadotrophins, and negative feedback to the hypothalamus and pituitary causes increasing secretion to try and stimulate the ovary. Sheehan’s syndrome (pituitary necrosis after postpartum haemorrhage) would also cause amenorrhoea but would have inhibited breast-feeding and all menstruation since delivery.

Premature menopause (before the age of 40 years) occurs in 1 per cent of women and has significant physical and psychological consequences. It may be idiopathic but a familial tendency is common. In some cases it is an autoimmune condition (associated with hypothyroidism in this case). Disorders of the X chromosome can also be associated.

**Effects of premature menopause**

- **Hypo-oestrogenic effects:**
  - vaginal dryness
  - vasomotor symptoms (hot flushes, night sweats)
  - osteoporosis
  - increased cardiovascular risk
- **Psychological and social effects:**
  - infertility
  - feeling of inadequacy as a woman
  - feelings of premature ageing and need to take hormone-replacement therapy (HRT)
  - impact on relationships

**Further investigations**

Repeat gonadotrophin level is required to confirm the result and exclude a midcycle gonadotrophin surge or fluctuating gonadotrophins. Bone scan is necessary for baseline bone density and to help in monitoring the effects of hormone replacement. Chromosomal analysis identifies the rare cases of premature menopause due to fragile X syndrome or Turner’s syndrome mosaicism.

**Management**

Osteoporosis may be prevented with oestrogen replacement, with progesterone protection of the uterus. Traditional HRT preparations or the combined oral contraceptive pill are effective, the latter making women feel more ‘normal’, with a monthly withdrawal bleed and a ‘young person’s’ medication.

Her options are adoption, accepting childlessness and in vitro fertilization (IVF) with donor oocytes.

Occasionally premature menopause is a fluctuating condition (resistant ovary syndrome) whereby the ovaries may function intermittently. Contraception should therefore be used if it would be undesirable to become pregnant.

Patient support organizations are a good source for women experiencing such an unexpected and stigmatizing diagnosis.

**KEY POINTS**

- Premature menopause (<40 years) occurs in 1 per cent of women.
- Oestrogen replacement is essential for bone and cardiovascular protection.
- It may be possible to conceive with IVF using donor oocytes.
CASE 4: INFERTILITY

History
A 29-year-old woman and her partner are seen in the gynaecology outpatient clinic with primary infertility. They stopped using condoms 2 years ago and have had regular intercourse since then. The partner has no previous medical history of note. He drinks approximately 8 units of alcohol per week and does not smoke. He works as a manager in a hotel.

The woman also has no specific previous medical history except for an appendectomy aged 12 years. Her periods occur every 31 to 46 days and can be heavy at times but not painful. There is no intermenstrual or postcoital bleeding. She has always had normal smears and has never had any sexually transmitted infections. She takes no medications, drinks approximately 6 units of alcohol per week and does not smoke.

Examination
On examination her body mass index (BMI) is 29 kg/m². She has slight acne on her face and her chest.

There are no abdominal scars and the abdomen is non-tender with no masses palpable. Speculum and bimanual examination are normal.

<table>
<thead>
<tr>
<th>INVESTIGATIONS</th>
<th>Normal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Day 3 luteinizing hormone (LH)</td>
<td>6.2 IU/L</td>
</tr>
<tr>
<td>Day 3 follicle-stimulating hormone</td>
<td>3.1 IU/L</td>
</tr>
<tr>
<td>Testosterone</td>
<td>4.1 nmol/L</td>
</tr>
<tr>
<td>Day 21 progesterone</td>
<td>15 nmol/L</td>
</tr>
</tbody>
</table>

A transvaginal ultrasound scan is shown in Fig. 4.1.

Questions
- What is the diagnosis?
- How would you further investigate and manage this woman?

Figure 4.1 Transvaginal ultrasound scan.
The diagnosis is of anovulatory infertility due to polycystic ovarian syndrome (PCOS). Anovulation is shown by the progesterone level below 30 nmol/L, and PCOS is suggested by several features including increased BMI, acne, oligomenorrhoea, polycystic ovaries on transvaginal ultrasound examination, increased androgen levels and increased LH.

‘Polycystic ovaries’ (a morphological description of enlarged ovaries with an increased number of follicles and dense stroma) is present in up to 25 per cent of normal women. The diagnosis of PCOS is made on any combination of characteristic clinical, biochemical and ultrasound features.

PCOS is one of the commonest causes of infertility. However, up to 30 per cent of sub-fertile couples have a multifactorial cause for their problem. Hence complete investigation of both partners is essential prior to treating the PCOS. This includes:

- semen analysis
- tubal patency test (hysterosalpingogram is usually sufficient)
- laparoscopy and dye test if pelvic inflammatory disease, adhesions or endometriosis are suggested from the history.

Testing for rubella is also necessary, as is a recommendation to take folic acid if this is not already taken. Other general advice includes minimizing alcohol intake, avoiding smoking and ensuring regular intercourse (preferably 2–3 times per week). The woman should aim to reduce weight as this commonly induces ovulation in high-BMI women with PCOS.

**Treatment of anovulation**

Clomifene citrate is the main treatment to induce ovulation. The woman should be given 50 mg to take on day 2–6 of the menstrual cycle, with day 21 progesterone checked to confirm ovulation. If ovulation occurs, then the clomifene is continued for up to six cycles unless pregnancy occurs. If ovulation is not confirmed then the dose is increased to 100 mg.

It is not recommended to take clomifene for more than 6 months, due to a theoretical increased risk of ovarian carcinoma. If clomifene fails, then further ovulation induction agents and IVF need to be considered.

**KEY POINTS**

- Irregular periods are commonly due to polycystic ovarian syndrome.
- The syndrome is diagnosed on a combination of clinical, biochemical and ultrasound features.
- Many cases of subfertility are multifactorial or involve both partners, so full investigation of both is important prior to treatment.
CASE 5: INFERTILITY

History
A 37-year-old woman is seen in the clinic because of infertility. She is gravida 3 para 1 having had a daughter 13 years ago and a miscarriage 2 years later. She separated from her former husband and has now married again and is keen to conceive, especially as her new partner has no children.

Her last period started 45 days ago. She says that her periods are sometimes regular but at other times she has missed a period for up to 3 months. The bleeding is moderate and lasts up to 4 days. There is no history of pelvic pain or dyspareunia, and no irregular bleeding or discharge. Alcohol intake is minimal and she does not smoke or take other drugs. There is no medical history of note and she takes no regular medication.

Her partner is 34 years old and is also fit and healthy with no significant history of ill-health or medications.

Examination
There are no abnormal features on examination of either partner.

<table>
<thead>
<tr>
<th>INVESTIGATIONS (DURING THE NEXT MENSTRUAL CYCLE)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Normal</strong></td>
</tr>
<tr>
<td><strong>Day 3 follicle-stimulating hormone (FSH)</strong></td>
</tr>
<tr>
<td>11.1 IU/L Day 2–5</td>
</tr>
<tr>
<td>1–11 IU/L Day 2–5</td>
</tr>
<tr>
<td><strong>Day 3 luteinizing hormone</strong></td>
</tr>
<tr>
<td>6.8 IU/L Day 2–5</td>
</tr>
<tr>
<td>0.5–14.5 IU/L Day 2–5</td>
</tr>
<tr>
<td><strong>Prolactin</strong></td>
</tr>
<tr>
<td>305 mu/L Day 2–5</td>
</tr>
<tr>
<td>90–520 mu/L Day 2–5</td>
</tr>
<tr>
<td><strong>Testosterone</strong></td>
</tr>
<tr>
<td>1.3 nmol/L Day 2–5</td>
</tr>
<tr>
<td>0.8–3.1 nmol/L Day 2–5</td>
</tr>
<tr>
<td><strong>Day 21 progesterone</strong></td>
</tr>
<tr>
<td>23 nmol/L</td>
</tr>
</tbody>
</table>

**Semen analysis report**: normal volume, count, normal forms and motility.

**Hysterosalpingogram report**: the uterine cavity is of normal shape with a smooth regular outline. Contrast medium is seen to fill both uterine tubes symmetrically and free spill of dye is confirmed bilaterally.

**Transvaginal ultrasound scan report**: the uterus is anteverted with no congenital abnormalities, uterine fibroids or polyps visualized. Both ovaries are of normal morphology, volume and mobility. No follicles are noted.

Questions
• What is the cause of the infertility?
• What are the further investigation and management options?
ANSWER 5

Women with irregular periods often do not ovulate. Anovulation in this case is confirmed by the low day 21 progesterone level. The commonest cause of anovulation is polycystic ovaries, but in this case the ovaries show normal morphology and the androgen levels are normal.

The noticeable abnormality is the high FSH level and the fact that no follicles are visualized at ultrasound scan. This is suggestive of anovulation from premature failure of ovarian function. The woman is not menopausal because she still has periods although irregular, and the FSH is only marginally raised. However it is known that FSH levels above 10 IU/L are associated with a poor prognosis for conception using the woman’s own ova.

Further investigation.
The FSH should be repeated, as it is possible that this could be a sporadic result or poorly timed sample, and therefore confirmation is needed before continuing on to treatment.

Management
As there is such a poor prognosis for conception either naturally or with in vitro fertilization using the woman’s own ova, she should be counselled about assisted conception using donor eggs. Donated oocytes are fertilized with the partner’s sperm and then implanted into the uterus. The woman needs appropriate luteal phase support, most commonly with progesterone pessaries.

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Counselling issues for this couple

- **Psychological:**
  - the woman may feel that her ovaries are ‘ageing’ prematurely and this may have an affect on her self-esteem and sexuality
  - the stress associated with assisted conception is significant and many couples find that this in itself puts a large burden on their relationship.
- **Funding:** public funding may not be available as the woman already has one child.
- **Consideration of alternative options:** adoption, surrogacy and accepting childlessness should be explored with the couple.

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KEY POINTS

- FSH above 10 IU/L is associated with poor prognosis for fertility.
- Infertile couples should be encouraged to explore all options, including accepting childlessness and adoption as well as assisted conception techniques.