



The ROYAL
SOCIETY *of*
MEDICINE

Made for students by students

Pastes⁺

Introduction from the editors

'Hello, The Royal Society of Medicine's educational booklets aim to provide medical students with a better insight into the fundamentals and realities of different specialties.

Compiled by medical students from across the country, this edition includes submissions from specialty experts, case-reports from real clinical situations and a whole menagerie of feature articles.

On behalf of the Society, we would like to thank all our contributors and hope you enjoy the fruits of their labour.'

William Ries past President, Student Section

Why obstetrics and gynaecology

Expert view

Name: Professor Khaled Ismail
Interview and write up by William Ries

A career in obstetrics and gynaecology

Professor Ismail was first immersed in the world of obstetrics and gynaecology whilst completing an elective-like placement at Birmingham Women's Hospital as a medical student. Noting the range and diversity of clinical practice the specialty offers, and the dramatic changes intervention in this branch of medicine can make, Professor Ismail knew then that this would be his future specialty.

Now a professor of obstetrics and gynaecology at the University of Birmingham, the same aspects of the career he saw as a medical student still enthuse him today. One of the most appealing features is the intimacy with which one is involved in the maternity process. The doctor has the privilege of trying to ensure a healthy outcome during a very poignant time for the family – the birth of their child.

What's more, the sheer diversity of clinical skills that the specialty encompasses will make for a varied career. Professor Ismail points out that the doctor must not only act medically as a physician, but also surgically. Added into the mix are the specialist skills unique to the field, such as the birth process. Without doubt, for those interested in both medicine and surgery, a career in obstetrics and gynaecology offers an unparalleled opportunity to be involved in both.

Pursuing a career in obstetrics and gynaecology also allows getting involved in a field where there is huge depth and breadth in the research being done. Professor Ismail states that the specialty, obstetrics in particular, has always been at the forefront of academic research. It was one of the first specialties to truly embrace evidence based medicine as it sought to improve outcomes for both baby and mother. Whilst also researching childbirth associated perineal trauma, Professor Ismail has pioneered the concept of development of Safeceps™ - a regulated obstetrics forceps that measures both contraction and compression force in real time.

Not only can one improve the lives of women here in the UK, but also worldwide. Maternity care in many areas of the world remains substandard and thus the specialty lends itself to international travel and global health related projects. Indeed, Professor Ismail's recent activities involve an extended trip to the West Bank where he was actively involved, with an international team of experts, in training healthcare professionals in a difficult environment of limited resources.

A career in obstetrics and gynaecology, such as Professor Ismail's, will certainly be very diverse. Whilst getting the best of what surgery and medicine can offer, you'll also have the delight of being involved in the most important time of motherhood – birth.

Many thanks to Professor Khaled Ismail for his time and informative words, on behalf of the RSM Students Section.

Why obstetrics and gynaecology

Student view

Name: Hannah Pierce

Title: So why obstetrics and gynaecology?

Sat on my flight back to the UK after two weeks enjoying the sun, I thought now was a good a time as any to think about what keeps me coming back for more hardwork and the long hours of medicine. The answer, for me personally, is the oppotrtnity to work towards a satisfying career in obstetrics and gynaecology and the challenges it will bring me.

But what in particular makes me passionate about obstetrics and gynaecology? I have always wanted to be a doctor, there was no thunderbolt moment of realisation, it was just what I was going to be. My problem then was that I enjoyed all the areas of medicine that I encountered. I like the precision and practicality of surgery, the puzzle of diagnosing in medicine and the challenge of quick actions in emergency medicine. Add to this a strong desire to partake in research and medical education and I had no idea which speciality would best suit me (although there was always an inkling that it would be obstetrics and gynaecology).

This year I finally got to spend a substantial period of time on placement in obstetrics and gynaecology and it confirmed what I had thought, that it is the speciality for me. It has surgery, both laparoscopic and open. It has medicine with often difficult disgnostic cases. It has plenty of acute medicine and also the need for strong practical skills on the labour ward. And it has plenty of areas for further research and development as laparoscopic surgery takes off, more procedures being done as outpatients and our clinical practice changing all the time. In essence it has variety and this is what appeals to me most. Especially as the variety continues even as a consultant, something that I've found is becoming rarer as consultant posts become more and more superspecialised.

I chose medicine as a career because I will never know what my day will bring and to be able to have lots of projects and interests on the go at any one time. This mixed with my desire to be in a very practical based speciality and my passion for underlying science make obstetrics and gynaecology exactly the right fit for me.

Many thanks to Hannah Pierce, on behalf of the RSM Students Section.

An elective in obstetrics in the solomon islands, May 2015

By Molly Stewart

"With regret, the Captain and his cabin crew would like to inform you that this flight will be turning around due to a tsunami warning." As I reached across to look out of the plane window at the sparkling blue water and petite tropical islands beneath, it was hard to imagine a tsunami engulfing the tropical islands below. Fortunately, this warning only meant a short 24 hour wait in Brisbane airport before flights resumed to the Solomon Islands and I could finally begin my much awaited and anticipated elective.

I had chosen to travel to the Solomon Islands for a variety of reasons, mainly to observe and learn about medicine in a developing country, with the extra bonus of adding some colour to my pale and pasty post-exams complexion. Having completed an intercalation research project in obstetric and fetal medicine under inspirational supervisors, my small exposure to the labour ward had grabbed my attention and drawn me to want to explore and experience it in a developing country.

After a delayed journey, I was keen to head straight to the labour ward and get stuck into 'labour ward life'. The first morning began with a tour of the labour, antenatal and post-natal wards and a formal introduction to some of the midwives that I would be shadowing and working alongside for the next four weeks. Before I knew it, I had been whisked off to one of the labour rooms to observe a lady in the early stages of delivery. As the adrenaline kicked in, I immersed myself in the labour, encouraging the woman to squeeze my hand when she had a contraction, whilst wiping her forehead with a cold wet cloth. As lunchtime drew closer, the combination of humidity, temperatures of over 32 and jet-lag, all became a bit too much and resulted in me, unhelpfully, passing out in a big heap on the labour suite floor. Without batting an eyelid, the chief midwife gathered the pile up and tidied me away into a dark cupboard with a glass of water and a banana to sleep off my fainting episode. I had read about the kind and caring nature of the people of the Solomon Islands and this quickly became apparent when I woke up to find one of the midwives rushing to the cupboard door to prevent a colleague coming in; "be careful, white girl sleeping" she warned him off with.

After an eventful first day, the following four weeks past in a sunny haze of excitement and deliveries. The trust that the midwives placed in my limited skills was phenomenal, allowing me to complete many vaginal examinations, monitoring pregnant women through all stages of their labour and helping out with the deliveries. I quickly learnt that the Solomon Islands operated according to 'Island time' and by the end of the first week I felt fully at home with this new and relaxed approach. As my confidence grew, one of the midwives I particularly enjoyed working with, encouraged me to deliver a baby on my own. As a kaleidoscope of butterflies entered my stomach, I tried to focus all my attention on the woman, her quickly progressing labour and the small task of not hurting or dropping her precious newborn infant. After this successful delivery, it gave me the confidence to deliver a second baby on my own and assist with many more births. Without the belief from the midwives, I would never have been brave enough to deliver a baby on my own. The experiences and memories from my elective period on the labour ward are some that I will treasure for many years to come. The time I spent with the midwives in the Solomon Islands has not only further helped cement my passion for obstetric medicine but has also given me the opportunity to reflect on the similarities and differences between the UK and the Solomon Islands. I feel incredibly lucky to have had this experience and very much hope to return in the future.

I was working at the National Referral Hospital in Honiara in the Solomon Islands. This is a 400 bed hospital, where approximately 3,000 – 4,000 deliveries take place every year. There are approximately 100 caesarean sections performed per year. Access to obstetric care is severely limited and affected by being a country made up of lots of small islands. In 2012, the National Referral Hospital had a total of 50 doctors, with approximately five obstetricians. The hospital condition varied from department to department, as the standard of facilities and quantity of equipment was dependent on donations and funding from other countries. The health care provided to the residents of the Solomon Islands is publically funded, with the government providing 80% of the total fund and the remaining 20% provided from international development partners (New Zealand, Australia, Japan, ROC Taiwan and the European Union).



Pastest questions 1, 2 and 3

Question 1:

A 48 year old woman comes to the menopausal clinic complaining of severe vasomotor symptoms of hot flushes and night sweats. She is extremely anxious about going on HRT as she had a DVT when she was pregnant, 20 years ago. However, she has been fine ever since and has required no long-term treatment. She has read in the papers that HRT increases the risk of getting a clot. She has no other risk factors.

What is the best form of HRT for her?

- A) Oral continuous combined HRT
 - B) Oral sequential combined HRT
 - C) Raloxifene
 - D) Tibolone
 - E) Transdermal combined HRT patches
-

Question 2:

A 26 year old woman and her 28 year old partner come to the GP surgery since they have been unable to conceive after fourteen months of trying for pregnancy. She gives a history of regular menstrual cycles every 28 days.

What is the best test to see whether she is ovulating?

- A) Basal body temperature estimation
 - B) Cervical fern test
 - C) Day 2 LH and FSH
 - D) Day 21 progesterone level
 - E) Endometrial biopsy
-

Question 3:

A 28 year old G1 P0 woman is brought to the emergency department by her husband at 10 weeks' gestation because she has been experiencing extreme morning sickness, palpitations and heat intolerance. Ultrasound of her uterus reveals a "snowstorm" appearance and complete lack of fetal tissue.

Which one of the following is most appropriate to monitor for successful treatment of this patient's condition?

- A) AFP
- B) hCG
- C) CA-125
- D) LDH
- E) Oestriol

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Answers can be found on the next page.

Answers page

Question 1

Correct Answer: E

Explanation:

Although the patient had a DVT in the past, this seems to have been related to her pregnancy. DVTs occurring during the presence of a known risk factor are less concerning down the line, when the risk factor has been removed. You would need to ensure that this patient has been screened for thrombophilia and has a normal clotting profile. The risk of DVT in the general population is 1 in 10,000 per year, which increases to 3 in 10,000 for those taking HRT.

Since there is no mention of hysterectomy in the history, oestrogen replacement therapy without a progesterone is out of the question, since this would place the patient at high risk of uterine malignancy. If HRT is the treatment required, a combined oestrogen/progestogen preparation would be necessary because the patient still has a uterus. The transdermal route seems to be best option here, since the drug bypasses the enterohepatic circulation, and hence reduces the effect on the hepatic clotting system.

Other things to consider would be whether the patient needs birth control and also what sort of medication best suits her. Will she forget to take tablets? Does she go swimming a lot (hence transdermal patches may not be best)? What fits into the lifestyle of the patient is becoming more and more important and there are now many preparations of HRT which are readily available to suit all lifestyles.

Raloxifene is a selective oestrogen receptor modulator (SERM), which has effects on lipids and bone, but does not stimulate the endometrium or breast. Tibolone is a progestin with mixed properties. It exerts tissue-specific activity through the enzymatic conversion of steroids in different body tissues.

Question 2

Correct Answer: D

Explanation:

Infertility is a common and distressing complaint. It can be divided into primary and secondary infertility. In primary infertility, a couple has never achieved a pregnancy, whereas in secondary infertility, pregnancy has previously occurred, but is no longer achievable. Investigation may then take the form of history, clinical examination, imaging studies such as ultrasound and hysterosalpingography and laboratory testing. For males, testing includes semen analysis. Investigations into the source of infertility should involve both males and females.

A day 21 progesterone level is the easiest test to check a female's ovulatory status. If day 21 progesterone results are more than 30 nmol/l in two cycles, then the patient is said to be ovulating. Other investigations into the cause of the infertility should be considered. Early referral should be considered if a woman is in her late thirties.

Question 3

Correct Answer: B

Explanation:

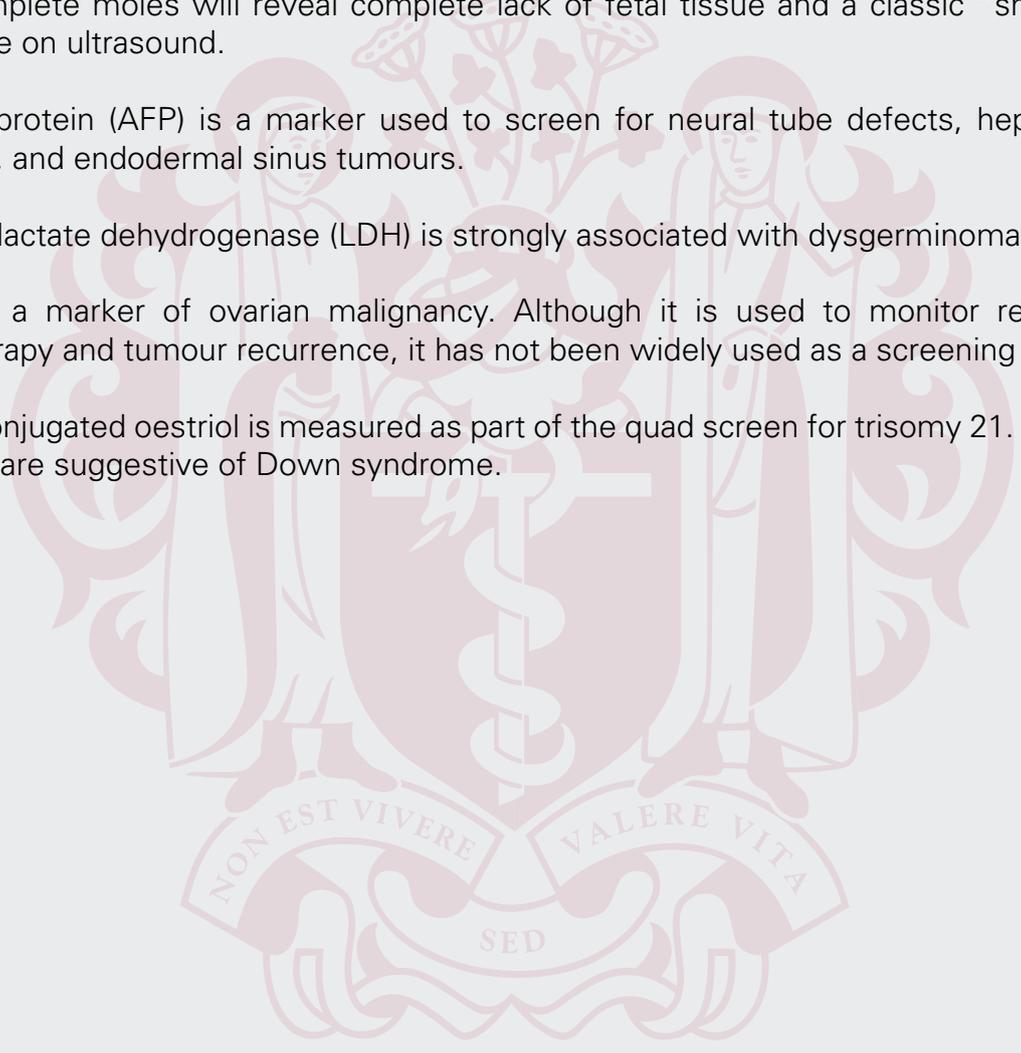
Extreme morning sickness, palpitations, and heat intolerance during the first 20 weeks of gestation suggest molar pregnancy. Approximately 90% of molar pregnancies are complete moles, which can present with morning sickness and symptoms of hyperthyroidism due to high levels of human chorionic gonadotropin (hCG). Both hCG and thyroid stimulating hormone (TSH) utilise the same alpha subunit and high levels of hCG can cross react at the TSH receptor, inducing a state of hyperthyroidism. Monitoring levels of -hCG is most appropriate for this patient to ensure that no fetal tissue remains after dilation and curettage or treatment with misoprostol and mifepristone to minimise the risk of developing choriocarcinoma or persistent mole. Complete moles will reveal complete lack of fetal tissue and a classic "snowstorm" appearance on ultrasound.

Alpha-fetoprotein (AFP) is a marker used to screen for neural tube defects, hepatocellular carcinoma, and endodermal sinus tumours.

Increased lactate dehydrogenase (LDH) is strongly associated with dysgerminomas.

CA-125 is a marker of ovarian malignancy. Although it is used to monitor response to chemotherapy and tumour recurrence, it has not been widely used as a screening tool.

Urine unconjugated oestriol is measured as part of the quad screen for trisomy 21. Low levels of oestriol are suggestive of Down syndrome.



Should Lamotrigine be used in the management of bipolar affective disorder during pregnancy and breastfeeding?

By Aayushi Pandya

Bipolar affective disorder (BPAD) is a long-term psychiatric condition characterised by episodes of unusual and extreme shifts in mood, otherwise termed manic or depressive mood episodes^[1]. These impact on various aspects of the individual's life^[2,3].

Hence, effective management of this condition through mood stabilisers and/or antipsychotics is essential to minimise the adverse implications arising from BPAD^[4].

Lamotrigine (LTG), an anticonvulsant mood stabiliser, is particularly useful at managing bipolar depression^[5].

Of interest, it is becoming more common for use in women of reproductive age. This is important because management of women with BPAD during and after pregnancy is amongst the most challenging clinical endeavours, as discontinuation of medication during pregnancy is associated with bipolar relapses. These could compromise maternal self-care, thereby resulting in maternal and fetal distress^[6,7].

In fact, a mood episode will occur in approximately 25-30% affected women during pregnancy^[8]. Postpartum, relapses could be life-threatening due to the development of puerperal psychosis which coincides with the hormonal shifts after delivery^[9], and its risks of maternal suicide and infanticide^[10]. Therefore, mood stabilizers, such as LTG, are important in reducing these risks by protecting against relapses^[11]. However, it must be noted that one fifth to one third of women might relapse in pregnancy in spite of mood stabilizers, so use of these drugs do not guarantee maternal protection^[12]. Furthermore, psychotropic drugs have been associated with numerous fetal malformations and developmental delays. Specifically, there is a debated increased incidence of cleft lip and/or palate with first-trimester LTG exposure^[13,14,15].

Postpartum, the decision to continue medication is complicated by breastfeeding, as psychotropic medications present in the breast milk (in varying concentrations)^[16] may impact unfavorably on the infant^[17,18]. Adverse reactions associated with LTG exposure have included: an isolated apneic episode^[19], mild thrombocytosis^[20] and rash^[21]. Rash is the most common side effect (6%) and although the majority associated with LTG are self-limiting and mild, there are certain potentially life-threatening rashes to be made aware of. These include toxic epidermal necrolysis and Steven-Johnson syndrome^[22]. Thus, the decision of breastfeeding in women with BPAD, especially whilst taking medications, should be made on evidence of risks and benefits to the mother and infant, alongside the potentially catastrophic risks of untreated illness. These should be discussed with the patient's healthcare provider(s)^[4].

In summary, the use of psychotropic medications (such as LTG) during pregnancy and breastfeeding is a complex clinical issue that requires numerous factors to be evaluated. Studies have deemed LTG as relatively safe regarding its reproductive risks^[4], in comparison to other medications used in BPAD, such as sodium valproate^[23,24,25], carbamazepine^[26,27] and lithium^[28,29]. Hence, with NICE-recommended monitoring^[30], LTG use during pregnancy is recommended if its associated benefits outweigh its potential risks. Of course, with limited available data on the long-term effects of LTG exposure during

pregnancy and breastfeeding [31], further research is required to confirm its deemed safety and ensure a reliable stance on its use over alternatives, such as atypical antipsychotics. Ultimately, however, the concluding decision is based on the clinical requirement of the mother's mental health versus the exposure of the fetus or infant to LTG, alongside any associated adverse effects.

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Perimortem caesarean section: What's the delay?

by Rob Willmore

Caesarean sections are older than history itself it seems, Ancient mythology tells the story of how the father of medicine, Asclepius, was delivered by his father Apollo. This was no normal birth, the baby was delivered straight from the abdomen of the dead nymph Koronis – and so the caesarean section was born. Numerous accounts of the caesarean section appear in modern history In 715 BC when the Roman King, Numus Pompilius decreed that no child should be buried within its mother. This was known as the Lex Regis, and was later translated into the Lex Cesare (the law of Caesar). More controversially a physician in Sicily was condemned to death in 1747 for not performing a post-mortem caesarean on a dying mother.

In 1985 guidelines surrounding the peri-mortem caesarean section (PMCS) changed – no longer was the procedure performed in an attempt to save the fetus' life when the mother was declared dead, but as an immediate lifesaving treatment to remove aorto-caval compression by the fetus to aid return of spontaneous circulation (ROSC). New guidelines suggested the decision for PMSC should be made after four minutes of maternal cardiac arrest and the baby delivered by five minutes. A review in 2003 revealed many case reports benefiting from this change in the guidance and MOET (managing obstetric emergencies and trauma) courses became compulsory for all pregnancy providers.

Perimortem Caesarean Section

What: Rapid "dirty" caesarean section

Who: >24 week gestation mother in cardiac arrest

Why: Key resuscitation treatment for mother – relieves aorto-caval compression applied by fetus

When: Decision to perform made at four minutes' post arrest, baby delivered by five minutes

Since guidance changed in 1985 have clinicians adhered to the 'five minute rule' and what factors have caused a delay in performing a PMSC following maternal cardiac-arrest? A literature search of all case reports of PMSC since 1985 was completed; 52 were identified. The primary outcome measure recorded was maternal ROSC and the relationship this had to timeliness of PMSC with close scrutiny of reason for the delay in the delivery if it occurred.

The mean time to delivery of the fetus in those that gained return of spontaneous circulation (ROSC) was 9.68 minutes compared with a mean time of 22.11 minutes in those who did not achieve ROSC. 79% (n=14) of those delivered within the required five minutes gained ROSC compared with 37% in those delivered after five minutes (RR 2.9474 95% CI 0.0501 to 8.2726 p=0.0401).

The cause of delay in those cases which did not achieve delivery within the target five minutes was not identified in the majority of cases (58%). Assessing the status of the foetus or equipment not being available for a PMCS was cited as causing delay in 20% of cases. Other reasons identified included awaiting arrival of obstetric clinicians in the emergency department, telephone advice, ultrasound scanning of the maternal heart and the section itself taking a long time to be completed.

Evidence shows that early PMCS is effective and clearly increases the likelihood of maternal ROSC. Critical evaluation of such events and detailed case report writing aids rare event research and future learning outcomes.

Turner syndrome and the risk of aortic dissection

by Rob Willmore

Turner syndrome is a genetic disease of females characterised by the removal or partial removal of the second sex chromosome^[1]. It most commonly presents with a classic pattern of short stature, ovarian failure and lymphedema^[1-3]. Turner syndrome is the most common genetic chromosomal disease in females, affecting between 1 in 2,000 to 2,500 live births^[3,4].

Pregnancy is becoming increasingly patients with Turners syndrome due to the increasing availability of new assisted reproductive techniques and spontaneous pregnancy occurring in a rare number of cases^[5]. Lin et al. reported 41 cases of aortic dissection in Turner Syndrome patients, of which two died suddenly during the third trimester of their pregnancy^[6]. Karnis et al. have estimated the incidence of dissection to be around 2% during pregnancy with Turner Syndrome^[7]. This contrasts with other reports of much lower incidence of around 40/100,000^[8]. The suggested increase in risk of dissection and other aortic complications posed by pregnancy has led to authors recommending cardiac screening for patients if they participate in artificial fertilisation programmes^[9].

The risk for acute aortic dissection in patients suffering with Turner syndrome is increased by over 100 fold compared to the normal population and this risk is further compounded by physiological changes observed during pregnancy^[7,10]. Despite being a rare complication the literature suggests that acute aortic dissection has a mortality rate of up to 86% in this group of patients who can present with a normal x-ray and non-specific ECG findings^[11-13].

It is less well known that dissection poses a significant risk to mortality of Turner's patients furthermore diagnosis remains difficult if no clinically significant findings are found^[7,11]. Continued periods of close observation should be provided for patients with rare presentations in the event that complications occur. Rapid diagnosis by CT and immediate transfer to definitive care may result in positive outcomes for patients despite high risks of foetal mortality.

There is a paucity of literature on the subject of dissection in adults with Turners and there are no case reports documenting survival from aortic dissection during pregnancy with the syndrome despite the author observing one such case in 2016^[10]. General practitioners and emergency physicians must be aware of the rare complications genetic conditions may present with as many are associated with very high mortality rates for both mother and foetus. A similar cautious approach should be taken with similar congenital conditions that present to the emergency department.

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Female genital mutilation and its painful consequences

by Aayushi Pandya

Imagine when you cut your finger, it's a million times worse than that. But that doesn't even begin to describe the type of pain that takes over when the part of your body that has the most nerve endings in it is cut away. – Aissa, Female Genital Mutilation Survivor^[1]

Female genital mutilation (FGM) is the 'partial or total removal of the external female genitalia or other injury to the female genital organs for non-medical reasons'. Most commonly performed between infancy and adolescence, the World Health Organization (WHO) classifies FGM into four types, as illustrated in Figure 1^[2]. Carried out for a range of social, cultural and religious reasons, FGM occurs primarily throughout Africa, but also in Asia and the Middle East, and within these communities elsewhere^[3]. In fact, UNICEF recently estimated at least 200 million women across 30 countries having undergone FGM^[4].

Type 1:	Partial or total removal of the clitoris and/or the prepuce (clithoridectomy)
Type 2:	Partial or total removal of the clitoris and the labia minora, with or without excision of the labia majora (excision)
Type 3:	Narrowing of the vaginal orifice with creation of covering seal by cutting and appositioning the labia minora and/or the labia majora, with or without excision of the clitoris (infibulation)
Type 4:	All other harmful procedures to the female genitalia for non-medical purposes, for example: pricking, piercing, incising, scraping and cauterization

Figure 1: Classification of FGM^[2]

Largely performed using objects like scissors, razor blades or broken glass, without adequate sterilization or anaesthetic, it is unsurprising that the consequences of FGM are severe. Immediately, these include: pain, hemorrhage, infection and urinary retention^[5].

Chronically, various systems in the body face challenges. Arguably, however, the most disabling complication is pain. Defined as 'an unpleasant sensory or emotional experience associated with actual or potential tissue damage, or described in terms of such damage'^[6], it encompasses physical, sexual and psychosocial pain. All of these result from FGM.

Long-term, physical pain manifests itself in multiple ways, beginning from painful scar formation^[7]. Poor urinary flow beneath this leads to urinary obstruction, which can cause considerable discomfort through recurrent urinary tract infections^[8] and urinary or vaginal calculi^[9]. The narrowed introitus also leads to persistent pain due to obstructing natural menstrual blood flow; this results in dysmenorrhea and haemocolpos^[10]. Additionally, a study in Nigeria demonstrated that women who had undergone FGM are 1.5 times as likely to report chronic abdominal pain^[11]. Moreover, studies have highlighted an associated increased risk of obstetric complications, such as perineal trauma, postpartum haemorrhage and prolonged labour^[12]. There is also an increased risk of stillbirth and neonatal death^[13].

Frequently, FGM is performed to minimize sexual desire and preserve virginity in the girl^[14]. Hence, damage to, or removal of, the clitoris (a known erotogenic area) would inevitably dull any sexual pleasure and would lead to sexual dysfunction^[15]. This is highlighted by a prospec-

tive case-control study in Saudi Arabia, which demonstrated statistically significant differences in satisfaction, orgasm, lubrication and arousal in women who had undergone FGM compared to those who had not^[16]. Notably, dyspareunia commonly results from vaginal narrowing and subsequent scar tissue in type 3 FGM^[7].

Various psychological sequelae are associated with FGM. First, the adult most trusted by the girl, her mother, is often responsible for subjecting the girl; this can be extremely challenging to reconcile with^[15]. Following, women are more prone to developing depression, anxiety and post-traumatic stress disorder; the latter involves the individual reliving their experience or having associated memory problems, as depicted by a study in Dakar^[17]. Moreover, there is an association between FGM and increased domestic violence, in Africa^[18,19].

Undoubtedly, persistent pain can be extremely disabling and should be managed appropriately under guidance from WHO^[20] and organisations such as Pain Concern^[21]. This may include the process of de-infibulation^[5], as well as psychological counselling and support groups, to minimize the pain of FGM in all its forms. Devastatingly, millions of girls each year are at risk of undergoing FGM. It is therefore imperative that preventative tools are employed, such as: education, information sharing, involving survivors, active communication, necessary training, safeguarding and reporting^[22,23], to help eliminate this violation of human rights^[3].



Pastest questions 4, 5, 6 and 7

Question 4:

A 39 year old Afro-Caribbean woman is referred to gynaecology outpatients with heavy periods. She has always had heavy periods, but for the last few years things have been getting worse and she now has to change a pad every hour and sometimes has accidents with leaking and clots. The bleeding can last for 10 days and she often needs a day or two off work. There is mild abdominal cramping, but no bleeding after sex. She is feeling increasingly lethargic and miserable, particularly as she was hoping to have another baby. She has one child aged six, which was a vaginal delivery. Her periods are regular and she is on no contraception. On examination she is well, with soft abdomen and vaginal examination reveals a 10 week size uterus. Blood tests show Hb 9 and the result of a pelvic ultrasound scan is pending.

Given the clinical information and likely ultrasound result, what is the best option for management?

- A) Myomectomy
 - B) Tranexamic acid
 - C) Laparoscopic hysterectomy
 - D) Endometrial ablation
 - E) Mirena intrauterine system
-

Question 5:

You are an FY2 in General Practice, and see a newly diagnosed pregnant woman. This is her first pregnancy, and the GP has just completed examining her. She is also going to have urine dipstick and blood tests including an infection screen, as all pregnant women do in the surgery.

Which of the following tests should not be done as part of an antenatal infection screen?

- A) HIV
 - B) Hepatitis B
 - C) Syphilis
 - D) Rubella
 - E) CMV
-

Question 6:

A 37-year-old woman is pregnant with her second child. She received no prenatal care in her prior pregnancy and is proud to say she had a home birth. She is coming to the doctor today because she has not felt fetal movements for 24 hours. Ultrasound shows an extremely oedematous fetus without any fetal heart motion.

What is the most likely pathophysiologic mechanism underlying this fetal demise?

- A) Maternal exposure to *Toxoplasma gondii*
- B) Fetal anaemia caused by preformed maternal IgM to the fetus' blood type

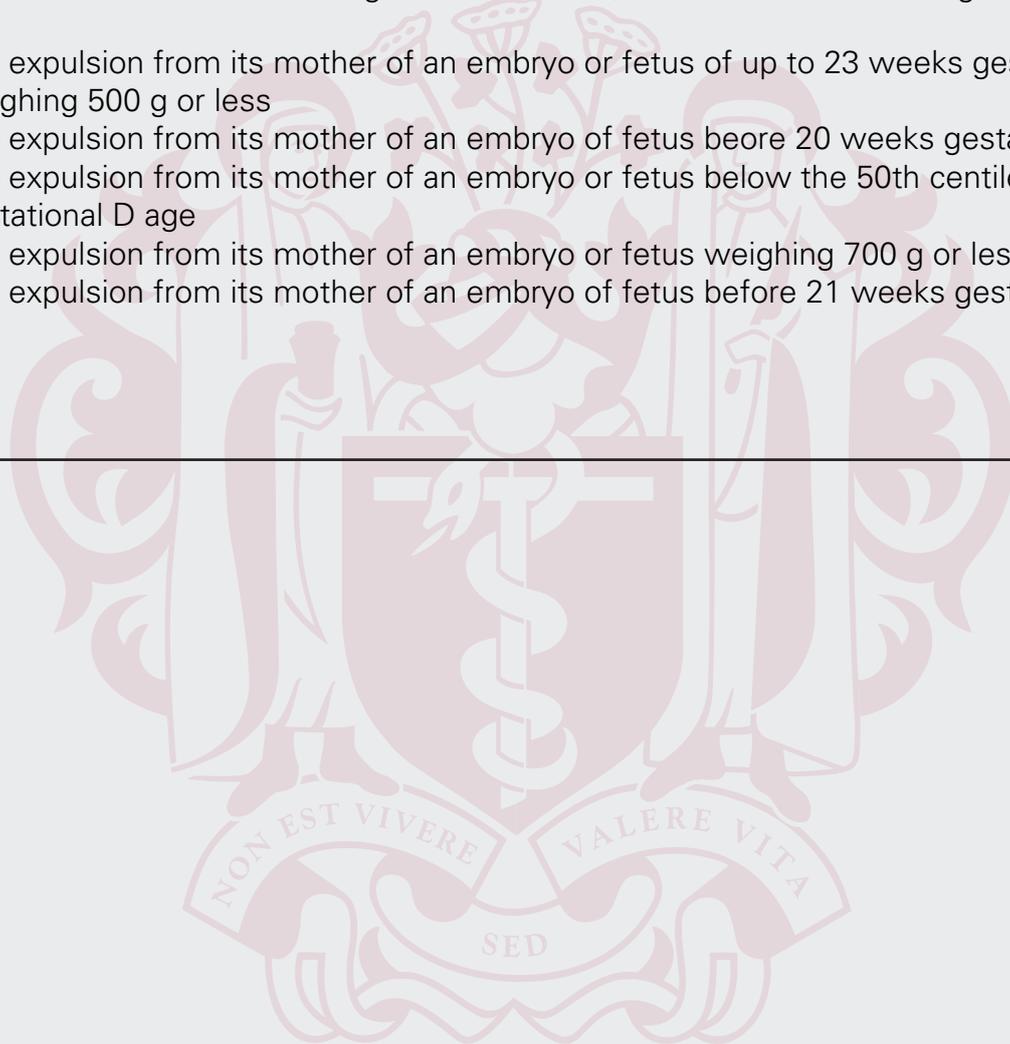
- C) Fetal anaemia caused by performed maternal IgG to the fetus' blood type
 - D) Chromosomal trisomy
 - E) Maternal exposure to Cytomegalovirus
-

Question 7:

A 26-year-old woman is admitted to the Emergency Department with bleeding per vaginam. She is suffering from acute abdominal pain and is in obvious distress. A pregnancy test is positive and on vaginal examination there are signs of tissue being passed from the vagina. The patient is treated for miscarriage.

What is the correct World Health Organisation (WHO) definition of a miscarriage?

- A) The expulsion from its mother of an embryo or fetus of up to 23 weeks gestation and weighing 500 g or less
 - B) The expulsion from its mother of an embryo or fetus before 20 weeks gestation
 - C) The expulsion from its mother of an embryo or fetus below the 50th centile for its gestational D age
 - D) The expulsion from its mother of an embryo or fetus weighing 700 g or less
 - E) The expulsion from its mother of an embryo or fetus before 21 weeks gestation
-



Answers questions section 4, 5, 6 and 7

Question 4

Correct Answer: A

Explanation:

Fibroids are a common cause of menorrhagia. For women who are struggling with heavy periods but still wish to have a baby, management must be carefully considered and clearly hysterectomy and Mirena are not appropriate. Endometrial ablation is also not suitable if she wishes to preserve her fertility. Tranexamic acid may help to reduce the bleeding, but depending on the size and location of the fibroids, may not be a definitive treatment if she wishes to pursue a viable term pregnancy.

Therefore, the recommended option here would seem to be myomectomy, however this can cause heavy bleeding intra-operatively leading to hysterectomy, so this must be fully discussed with the patient. Another option (not listed) may be uterine artery embolisation, which is safe for both short and medium term symptom relief; however, there is a theoretical risk of placental insufficiency and small-for-dates babies.

Question 5

Correct Answer: E

Explanation:

NICE have issued clear guidelines on infection screening for pregnant women:

- Urine MCS: Pregnant women should be offered an MSU culture in early pregnancy even if they are asymptomatic, as treating asymptomatic bacteriuria decreases the risk of pyelonephritis
- Bacterial vaginosis: Pregnant women should not be screened for bacterial vaginosis if asymptomatic. According to the evidence, diagnosis and treatment of asymptomatic BV does not reduce the risk of preterm birth and other complications
- Chlamydia trachomatis: Chlamydia screening should not be part of routine antenatal care, but clinicians should discuss the risk of chlamydia with women aged under 25 and give them details of the National Chlamydia Screening Programme at the booking appointment
- Cytomegalovirus: Routine CMV screening should not be offered to pregnant women
- Hepatitis B: Screening should be offered to pregnant women; as relevant post-delivery interventions can reduce the risk of transmission to the fetus
- Hepatitis C: Routine screening is not recommended, as there is not enough evidence that it is clinically necessary or cost-effective
- HIV: All pregnant women should be HIV screened, as antenatal interventions can prevent transmission to the child
- Rubella: Rubella screening should be offered early to find out if the patient is at risk of contracting rubella, and also to immunise after delivery for future pregnancies
- Group B streptococcus: This should not be offered, as there is insufficient evidence for its clinical benefit and cost effectiveness
- Syphilis: Screening should be offered early during pregnancy, so that it can be treated.
- Toxoplasmosis: Screening should not be offered, as the benefit is deemed to be outweighed by the risks involved in screening. However pregnant women should be informed of primary prevention measures to avoid toxoplasmosis infection, such as: washing hands before handling food; thoroughly washing all fruit and vegetables, including ready prepared salads, before

eating; thoroughly cooking raw meats and ready prepared chilled meals; wearing gloves and thoroughly washing hands after handling soil and gardening; and avoiding cat faeces in cat litter or in soil.

See this link for further details:

<http://www.nice.org.uk/guidance/cg62/chapter/1-Guidance#clinical-examination-of-pregnant-women>

Question 6

Correct Answer: C

Explanation:

This fetus suffered from hydrops fetalis as a result of an Rh blood group mismatch between mother and fetus. When an Rh-negative mother carries an Rh-positive fetus, her immune system is likely to be exposed to the fetus' Rh antigen and develop an antibody response. If it is the woman's first pregnancy, there is usually not a problem (most significant exposure occurs during the violent process of childbirth through maternal-fetal haemorrhage). However, if a woman becomes pregnant again with an Rh-positive fetus she may have antibodies that cross the placenta and attack the fetus' red blood cells. Only IgG crosses the placenta. In routine prenatal care, mothers who are Rh-negative receive anti-Rh immunoglobulin (rhod immune globulin human) during pregnancy to prevent this complication.

Only IgG crosses the placenta, so the answer (fetal anaemia caused by preformed maternal IgM to the fetus' blood type) cannot be correct.

Toxoplasma and Cytomegalovirus (CMV) are both infections that can cause fetal anomalies and intrauterine fetal demise. Toxoplasmosis and CMV are part of the TORCH infections that can cross the placenta and cause harm. TORCH stands for Toxoplasmosis, Other (mainly syphilis and hepatitis B), Rubella, CMV, and HSV (Herpes simplex virus).

Although this woman's age places her fetus at increased risk for chromosomal trisomies, they do not typically cause immune hydrops fetalis, as is shown in this scenario.

Question 7

Correct Answer: A

Explanation:

The World Health Organisation definition of miscarriage is the expulsion from its mother of an embryo or fetus of up to 23 weeks gestation and weighing 500 g or less. In the UK, any loss before 24 weeks of pregnancy is regarded as miscarriage. Any loss after 24 weeks is recorded as a stillbirth. Miscarriages can be further classified as threatened, inevitable, incomplete, complete, missed, silent, septic or recurrent.

Risk of miscarriage in relation to the number of pregnancies is approximately 10-25%, with the risk being highest in early pregnancy. Incidence of miscarriage falls with advancement of pregnancy, and increases with increasing maternal age. Fetal chromosomal abnormalities and endocrine factors such as polycystic ovarian syndrome are associated with increased

incidence of miscarriage, as are autoimmune diseases such as SLE, uterine anomalies, infections and environmental pollutants. Approximately 50% of miscarriages however, have no recognised cause.

Miscarriage usually presents as vaginal bleeding often with associated abdominal pain. Occasionally however, there are no symptoms at all. There are few interventions for preventing miscarriage and management focuses on the diagnosis, counselling of the parents and minimising any potential complications. Treatment can be expectant, medical or surgical depending on the clinical situation of the patient and the gestation of the pregnancy.



Case report: A 28 year old pregnant woman with pathological cardiotocography and pre-eclampsia

by Ho-fon Royce Law,

A 28 year old nulliparous woman had twin pregnancy delivered by caesarean section at 29+4 weeks of gestation due to pathological CTG and moderate pre-eclampsia.

The patient was a Gravida 1 P0+0. Her LMP was on 25 July 2014. She had a positive pregnancy test on 27 August 2014. Her estimated due date was on 1 May 2015. Prior to this pregnancy she took combined oral contraceptive pill for contraception which she discontinued in July 2013 as she was hoping to conceive. She has no significant medical or surgical history. She also has no family history of any delivery complications.

At her 20 week booking ultrasound scan, two foetal hearts and one placental mass were detected. T sign membrane was shown and the membrane thickness was less than 2mm, which indicated an MCDA pregnancy. Both twins had breech presentations.

She went back to her routine antenatal review two weeks later. An abdominal ultrasound scan was performed. Weight of the twins were running below the 10th centile (twin 1 BPD: 26+5, AC: 26; twin 2 BPD: 26+2; AC: 25+5). Intrauterine growth restriction was diagnosed and her blood results revealed mild pregnancy-induced hypertension and proteinuria. She was given her first betnesol dose intramuscularly at the clinic.

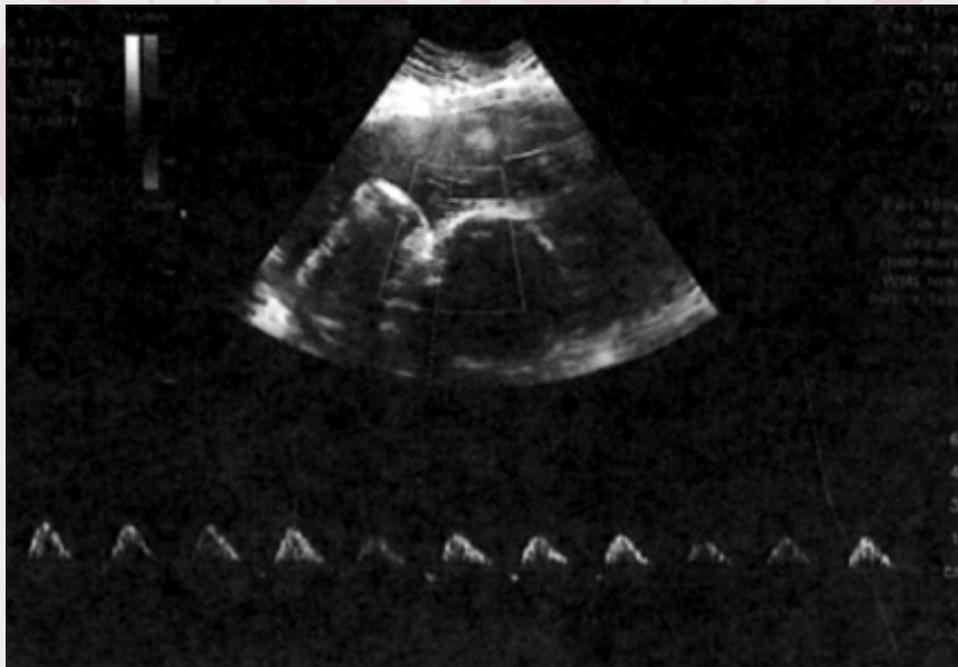
She attended the fetal assessment unit as arranged by the antenatal clinic ten days later. Her BP was measured at 150/92 with significant proteinuria (+++). She was asymptomatic with no headaches or visual disturbances. The fundal height was equal to dates. CTG was monitored and normal results for both twins were shown. Moderate pre-eclampsia was diagnosed due to the PIH and proteinuria. She was started on labetalol 100mg BD as a result and was admitted for close observation.

On the next day pathological CTG was detected in twin 2: he had a decreased variability of <5 bpm; accelerations were absent; and shallow provoked decelerations were also present. From the umbilical artery Doppler scan, absent end diastolic flow was shown in twin 1, while reversed end diastolic flow was shown in twin 2. She underwent emergency Caesarean section immediately as a result. Pre-eclampsia was also on-going and she was given prophylactic magnesium sulphate to prevent seizures.

The procedure was uncomplicated and two male infants were delivered. They were transferred to neonatal unit immediately. Both twins suffered from hypoglycaemia (1.4mmols/l) at admission and were given 10% dextrose fluid bolus.



Twin 1: Absent end diastolic flow



Twin 2: Reversed end diastolic flow

Learning points:

- Normally umbilical arterial flow should be in the forward direction, thus above the baseline, in both systole and diastole
- Diastolic flow reduces or becomes absent due to increased placental resistance
- Reversed EDF is associated with perinatal mortality of 27-64%^[1] and overall mortality of more than 50%^[2]
- Absent EDF and reversed EDF are both associated with intrauterine growth restriction

References

- [1] Ertan AK, He JP, Tanriverdi HA et-al. Comparison of perinatal outcome in fetuses with reverse or absent enddiastolic flow in the umbilical artery and/or fetal descending aorta. J Perinat Med. 2003;31 (4): 307-12
- [2] Brar HS, Platt LD. Reverse end-diastolic flow velocity on umbilical artery velocimetry in high-risk pregnancies: an ominous finding with adverse pregnancy outcome. Am. J. Obstet. Gynecol. 1988;159 (3): 559-61
- [3] Gerber S, Hohlfeld P, Viquerat F et-al. Intrauterine growth restriction and absent or reverse end-diastolic blood flow in umbilical artery (Doppler class II or III): A retrospective study of short- and long-term fetal morbidity and mortality. Eur. J. Obstet. Gynecol. Reprod. Biol. 2006;126 (1): 20-6

How to conduct an ante-natal examination

by Alice Buchan

You will need:

- Non-elastic tape measure
- Sonicaid / pinard
- (if using Ultrasound) sonicaid gel and tissues

Introduction:

- Introduce yourself to the patient
- Confirm name and date of birth
- Ask permission to examine her
- Wash your hands
- Ask her to expose her abdomen from the xiphisternum to the pubic hair line allow her to do this herself
- Position – as flat as she is comfortable. You can ask her to tilt slightly to the left in late pregnancy to avoid aorto-caval compression

Inspection:

- General inspection – around the patient and the patient herself
- Oedema?
- Abdomen
- Striae Gravidarum / striae albicans
- Linea nigra
- Surgical scars – including Pfannenstiel for previous Caesarean section
- Foetal movements
- Assymetry

Palpation:

- Ask about pain first
- Measure symphyseal-fundal height (SFH)
- Use non-elastic tape measure, numbers/cm side face down so you don't cheat
- Ideally, measure it three times, then take an average
- Use left hand to find the fundus, the right to feel the pubic symphysis – this can be unco-fortable so warn the patient

- Assess the lie
- Longitudinal – foetal poles are up/down
- Transverse – poles are one on each side of the mother’s abdomen
- Oblique – diagonally across abdomen
- 3 or more foetal poles – may be twins
- Also try to assess which side is the back (smooth curve) and which is the limbs.
- If longitudinal lie, assess presentation – cephalic or breech
- Can use two hands to feel presenting part
- Small and hard – probably cephalic
- Larger and softer – probably breech
- If cephalic, can assess engagement
- How many fifths are palpable in the abdomen?
- One fifth is roughly a finger’s breadth
- If the widest part of the head is still palpable, the head is two fifths or less engaged
- If the widest part of the head is not palpable, the head is at least three fifths engaged in the pelvis

Auscultation:

- Using a sonicaid or pinard, listen through the anterior shoulder
- Warn that the jelly will be cold and offer her a tissue to remove it afterwards

Bibliography/further reading

- *Obstetrics by ten teachers*
- *Obstetrics & Gynaecology* by Lawrence Inupey and Tim Child
- www.geekymedics.com/obstetric-abdominal-examination

