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SSC 5C: Elective Reflective Report

Reflective assessment of activities and experiences:
On planning my electives my main aim was to spend more time in Obstetrics and Gynaecology, a speciality that I thoroughly enjoyed during my specialities year. In particular I hoped to further my interests in the management of high risk pregnancies and subfertility. At Newham University Hospital I was lucky to be working under a large team which enabled me to rotate around and experience a range of sub-specialities.

Labour ward
On labour ward I came across several cases that interested me ranging from standard low risk spontaneous vaginal deliveries to higher risk, complicated deliveries. One such delivery was of a woman who had diabetes, hypertension and uterine fibroids that were close to the cervical os. The patient was closely followed through her labour with regular measurements of her blood pressure and blood glucose and had a normal deliver. Furthermore, I learnt that most high risk obstetrics cases can be anticipated and well planned for and therefore depend on good follow-up during the antenatal period. Whereas also some cases require quick decision making such as deciding and consenting a patient to use assisted delivery i.e. with forceps when labour is prolonged. Moreover spending an on-call weekend on the labour ward gave me the opportunity to get to follow through the management of several labours in a single weekend and I was able to observe a forceps deliver, the management of pre-eclampsia patient and emergency caesarean sections and was a great teaching opportunity.

Acute gynaecology
Additionally spending time on the acute gynaecology ward was beneficial as I was able to observe the management of common gynaecology emergencies such as the medical and surgical managements of miscarriages and ectopic pregnancies. Also I was able to practise my clinical and practical skills by helping the SHOs with ward tasks such as examining patients and carry out cannulations and venepuncture.

Outpatient Clinics
I had the opportunity to take part in several outpatient clinics in gynaecology such as hysteroscopy and subfertiliy clinics and antenatal clinics. I enjoyed having the opportunity to clerk in the patients' presenting problems and following them through their discussions with the consultant regarding the investigations and management plans. These opportunities firstly helped me develop my clinical reasoning skills such as forming diagnoses and subsequent investigations required. Also these sessions showed me that patient understanding and choice is really important when it comes to management planning for example in a case with a patient who presented with a long history of menorrhagia and was considering a hysterectomy to solve her symptoms. Talking to her about the different initial options such as using the Mirena coil and endometrial ablation may help her symptoms were better starting points for treatment.

Early Maternity Assessment
During my elective at NUH I particularly enjoyed attending the Foetal Maternal Unit as I learnt to interpret ultrasound scans live and come across several reasons why

patients were assessed there such as presentations of reduced foetal movement, investigations of congenital diseases such as Down's Syndrome and less commonly investigations of other presenting problems such as polyhydramnios.

Personal & professional development goals:
The elective has further stimulated my interest in obstetrics and gynaecology. Advice from my seniors has highlighted to me areas for further development such as encouragement to sit national exams and partake in audits, of which I have started one, in helping to develop my interest in the speciality.

SSC 5C: Elective Case Summary and Discussion

Case Study

Name: Mrs. F. M.
Age: 20
G (1) **P** (0)

Marital Status: Married
Ethnicity: South Asian (Sri Lankan)
Occupation: Student

PC:
Patient seen in labour ward. She had undergone induction of labour at 37^{+6} weeks for type 2 diabetes mellitus (insulin dependent).

History of present pregnancy:
First day of LMP: 12/08/10
EDD: 19/05/11
No major complications during current pregnancy

Past Obstetric History: nil of note

Past Gynaecological History:
NO IMB/ PCB
Smear test: Jan 2010 was normal

Past Medical History:
T2DM diagnosed incidentally aged 18
No other illnesses of note
No past surgeries

Past Psychiatric History: nil of note
Drug History:
Glimepiride (stopped at start of pregnancy)
Insulin (started during this pregnancy)
Folic acid 5mg
No drug allergies

Family History:
Mother has hypertension and T2DM
Father has hypertension

Social History:
Non smoker, no alcohol
Lives at home with partner
Student

Management:
The patient was admitted for elective induction of labour at 37- 38 weeks as recommended by guidelines for pregnancy affected by diabetes. IOL was initiated with a membrane sweep given and this was followed by Prostin. Vaginal examination six hours post induction revealed 1-2 cm dilatation of the cervix and subsequent artificial rupture of membranes was carried out to speed up contractions

and clear liquor was seen. Following this, contractions remained mild and irregular and the decision was taken to start Syntocinon augmentation and so epidural analgesia was sighted. Following the start of the Syntocinon augmentation abnormal changes were seen on cardiotocography (CTG). This included increasing foetal heart rate baseline from 140-160bpm to 160-180bpm with decreasing variability. Additionally there was evidence of foetal bradycardia with the presence of pathological decelerations occurring down to 100 bpm with slow recovery to baseline. The CTG also showed that the contractions were inadequate occurring about 2 in 10 minutes. As a result of this the Syntocinon was stopped. A further vaginal examination revealed that the cervix was still only 1-2 cm dilated and the decision was taken to carry out a grade 1 caesarean section.

Diabetes in Pregnancy

1. Describe the pattern of diabetes in pregnancy in the UK and specifically in East London

In the UK diabetes is the most common pre-existing illness that complicates pregnancy. Of the 2-5% of pregnancies complicated by diabetes in the UK, 87.5% are due to gestational diabetes mellitus (GDM), 7.5% due to type 1 diabetes mellitus (T1DM) and 5% due to type 2 diabetes mellitus (T2DM).
As part of the case study I will be focussing on the effects of pre-existing diabetes on pregnancies.
The Healthcare for London report in 2008 revealed that Newham had the highest prevalence of diabetes compared to other boroughs in London. This is mainly due to the large proportion of ethnic minority and black groups living in the borough, who are at higher risk of developing diabetes. Additionally the incidence of young people being diagnosed with type 2 diabetes is on the rise in Newham and includes women of childbearing age. These factors lead to an increased proportion of diabetic pregnancies to Newham maternity services.

2. Describe complications of diabetes in pregnancy focussing on patients with pre-existing diabetes.

Physiological adaptations in pregnancy result in the reduced actions of insulin. This means that diabetic women who become pregnant they will have an increased insulin requirement for adequate glycaemic control. Having diabetes increases a pregnant woman's risk of several complications. These can be minimised with careful control of blood glucose levels before and during pregnancy. Complications caused by diabetes in pregnancy can be grouped as diabetic complications, obstetric complications and complications affecting the developing foetus and neonate. Diabetes complications such as worsening of retinopathy or nephropathy can occur in pregnancy. Acute diabetic complications such as hypoglycaemic episodes commonly occur during pregnancy.

Obstetric complications arising in pregnancies affected by diabetes include increase risk of newly diagnosed hypertension, high risk of thromboembolism and maternal infections. Macrosomia is found more in diabetic pregnancies and can lead to problems during labour such as obstruction and shoulder dystocia. This and other

factors have been found to increase the caesarean section rate amongst diabetics (67% rate) than general population pregnancies (22%) as reported by the Confidential Enquiry into Maternal and Child Health (CEMACH).

There are several complications that can affect the developing foetus in a diabetic pregnancy including a high risk of congenital malformations commonly cardiac abnormalities. Also sadly CEMACH found that there was an increased risk of intrauterine death and stillbirth in diabetic pregnancies. During birth babies born to diabetic mothers were more likely to suffer from birth injuries such as Erb's palsy, most likely due to macrosomia. Neonatal problems associated with diabetes include hypoglycaemia, jaundice and respiratory distress syndrome which mean that there is an increased need for NICU admission. Finally as well as increased risk of intrauterine and stillbirth risk there is also an increased perinatal mortality rate amongst babies born to diabetic mothers.

3. Describe the pattern of health provision available in the UK for management of pregnancies affected by diabetes.

In the UK NICE guidelines on the management of pregnancies affected by diabetes outline advice from preconception management through to antenatal care to intrapartum and postnatal care of the mother and neonate. The aims are central to reducing the complications outlined above by the careful maintenance of good glycaemic control and regular monitoring.

The guidelines highlight that pre-conception advice is vital. Diabetic women of childbearing age should be advised of the importance to plan their pregnancy when their HbA1c levels are ideally less than 6.1%. This is to minimise the risk of complications such as congenital malformations, miscarriage and stillbirths. Regular monitoring of blood glucose is essential throughout the pregnancy and this should be carried out by self monitoring and monthly HbA1c levels.
Management at the pre-conception stage includes advice on diet, weight loss if BMI> 27 and exercise. As well as these, glycaemic control can also be managed with metformin before and during pregnancy. All other oral hypoglycaemics should be stopped. During the pregnancy insulin can be used Diabetic patients thinking about becoming pregnant or who are pregnant need to take 5mg of folic acid during the first trimester of pregnancy to reduce risk of neural tube defects. Mrs. F .M. previously controlled her diabetes with the sulphonylurea Glimepiride and this was discontinued by her GP on diagnosis of the pregnancy. She is currently on an Insulin regimen in place of this.

During the pregnancy a special programme of antenatal care is required in the management of diabetic pregnancies. From the start of the pregnancy the patient should be looked after a joint diabetic and antenatal team comprising specialists such as an obstetrician, diabetician, specialist diabetic nurse and midwife. This care should involve regular reviews by the diabetes team at least fortnightly. As well as routine antenatal care specialist monitoring is required for diabetic patients. This includes a good glycaemic control and regular monitoring of this. The NICE guidelines recommend aiming for fasting blood glucose level between 3.5 -5.9 mmol/L. Postprandial testing is a good monitor of glycaemic control in pregnancy. NICE recommends that 1-hour postprandial blood glucose should be below 7.8

mmol/L. HbA1c should be used regularly in the first trimester as in the pre-conception stage in the monitoring of the patients glycaemic control. During pregnancy as in the pre-conception stage the patient can be treated with metformin or insulin. Mrs. F. M. after starting insulin treatment of her diabetes had several episodes of hypoglycaemia leading to symptoms including dizziness and lethargy. At her regular antenatal appointments it was decided that she was to be treated with shorter acting insulin and this helped prevent the occurrence of hypoglycaemias. This shows that in pregnancy short acting insulin can be more advantageous over long acting insulin analogues.

Antenatal care of a diabetic patient should also include screening for complications of diabetes. This includes regular screening of the patient's retina and renal function tests. Retinal screening should be carried out before or at the start of the pregnancy. In this way a baseline assessment of the retina can be made and followed up by a further assessment in mid pregnancy. However if the initial assessment showed any stages of retinopathy assessment and treatment should be provided sooner. Renal function should also be assessed early on in the pregnancy of a diabetic patient to assess for nephropathy by measuring the patient's serum creatinine and urine protein concentration. A raised serum creatinine or increased total protein excretion in the urine requires the patient to be urgently referred to renal specialists as nephropathy can lead to pre-eclampsia.

It is also important to screen for complications affecting the developing foetus as part of the specialised antenatal care programme. Monitoring of the foetus in pregnancy is carried out by ultrasound scanning. As in normal antenatal care the first scan carried out around 12 weeks gestation is used to confirm the pregnancy and in estimating the gestational age. The anomaly scan carried out around 20 weeks is vital to examine the four chambers of the heart and the outflow tracts due to known risk of congenital cardiac malformations associated with pregnancies complicated by diabetes. Additionally, regular ultrasound scans should be carried out every four weeks from 28 to 36 weeks with the aim of monitoring foetal growth to assess for complications including macrosomia and amniotic fluid volume to assess for polyhydramnios, both known complications of diabetes.

Careful intrapartum care is required in the management of labour of diabetic patients. Patients are advised of elective births at 38 weeks to reduce risk of intrauterine death. This can include induction of labour or elective caesarean sections. During labour it is important to monitor the patient's blood glucose levels hourly and aim to keep this within 4 to 7 mmol/L. During her long period of labour, Mrs. F. M.'s blood glucose concentrations were difficult to control and she was put on an insulin and dextrose sliding scale that helped stabilise her levels.

At delivery both the neonate and new mother need careful assessment. The neonate should be assessed for any diabetes associated complications including hypoglycaemia or cardiac disease. If found to be clinically well the baby is monitored for at least 24 hours to ensure they are feeding well and regularly and maintaining normal blood glucose levels. Referral to the neonatal intensive care unit will be required if the baby is found to have symptoms of hypoglycaemia for treatment with intravenous glucose or if clinical signs of cardiac disease and urgent echocardiogram required. The care of the new mother post delivery centres on reassessing her

insulin needs and glycaemic control to avoid the occurrence of hypoglycaemia. This is at high risk of occurring as maternal insulin requirements drop after birth and therefore a reduced dose is required to control the glucose levels. New mothers are advised that breastfeeding can help glycaemic control and that they should have a small meal or snack before each meal. Also in regards to breastfeeding, new mothers should be educated on which medications they can use. Insulin can be continued after birth for patients with type 1 diabetes mellitus and for patients with type 2 diabetes mellitus oral hypoglycaemic agents should be avoided except metformin and glibenclamide which are safe to use when breastfeeding. Mrs. F. M. was prescribed metformin and her original oral hypoglycaemic was discontinued as she was breastfeeding.

Reference

NICE Clinical Guideline (March 2008); Diabetes in pregnancy: *Diabetes in pregnancy: management of diabetes and its complications from pre-conception to the postnatal period*

Diabetes UK (2003); Recommendations for the management of pregnant women with diabetes (including gestational diabetes).

The Health Foundation: Newham University Hospital http://www.health.org.uk/areas-of-work/programmes/shine-eleven/related-projects/newham-university-hospital