THE 12th INTERNATIONAL SCIENTIFIC CONFERENCE
THE SOCIETY FOR ACUTE MEDICINE

Bournemouth International Centre
20 – 21 September 2018

Clinical conundrums in maternal medicine

Dr Francesca Neuberger
Acute and Obstetric Physician
North Bristol NHS Trust
Francesca.Neuberger@nbt.nhs.uk
@FranNeubes

Clinical conundrums in maternal medicine

- Two cases
- Approach to maternal medicine patients

Case 1 - SC

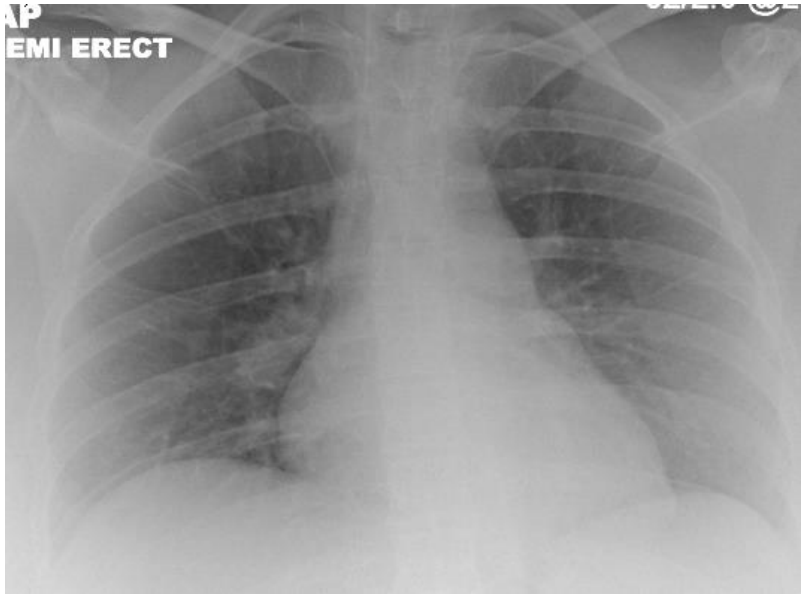
- 32 year old
- Fit and well
- P0, midwife led care throughout pregnancy

- Forceps delivery in theatre at term – 3.6Kg female infant
  - BP spike at time of delivery 170/90
  - temp 40 degrees
  - lactate 4.5, 6.5, 8.5, 15
  - anuric
  - developing disseminated intravasular coagulation (DIC)

Day 1

CLOTTING SCREEN				
Coagulation screen				
Prothrombin time	*	15.6	s	9.5 - 13.0
INR		1.4		
APTT	*	58.3	s	21.0 - 33.0
LIVER FUNCTION TEST				
Total Bilirubin	*	22	umol/L	<21
ALP		122	U/L	30 - 130
ALT	*	320	U/L	10 - 40
MAGNESIUM				
Magnesium		0.70	mmol/L	0.70 - 1.00
CALCIUM GROUP				
Albumin	*	16	g/L	35 - 50
Calcium		2.59	mmol/L	2.20 - 2.60
Adjusted Calcium	*	2.89	mmol/L	2.20 - 2.60
Interpret adjusted calcium with caution if albumin < 20 g/L				
PHOSPHATE				
Phosphate	*	2.43	mmol/L	0.80 - 1.50
FULL BLOOD COUNT				
White Cell Count	*	21.61	10^9/L	4.0 - 11.0
RBC	*	2.12	10^{12}/L	3.80 - 5.30
Haemoglobin	*	60	g/L	120 - 150
Haematocrit	*	0.201	L/L	0.37 - 0.45
MCV		94.8	fL	83 - 100
MCH		28.3	pg	27.0 - 32.0
MCHC	*	299	g/L	310 - 350
Platelets	*	69	10^9/L	150 - 450
RDW		15.0		11.5 - 15.5
Neutrophils	*	19.12	10^9/L	1.5 - 8.0
Lymphocytes		1.53	10^9/L	1.0 - 4.0
Monocytes		0.93	10^9/L	0.2 - 1.0
Eosinophils		0.00	10^9/L	0.0 - 0.5
Basophils		0.02	10^9/L	0.0 - 0.2
C-REACTIVE PROTEIN				
CRP	*	8	mg/L	<6.0

FIBRINOGEN				
Fibrinogen	*	1.0	g/L	1.5 - 4.0
UREA,CREAT + ELECTROLYTES				
Sodium		141	mmol/L	133 - 146
Potassium		4.7	mmol/L	3.5 - 5.3
Urea		3.9	mmol/L	2.5 - 7.8
Creatinine	*	155	umol/L	45 - 84
eGFR/1.73m2 (CKD-EPI)		38	mL/min	
eGFR comment				
eGFR 30-59: (CKD Stage 3) Multiply eGFR by 1.16 for African or African-Caribbeans.				
Acute Kidney Injury (Stage)	*	1		
Comment				
Rise in creatinine may indicate AKI stage 1. Review urgently and follow AKI guidelines.				



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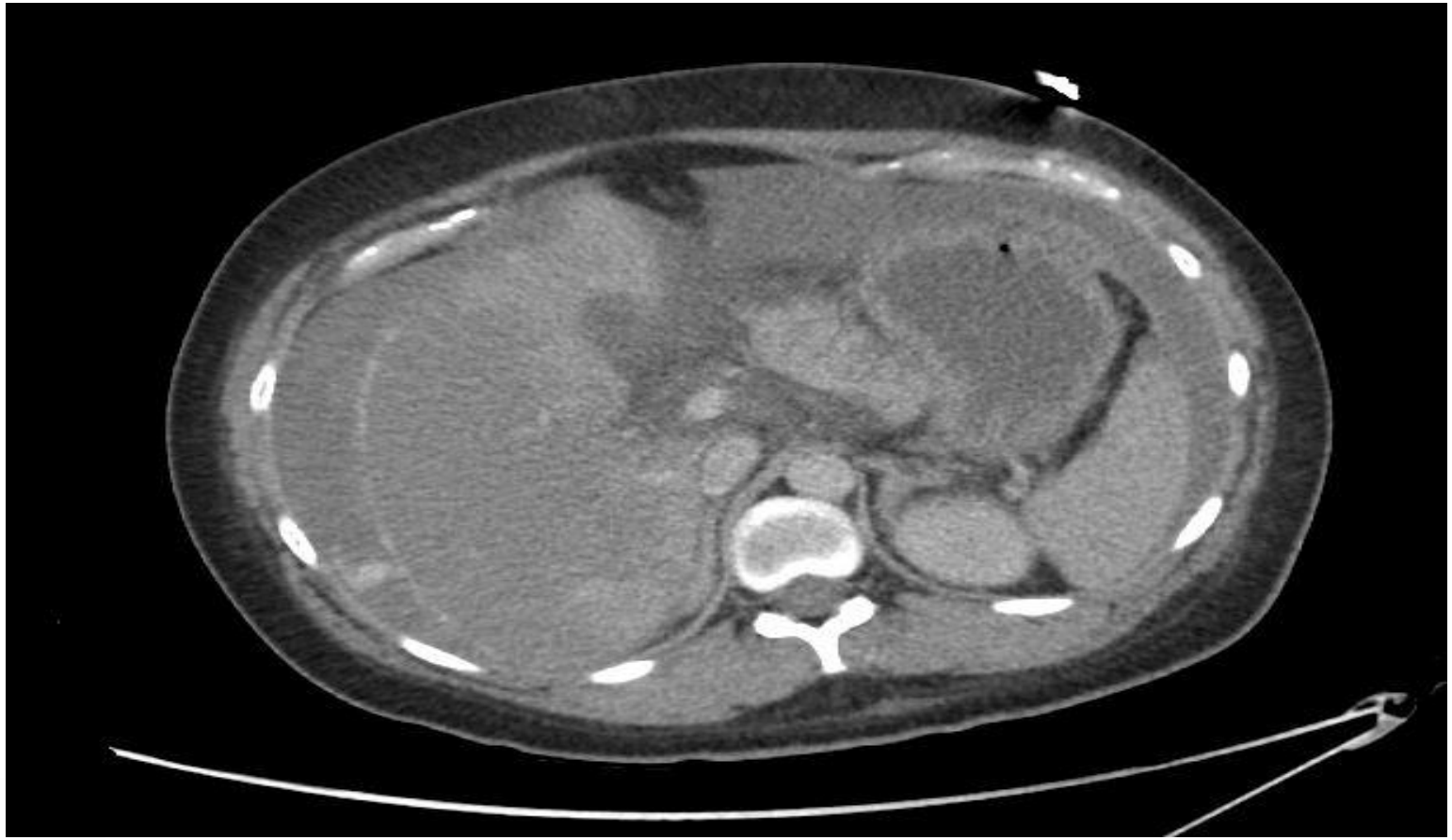
Case 1 - SC

- Causes of deterioration?

- Differentials
  - sepsis
  - concealed obstetric haemorrhage
  - uterine rupture
  - other intrabdominal event

CT abdomen/pelvis

- diffuse capsular hepatic haemorrhage
- large volume haemoperitoneum
- no active uterine bleeding



Progress on ITU

- Liver failing
  - INR 1.8
  - Unable to maintain blood glucose
  - ALT rising (peaking at 3640)
  - Encephalopathy stage 1

- On vasopressors, intubated and ventilated, receiving haemofiltation

MDT discussion

obstetrics

anaesthetics

intensive care

haematology

hepatology

nurses/AHPs

midwifery

mat med

Differential diagnosis

- HELLP (haemolysis/elevated liver enzymes/low platelets)
- Acute fatty liver of pregnancy (AFLP)
- Sepsis
- Haemolytic Uraemic Syndrome (HUS)

HELLP

- New onset elevated liver enzymes in pregnancy

AND

- Low platelets (<100)

AND

- haemolysis or hypertension or proteinuria

- A severe form of pre-eclampsia
- Management is delivery of the fetus and supportive care

Acute fatty liver of pregnancy (AFLP)

- Rare (1 in 7000 to 1 in 20000 pregnancies)
- Maternal mortality around 2%, perinatal around 10%
- Usually after 30/40 or immediately post partum
- Typical features
  - Vomiting
  - Abdominal pain
  - Nausea, anorexia, lethargy
- May develop DIC, fulminant hepatic failure, renal failure

HELLP vs. AFLP

	HELLP	AFLP
Raised transaminases	high	high
hypertension	++	+
primiparous	++	+
thrombocytopaenia	++	+/-
USS/CT	Normal/hepatic haematoma	Normal/fatty liver
vomiting	+/-	++

- Could it be HUS (AKI/thrombocytopaenia/haemolysis)?
  - abnormal liver function and coagulopathy – more suggestive of HELLP

Differential diagnosis

- HELLP (haemolysis/elevated liver enzymes/low platelets)
- Acute fatty liver of pregnancy (AFLP)
- Sepsis
- Haemolytic Uraemic Syndrome (HUS)

Following discussion, diagnosis of HELLP, with secondary ischaemic liver injury.

Clinical progress

- Transferred intubated to King's College Hospital liver unit
- Liver transplant on day 12
- Repatriated to Southmead nearly 7 weeks and 5 days following delivery

- Baby
  - 8 days on NICU
  - Received phototherapy for jaundice and respiratory support initially
  - Doing well

The blind men and the elephant

Managing complex maternal medicine cases

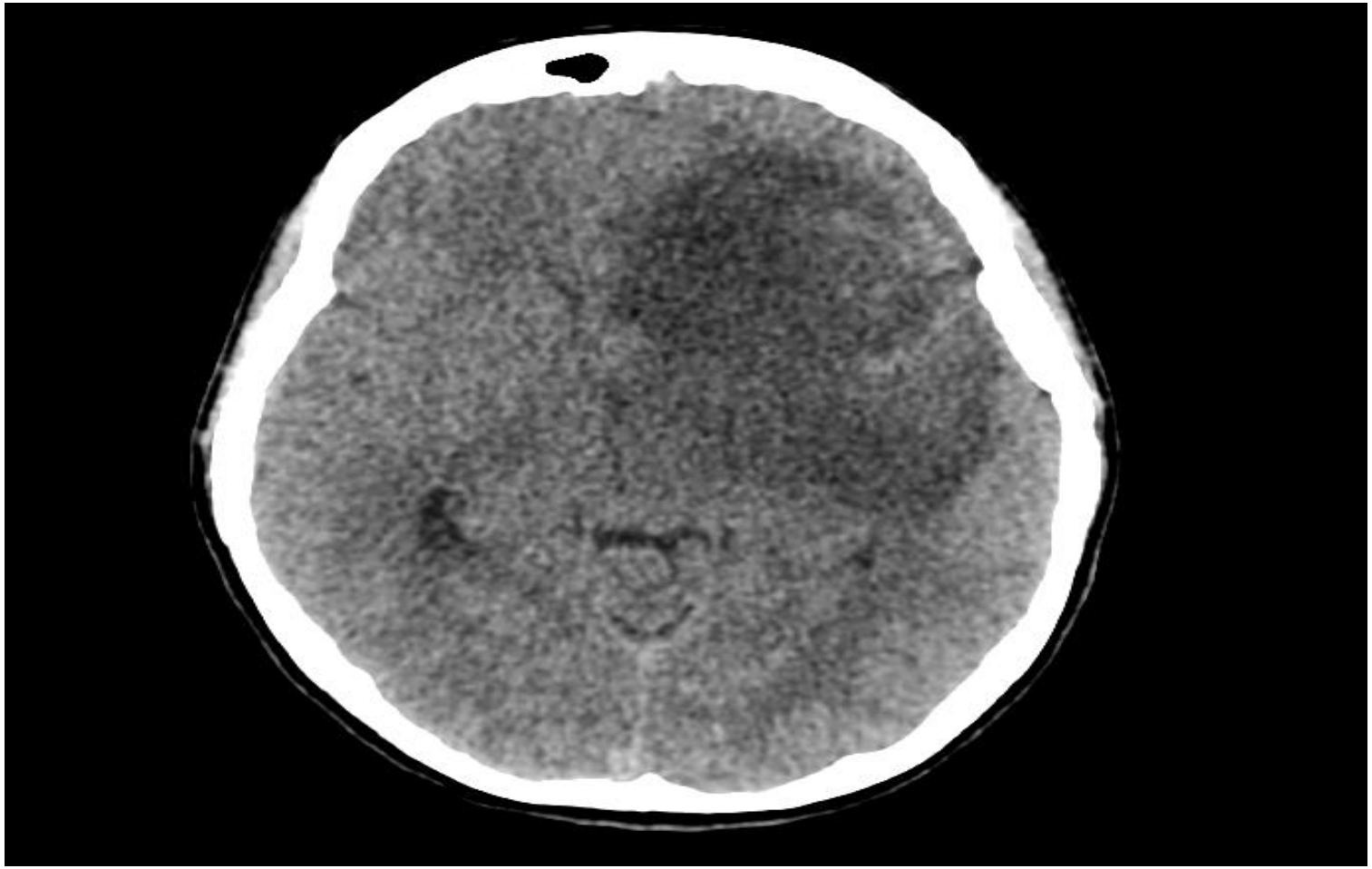
- A range of expertise is needed
- A lot can be achieved with the right people in the same room
- Requires an overview of all issues
- (Not dissimilar to acute medicine!)

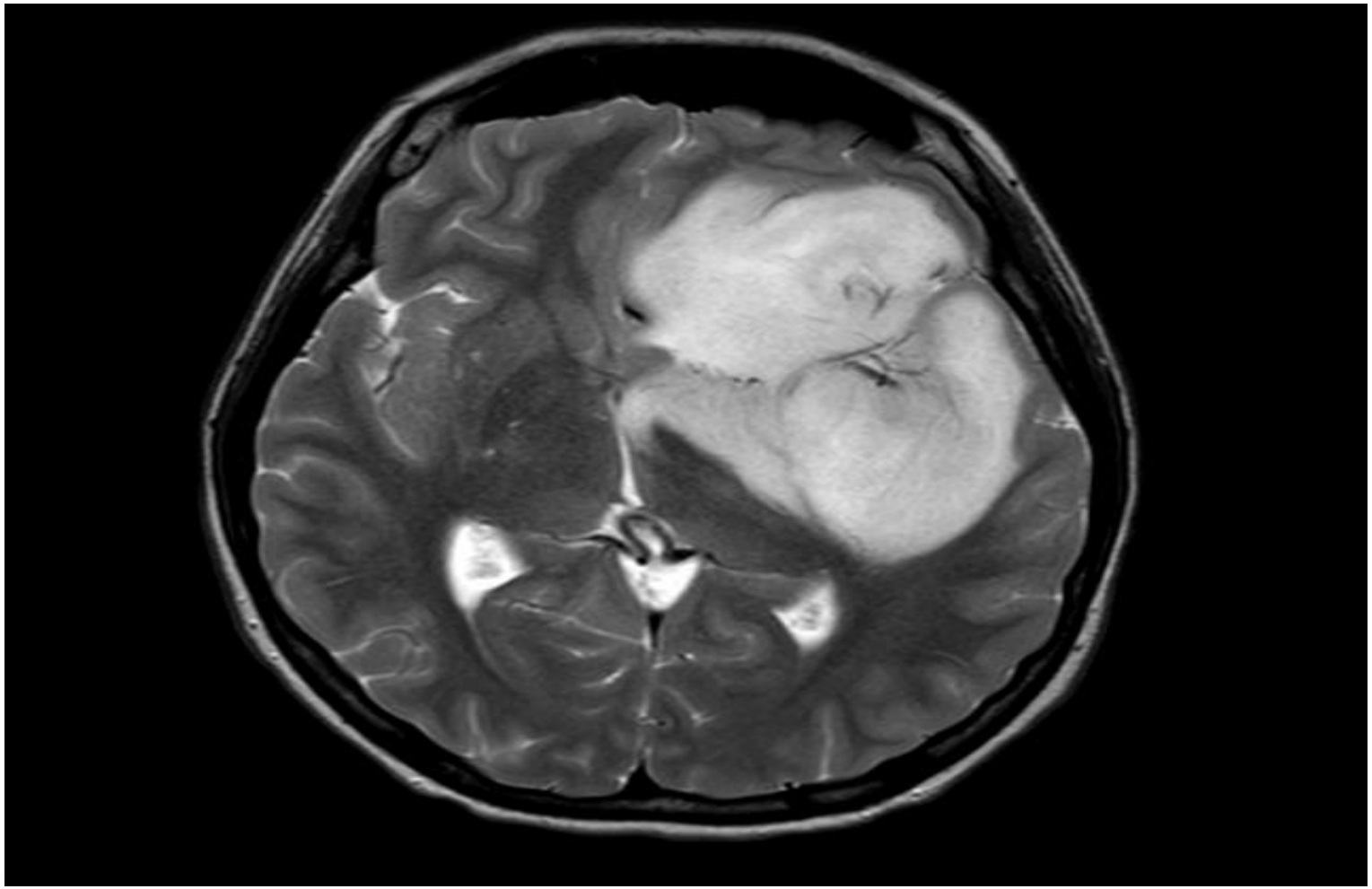
Case 2 - JW

- Healthy 27-year-old lady
- First tonic-clonic seizure in airport
- Sent to ED, GCS is 11/15 (E2 V4 M5)
- Urine pregnancy test is positive
- USS confirms early intrauterine pregnancy
- LMP was 8 weeks ago

Differential diagnosis

- Primary epilepsy
- PET (but too early..)
- CNS infection (but history not supportive)
- Space-occupying lesion
- Haemorrhage





Seizures in pregnancy

- Suspect PET if >20/40
- Image as you would normally
- Drugs
  - risk vs. benefit
  - sodium valproate – unsafe in pregnancy
- Safety advice

PET diagnosis

- Hypertension (>140/90) after 20/40 with one or more of the following new onset conditions:
  - proteinuria
  - maternal organ dysfunction
    - renal impairment
    - liver dysfunction
    - neurological abnormalities
    - haematological complications
  - fetal growth restriction

Clinical progress

- MDT input
- Started on levetiracetam, weaning course of dexamethasone
- Awake craniotomy at 14/40
  - speech disturbance post-operatively
  - discharged home 4 days later
  - grade 2 astrocytoma on histology
- Elective CS at term of 2.8Kg female infant

Key points

- Collaboration is key
- Early discussion with relevant specialists
- New challenges
  - advancing maternal age
  - assisted conception
  - increasing medical complexity