# Fellowship 2017:2\_GI/Liver/GastroSurg

**Q1**

**A 56 year old female presents to your rural ED with haematemesis and is actively vomiting. She is heavily intoxicated and unable to give a clear history of events. She has known Childs Pugh C liver cirrhosis. She is in the resus bay with full non-invasive monitoring attached. There is no endoscopy service at your hospital**

**BP 70/40**

**P 120**

**Sats 90%**

**RR 32**

**Temp 35.2**

**GCS 13**

a) List the 4 most likely causes of her haematemesis (4 marks)

Oesophageal/Gastric Varices

Peptic Ulcer disease

Oesophagitis

Mallory Weiss Tear

**She has a large volume bright red vomit of estimated volume 1000mls.**

**Her VBG is shown**

**pH 7.1**

**pCO2 31**

**HCO3 15**

**Hb 56**

**Na 137**

**K 3.1**

b) List the **managemen**t steps you will undertake within the next 30 minutes (8 marks)

2 large bore IV lines

Blood products/MTP guided by haemodynamic parameters/FBC/coags/Fib/Ca etc. Start with O neg blood. Avoid overtransfusion at risk of dislodging clot. Permissive hypotension

Ceftriaxone 1g IV

Contact retrieval PLUS Urgent surgical/gastro involvement at nearest tertiary hospital for arranging UGI scope

Terlipressin 1.7mg 6hrly or octreotide (50-100mcg bolus then 25-50mcg/kg/hr)

PPI infusion – pantoprazole 80mg stat and 8mg/hr IVI

Consider Sengstaken Blakemore tube for transfer – will likely need to be intubated for this is needs

Arterial and central lines for transfer if time permits

NOTE: Lactulose not appropriate given current vomiting

**The patient becomes aggressive and is attempting to leave the department.**

c) List the strategies, in order of escalation, that you will use to manage this situation (4 marks)

Verbal de-escalation

* Explanation of seriousness of condition

Use of family members or friends to try and talk patient into staying

Common law to restrain patient as has no capacity to make decisions – GCS 13 and hypotensive

* Sedation with ketamine e.g. DSI 1mg/kg – more haemodynamically stable agent that others. Other options include small titrated doses of droperidol or midazolam
* Likely will need I&V for safe transfer to definitive care.
* Mechanical restraint less appropriate

**Q2**

**An 84 year old man presents to your tertiary ED with a 2 week history of worsening jaundice and abdominal pain. He is a nursing home resident and has moderate dementia. He is sweaty, confused and distressed. He has had a very low alcohol intake throughout his life. His only comorbidity is hypertension.**

a) List the most likely differentials you will consider (6 marks)

Gallstones with biliary obstruction

Cholecystitis

Cholangitis

Malignancy e.g cholangiocarcinoma/pancreatic malignancy

Secondary malignancy - liver mets

Infectious hepatitis – e.g Hep A

All other causes e.g chronic hep/autoimmune causes etc are less likely

b) Complete the table below for the 5 most important tests that you will order, giving a reason for each (10 marks)

|  |  |
| --- | --- |
| **Test** | **Reason** |
| LFTs | To determine if obstructive vs hepatitis cause |
| Coags | To determine if synthetic function of liver |
| BSL | Exclude hypoglycaemia – sweaty and confused ?neuroglycopenic |
| USS | ?biliary obstruction ? parenchymal lesion |
| FBC | Exclude anaemia/haemolysis, WCC as marker of infection |

**The patient expresses a wish NOT to have any further tests and is distressed and aggressive when you attempt to take blood.**

c) What factors will you consider when deciding whether to palliate vs actively manage this patient? (4 marks)

Diagnosis and whether reversible cause

Anticipated course and invasiveness of proposed Rx e.g surgical vs abx

Quality of life e.g cognitive function, mobility, ability to carry out own ADLs, pain

Capacity of the patient to make decisions

Preexisting wishes documented in a living will/advanced directive

Discussions with family members/carers

**Q3**

**A 15 year old female presents with weight loss and pallor. Her family are concerned that she has been purposefully withholding food and inducing vomiting over a period of 6 months because she was bullied at school for “being chubby”. Her BMI is 14**

a) What positive features on examination might suggest that she has a purging disorder rather than another medical reason for her weight loss? (2 marks)

Evidence of erosive changes to teeth

Marks on knuckles due to induced vomiting

Parotid gland swelling

b) List the immediate investigations you will perform, and the results that you might expect to find should your suspicion of anorexia nervosa with purging be correct. (7 marks)

EUC – Hypokalaemia, Increased Urea

CMP – HypoCa/Mg

LFT’s – Hypoalbuminaemia

FBC – Anaemia, thrombocytopenia, Low WCC

ECG – Sinus brady, long QTc due to electrolytes, signs hypoK

BSL – hypoglycaemia

VBG – Hypochloraemic metabolic alkalosis

**She tries to leave the department as “there is nothing wrong” and states “you can’t keep me here”. Her parents are distressed and want to know whether she can be kept in hospital against her will to be refed via NG tube**

c) What is the legal standpoint on consenting to and refusing treatment for this patient (3 marks)

If <16 and Gillick Competent can CONSENT TO treatment

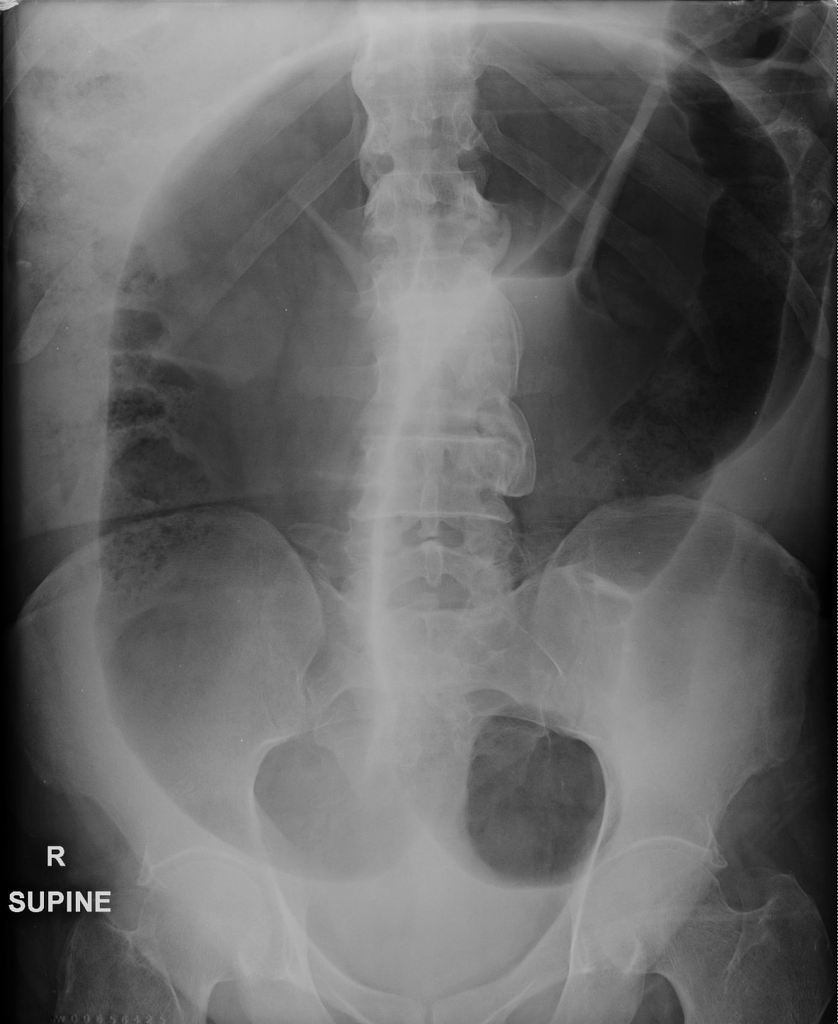
But cannot refuse treatment – treat as per the parents wishes

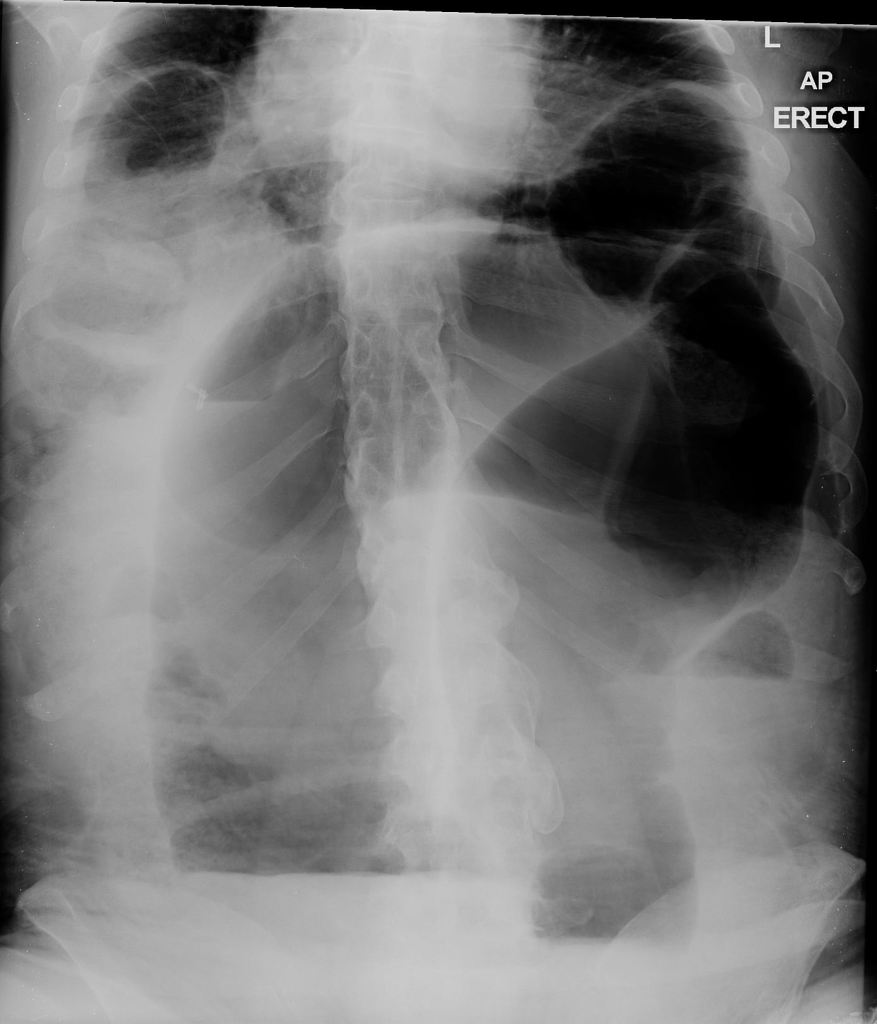
If there is disparity between the parents and the medical team opinion on correct course of action needs to be referred to the guardianship board/via hospital legal team

**Q4**

**An 84 year old man presents with a painful distended abdomen. He has vomited several times over the last 24 hrs**

**His AXR is shown**





a) List the abnormal features on this XRay (2 marks)

“Coffee Bean Sign” – dilated large bowel

Air fluid levels on erect film

c) What is the diagnosis? (1 mark)

Sigmoid Volvulus

The medical student that you are supervising asks you how you can tell the difference between large and small bowel on an Xray.

d) Complete the table below outlining the features of large versus small bowel obstruction as seen on a plain abdominal film (6 marks)

|  |  |
| --- | --- |
| **Large Bowel** | **Small Bowel** |
|  |  |
|  |  |
|  |  |

|  |  |
| --- | --- |
| **Large Bowel** | **Small Bowel** |
| Upper limit of Normal 6-9cm | Upper limit of normal 3cm |
| Haustra Pattern (across part lumen) | Valvulae Coniventes (across whole lumen) |
| Peripherally placed | Centrally placed |
| Contains faeces | Contains liquid |

**Q5**

**A mother brings her two year old child to ED and states that the child may have swallowed a battery from a toy. The child put the battery in her mouth, then fell over, and now the battery cant be found**

a) List the 4 most relevant points to obtain from the history (3)

Size of battery

Time of ingestion

Symptoms e.g drooling, pain, vomiting, abdo pain, unable to swallow, choking, irritability

?Magnet coingestion possible

**CXR is performed, demonstrating a 20mm diameter battery, which appears to be in the stomach. The child is for discharge.**

b) What advice should be given to the mother regarding the ongoing care? (2)

Watch for sx and return immediately if any

Repeat XRay in 48 hrs with endoscopic removal if not passed

c) If the battery was smaller (10mm) and seen to be beyond the pylorus how would the discharge advice have changed?

No need for Xray

**The Child returns after 3 days with abdominal pain, dark stools and refusal to eat or drink for 12 hours.**

c) List and justify 5 actions in the Emergency Department (5)

IV line and IV fluids, keep fasted

Bloods inc cross match/VBG/FBC/EUC/LFT

Analgesia – titrated IV opiates

Erect CXR for free gas – consider CT imaging if free gas seen

Contact gastro/surgery to arrange an urgent endoscopy/surgery if perforation discovered

d)

<http://www>.poison.org/battery/guideline

**Q6**

**A 25 year old female presents with 3 months of non-bloody diarrhoea without vomiting or fevers. . Her GP has sent 2 stool samples, which have been negative. She has lost 5 kilos is weight and is currently 45kg (BMI 17). She is lethargic, weak and mildly dehydrated. He has no history of medical conditions and takes no medications.**

**BP 130/70**

**P 100**

**Sats 99% RA**

**RR 16**

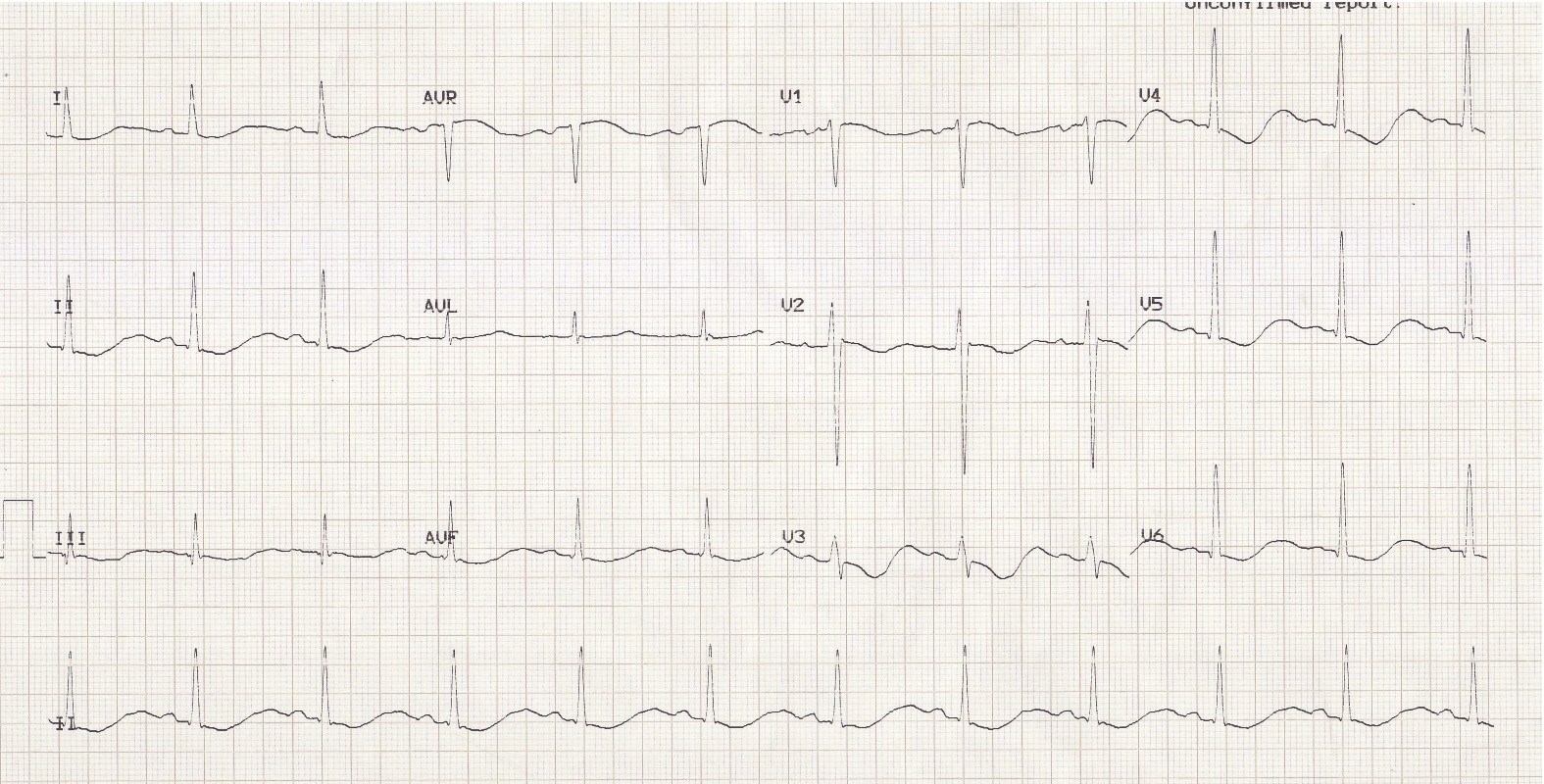
**Temp 37.1**

a) In the table below list 5 potential differential diagnoses and 2 features in the history you will ask relating to each differential

|  |  |
| --- | --- |
| **Differential** | **History** |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |

|  |  |
| --- | --- |
| **Differential** | **History** |
| Hyperthyroidism | Heat intolerance, tremor, eye changes, palps etc |
| Coeliac Disease | Relationship to gluten/wheat, |
| IBD | Mouth ulcers, FH, rashes, |
| Parasitic Infection e.g. giarda | Travel history, eating unclean street food |
| Irritable bowel syndrome | Bloating, alternating constipation |
| Eating disorder/laxative abuse | Hx of food withholding/purging, previous eating issues, parental concerns |
| GIST/Carcinoid | Flushing, |
| ??Subacute SB obstruction | H/O abdo surgery, distension, |

**The nurses perform an ECG as she complains of some vague epigastric pain**



b) List the positive findings on the ECG (4 marks)

ST depression

T wave Inversion

U wave

Long QU /QT interval

c) What is the likely cause of this ECG abnormality (1 mark)

Hypokalaemia

d) What blood investigations would you consider ordering in ED to narrow your differential - with justification for each (16 marks)

FBC

EUC

LFT

CMP

TSH/T4/T3

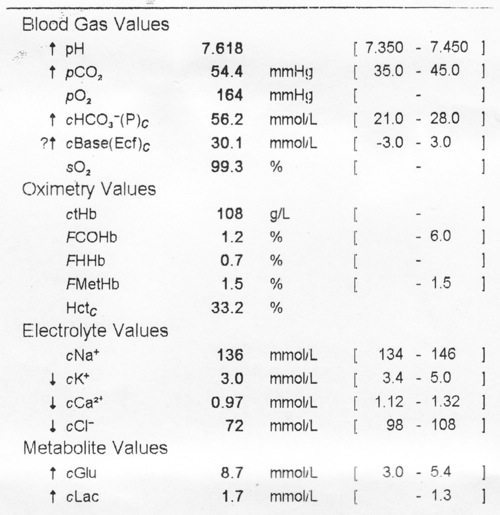
VBG

Inflammatory markers

Coeliac screen

**Q7**

**A 5 week old child presents to ED with vomiting. The mother brought her child to ED 3 days earlier and was sent home with a diagnosis of “overfeeding and reflux”. Mum states that the child has been very hungry but has become lethargic over the last 24 hrs and has only had 1 wet nappy. The child weighs 4kg. You estimate that they are moderately dehydrated (5%). The venous gas performed shows the following:**



a) What abnormality does this VBG show? (4 marks)

Hypochloraemic Hypokalaemic Metabolic Alkalosis

0.7(56) +20 = expected CO2 = 59 – so approximately ok

b) What is the likely cause? (1 mark)

Pyloric stenosis

c) List 2 of **surgical** differentials (2 marks)

Intussusception

Malrotation with volvulus

NEC

Incarcerted Hernia

c) What examination findings might you expect to see if your first differential is correct? (3 marks)

Prominent gastric waves

Palpable “olive”

Hungry baby

Witnessed projectile vomiting

d) Outline the fluid management for this child (assuming they are to be nil by mouth) (3 marks)

RESUS 20mls/kg (80mls) NaCl fluid bolus (optional depending on fluid status of child)

DEFICIT and MAINTAINENCE

- NaCl 0.9% plus 5% dextrose plus 20mmol/L KCl

Deficit – 5% x 4000g = **200mls**

Maintainence – depending on what the child is managing to take orally and not vomit

- total = **400mls/day**

**600mls/24hrs =** 25mls/hr

**Q8**

**A 56 year old male presents with fresh red PR bleeding and a lump that cant be “pushed back in anymore”. He is crying with pain. On inspection of the anus you see the following.**



He is unable to tolerate PR due to pain. He has no medical comorbidities and takes no medications.

a) What is the abnormality (3 marks)

Grade IV thrombosed and non thrombosed haemorrhoids

b) Outline the steps you would take to surgically manage this condition in the ED (5 marks)

Position on side or prone

Infiltrate local anaesthetic – lignocaine 1% plus adrenaline (+/- bicarb buffer) or bupivacaine 0.5% with adrenaline

Elliptical inscision in skin overlying the haemorrhoid

Expose and remove the thrombus

Control bleeding – small piece of gauze can be left tucked into would for a few hrs

Pressure dressing

c) Outline the discharge advice you will provide post procedure (6 marks)

Analgesia – can use panadol and nurofen, opiates can cause constripation

Laxatives – bulk and stool softners, micralax or glycerin suppositories when can tolerate

High fibre and low fat diet, plenty of water, exercise

Avoid constipating medications e.g. codeine

Warm baths – after 6-12 hrs

Return to ED if heavy bleeding or infection symptoms/signs

Review with GP in 24-48 hrs

If ongoing problems will need referral for haemorrhoidectomy/banding

d) d) List 3 patient groups in whom it is NOT appropriate to manage surgically in the ED (3 marks)

Immunocompromised

Children

Pregnant

Anticoagulated/Coagulopathy

**Q9**

**An 82 year old man presents with weight loss and jaundice. He is in the resus bay with full non invasive monitoring His observations, CT scan and blood results are shown below:**



**P110**

**BP 90/70**

**RR 26**

**Temp 38.9**

**Sats 90% RA**

**Hb 107**

**Plt 189**

**WCC 17.9**

**Bil 98**

**AST 74**

**ALP 367**

**GGT 620**

**Alb 23**

**Cr 378**

**Ur 13.5**

**K 6.4**

**Na 131**

a) What is the most likely diagnosis (2 marks)

Pancreatic head mass/malignancy, leading to biliary obstruction and ascending cholangitis

b) List the immediate actions you will undertake in the emergency department to manage and investigate this patient.(12 marks)

Fluid resuscitation with NaCl ( without KCl)

IDC with strict fluid balance

O2 to get sats >95%

CXR (mobile)

Analgesia as required

Antibiotics to cover cholangitis – e.g. ampicillin 1g, gentamicin 7mg/kg, metronidazole 500mg iv.

ECG to check for signs of hyperkalaemia

Calcium gluconate 10mls 10%

Salbutamol 20mg nebulised

Insulin and dextrose 10units in 50mls 50%

Check Coags, VBG and Cultures

Urgent surgical consult

Consider admission to HDU as anticipation

Discuss whether patient has pre-existing wishes around active treatment/advanced directive/ICU as likely to deteriorate with potentially incurable malignancy

The nurse calls you 2 hours later to say that the patient has become confused, has pulled out his drips and is trying to climb out of bed.

a) List 3 pharmacological options for managing **this mans** agitation (without him being intubated), with one pro and one con for each (9 marks)

|  |  |  |
| --- | --- | --- |
| **Agent/dose/route** | **Pro** | **Con** |
|  |  |  |
|  |  |  |
|  |  |  |

|  |  |  |
| --- | --- | --- |
| **Agent/dose/route** | **Pro** | **Con** |
| Analgesics – any appropriate suggestion | Also treat man, minimally sedating if used correctly | Opiates can cause resp depression (has sats of 90%) |
| IV Benzodiazepines e.g midazolam 5mg titrated | Rapidly works if given IV |  |
| IM Benzodiazepines e.g. midazolam 5mg | No canula required, | Painful, unreliable unpredictable |
| PO Benzodiazepines e.g. lorazepam 1mg | No drip needed, safe side effect profile | Patient may not take it when confused, patient |
| Ketamine, 0.5-1mg/kg IV or 2-5mg/kg IM | Haemodynamically more stable | Emergence, laryngospasm, vomiting |
| Propofol infusion titrated | Quick onset | Requires an infusion/IV line/HDU. High risk of oversedation/aspiration/haemodynamic upset |
| Typical antipsychotics e.g haloperidol 0.5-1mg po or im | Readily available, can be given IM if no IV, | Extrapyramidal, hypotension, tardive dyskinesia, anticholinergic SEs |
| Atypical antipsychotics e.g olanzapine 2.5-5mg | Less dystonic reactions/hypotension/antichol | Take time to work  Less dystonic reactions/hypotension/antichol |

There are many options here that are not included in this model answer

d) List 5 things that may be contributing to this mans confusion (5 marks)

Preexisting cognitive impairment

Pain

Full bladder/need to defaecate

Sepsis

Brain Mets

Medications e.g opiates

Hypoxia