QUIZ 2nd Sept 2020 (answers below)

1. **What are the CT grades of diverticulitis?**

2. **What is stercoral colitis?**

3. **What are the phases of contrast enhancement for abdominal CT?**

4. **What are the upper limits of normal bowel diameter?**

5. **Describe and interpret the following blood gas analysis.**

Blood Gas Values			
↓ pH	**6.888**		[7.350 - 7.450]
↑ pCO_2	**102**	mmHg	[32.0 - 45.0]
↓ pO_2	**21.5**	mmHg	[75.0 - 105]
Oximetry Values			
↓ *c*tHb	**128**	g/L	[130 - 180]
↓ sO_2	**12.8**	%	[95.0 - 99.0]
*F*COHb	**0.3**	%	[0.0 - 1.5]
*F*MetHb	**0.7**	%	[0.0 - 1.5]
Electrolyte Values			
cNa^+	**143**	mmol/L	[137 - 146]
↓ cK^+	**3.4**	mmol/L	[3.5 - 5.0]
cCa^{2+}	**1.18**	mmol/L	[1.15 - 1.30]
↑ cCl^-	**110**	mmol/L	[98 - 106]
Metabolite Values			
↑ *c*Glu	**12.3**	mmol/L	[3.0 - 7.8]
↑ *c*Lac	**10.3**	mmol/L	[0.0 - 2.2]
↑ *c*Crea	**131**	µmol/L	[60 - 120]
Calculated Values			
ABE_C	**-17.8**	mmol/L	[-]
$cHCO_3^-(P)_C$	**18.4**	mmol/L	[-]

Notes

↑	Value(s) above reference range
↓	Value(s) below reference range
c	Calculated value(s)

QUIZ answers 2nd Sept 2020

1. **What are the CT grades of diverticulitis?**

Stage Ia: phlegmon

Stage Ib: diverticulitis with peri colic or mesenteric abscess

Stage II: diverticulitis with walled off pelvic abscess

Stage III: diverticulitis with generalized purulent peritonitis

Stage IV: diverticulitis with generalized faecal peritonitis

2. **What is stercoral colitis?**

Stercoral colitis refers to a condition where the presence of impacted faeces in the colonic lumen is associated with inflammation and distension of the affected colon segment.

It is seen primarily in elderly patients (often bedbound as a consequence of dementia, stroke, or orthopaedic surgery). Less frequently, it may also be seen in younger patients who have metabolic, neurologic and/or muscular disorders causing constipation.

Faecaloid formation is predominantly related to chronic constipation that leads to the development of a faecaloma, which is a conglomeration of dehydrated faecal material. This causes distension of the colonic lumen and increases the pressure on the wall, which then decreases blood supply.

CT typically shows a distended colon filled with faeces and associated mural thickening. Other findings include fat stranding, mucosal sloughing, mesenteric hyperaemia and extra luminal gas (if complicated by stercoral perforation).

3. **What are the phases of contrast enhancement for abdominal CT?**

Non Enhanced CT

Detection of:

- *Stones in kidney, ureter, CBD*
- *Calcifications in liver, pancreas*
- *Fat in liver tumours, adrenal adenoma or myelolipoma*

Early Arterial Phase

- *15-20 seconds post injection*
- *Demarcation of vessels*
- *Detects aortic dissection and arterial bleeding*

Arterial Phase/Late Arterial Phase/Early Portal Phase

- *35-40 seconds post injection*
- *Enhances vascular lesions, stomach, bowel, pancreas, spleen, renal cortex*
- *Detects hepatic tumours, pancreatic tumours, bowel ischaemia*

Late Portal Phase/Hepatic Phase

- *70 – 80 seconds post injection*
- *Enhances hepatic parenchyma*
- *Detects hypovascular liver lesions – cysts, abscesses, most metastases*

Nephrogenic Phase

- *100 seconds post injection*
- *Enhances all renal parenchyma*
- *Detects renal cell carcinoma*

Delayed Phase

- *6 minutes post injection*
- *Enhances fibrotic lesions and kidney and urinary collection system*
- *Detects cholangiocarcinoma, fibrotic mets eg breast, renal transitional cell carcinoma*

4. What are the upper limits of normal bowel diameter?

3/6/9 rule
3cm for small bowel
6cm for large bowel
9am for caecum

5. Describe and interpret the following blood gas analysis.

pH	6.88		Acidosis
pCO_2	102	mmHg	Respiratory acidosis pCO_2 increase of 62, raises HCO_3 by 6.2mmol/L acutely HCO_3 would then be 24 + 6.2 = 30.2mmol/L pCO_2 102mmHg and HCO_3 30.2mmol/L --> pH 7.09 pH is 6.88 so there is a concurrent metabolic acidosis
HCO_3	18.4	mmol/L	Has fallen by 11.8 (from 30.2) mmol/L This is the metabolic acidosis
Anion gap	143 – (18.4 + 110) = 14.6 – slightly raised above 12		
Delta ratio	0.22		Pure normal anion gap metabolic acidosis ΔAnion gap / ΔHCO_3^- = 2.6/11.8
Lactate	10.3	mmol/L	Very high
Creat	131	mmol/L	Raised

➔ Respiratory acidosis
Normal anion gap metabolic acidosis (renal impairment)
High Lactate (seizure, sepsis, shock)