



The Weekly Probe

24th March 2016

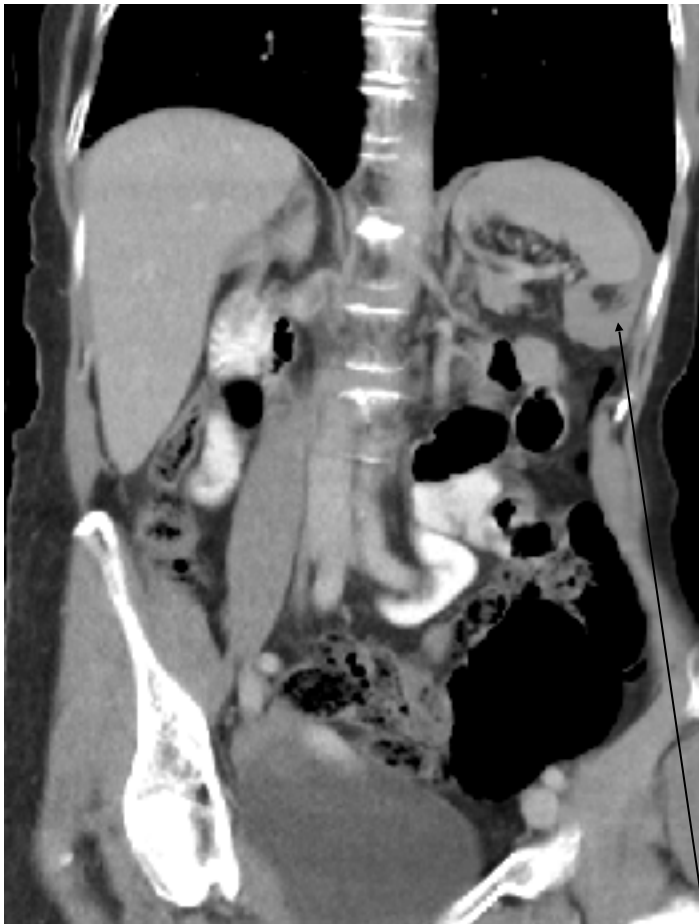
Volume 13 Issue 7

THIS WEEK

Splenic Injury Post colonoscopy
Anaemia
Next week's case
Joke / Quote of the Week
The Week Ahead

Splenic Injury post colonoscopy

65yo lady presents with LUQ and shoulder tip pain post colonoscopy. O/E afebrile – mild tenderness yet distressed on lying on her back or left ++ - No free gas on CXR . What could be going on?



The patient's abdo CT showed a small splenic laceration with subcapsular haematoma. This was managed conservatively with nil problems.

COMPLICATIONS — It is not uncommon to see patients with different symptoms post colonoscopy. Up-to- date lists a number of complications post colonoscopy. These include:

- **Anaesthesia / sedation related complications**

- **Complications related to preparation** - fluid and electrolyte disturbances, nausea, vomiting, abdominal bloating, abdominal discomfort, aspiration, and oesophageal tears from vomiting.
- **Bleeding** — usually associated with polypectomy and stricture dilation – may be immediate or delayed
- **Perforation** — from mechanical trauma exerted by the colonoscope, from barotrauma or from electrocautery injury during polypectomy. Symptoms depend on whether the perforation is intra or extraperitoneal (minimal or atypical symptoms)
- **Postpolypectomy syndrome** —from electrocoagulation injury to the bowel wall, with subsequent creating a transmural burn and focal peritonitis without frank perforation. Presents with symptoms similar local perforation with fever, focal abdominal tenderness 1-5 days following polypectomy.
- **Gas explosion** — What a way to go! One death and other causes of bowel injuries has been reported as a result of a gas explosion with electrocautery igniting methane gas in the colonic lumen. Other explosions have been reported

However one complication not listed in up-to-date is **splenic injury**. An article by Sarhan notes that there have been 80 cases published on splenic injury post colonoscopy, some fatal.

The mechanism may be tension on the splenocolic ligament or on pre-existing adhesions due to manipulations of the colon, or as a result of a direct injury to the spleen during passage through the splenic flexure. Intraperitoneal adhesions or any underlying splenic pathology may increase the risk.

Similar to other cases of splenic trauma, management depends on the haemodynamic stability, ongoing bleeding, the presence of other comorbidities / age of the patient, and therapeutic options – conservative Mn, interventional radiology , surgery.

Refs - Sarhan M et al Splenic Injury after Elective Colonoscopy, J Society Laparoendoscopic Surgeons . 2009 Oct-Dec; 13(4): 616–619

ANAEMIA

78yo man with a history of a recent aortic valve repair presents with exertional SOB. He is found to have a Hb 78 – macrocytic normochromic picture– Bilirubin 92 with otherwise normal LFTs. What is going on ?

We see a significant amount of anaemic patients in the ED. One article from 2015 looked at an approach to evaluation in the anaemic patient- as the name suggests “Anaemia: An approach to evaluation 2014” by Kuriakose available [online](#).

Microcytic (MCV < 80 fL) Normocytic (MCV 80-100fL) Macrocytic (MCV > 100fL)

MICROCYTIC

1. Iron Deficiency Anaemia (IDA) – serum ferritin is the key test +/- Total iron binding capacity (TIBC) /transferrin saturation/ serum iron).

The complicating issue with using ferritin alone is that it is an “acute phase reactant “ which will rise with inflammatory problems and you need to use the other components of the iron studies.

When distinguishing IDA from anaemia of chronic disease (ACD) , the ferritin is classically low in the former but the TIBC will be high in IDA and often low or normal in ACD.

A rise in the platelet count may also be suggestive of iron deficiency.

Another parameter mentioned that I had never looked at is the RDW or Red cell distribution width which:

- if increased this favours the diagnosis of IDA
 - if the RCW is normal, a increase in the red cell count may be suggestive of thalassaemia trait
2. Thalassaemia – abnormal globin synthesis with microcytosis. First test is haemoglobin electrophoresis (HbEPG) yet this does not always detect the presence of thalassaemia
 - a. Alpha thal – spectrum of 1-4 genetic defects – 1 defect =carrier – 2 = mild anaemia – 3 severe anaemia (Haemoglobin H) – 4 fatal. HbEPG may be normal if 1-2 defects

b. Beta thal – trait or symptomatic Dx

3. Other:

a. Anaemia of Chronic Dx- see below

b. Sideroblastic anaemias – uncommon – increased RDW – acquired (malignant Dx of the bone marrow, alcohol, lead) or hereditary

Table 1: Differentiating between IDA, ACD, and combined IDA/ACD using iron studies			
	IDA	ACD	Combined anemia (IDA/ACD)
Iron	Decreased	Decreased	Decreased
Transferrin	Increased	Decreased-normal	Decreased
Transferrin saturation	Decreased	Decreased	Decreased
Ferritin	Decreased	Normal-increased	Decreased-normal
Soluble transferrin receptor	Increased	Normal	Normal-increased

IDA: Iron deficiency anemia, ACD: Anemia of chronic disease

NORMOCYTIC ANAEMIAS

1. Anaemia of Chronic Disease- need appropriate clinical context with otherwise unremarkable blood film. Probably related to cytokine mediated inhibition of RBC production or interference with erythropoietin production / function

Usually normocytic yet can be microcytic

2. Bone marrow disorders - via marrow infiltration or marrow aplasia – seen with other components of pancytopenia – normochromic / cytic yet can be macrocytic

3. Combined iron deficiency with vitamin B12 / folate deficiency

4. Haemolytic anaemias – which are associated with evidence of :

- cellular destruction (raised LDH),
- increased Hb catabolism (raised bilirubin),
- decreased haptoglobin (which binds free Hb + is then removed by RE cells),
- increased RBC production (raised retic count),
- urinary haemosiderin (evidence of intravascular haemolysis).

Categorised as either:

- Extravascular (in spleen or liver)
 - i. red cell intrinsic – spherocytosis, elliptocytosis, sickle cell
 - ii. immune mediated – Autoimmune with Coombs +ve
 1. warm (idiopathic, SLE, other autoimmune Dx, CLL, lymphomas , drugs)
 2. cold (idiopathic, infections (mycoplasma, EBV), SLE, lymphoma
- Intravascular – lysis within blood vessels – microangiopathic anaemias – assoc with DIC, TTP / HUS , malignant Ht'n- blood film contains RBC fragments
- Other causes of haemolysis (most IV) include:
 - iii. Sickle cell Dx
 - iv. hypersplenism

- v. infections - malaria, clostridia
- vi. extensive burns
- vii. tox – oxidising drugs such as dapsone, chemical poisoning – lead
- viii. hypophosphataemia

Table 2: Differentiating between intravascular and extravascular hemolysis

	Intravascular	Extravascular
Reticulocyte count	Increased	Increased
Lactate dehydrogenase	Increased	Increased
Indirect bilirubin	Increased	Increased/normal
Haptoglobin	Decreased	Decreased
Urinary hemosiderin	Present	Absent

MACROCYTIC ANAEMIA

1. **Folate deficiency** – recent dietary changes can effect serum levels so check RBC folate levels
2. **Vit B12 deficiency**– may be falsely low in the elderly, pregnant patients or in those with low WBC counts
3. **Misc:**
 - alcohol
 - Drugs- hydroxyurea, chemo agents, AZT
 - Liver Dx , hypothyroidism, haemolysis with increase in reticulocytes
 - Primary bone marrow dx – myelodysplasia, aplastic anaemias, myeloma

Progress: The patient was found to have a coombs +ve haemolytic anaemia of unknown aetiology (with reticulocytosis) which responded to steroids and supportive Mn including transfusion

Refs – Kuriakose P Anaemia: An approach to evaluation, 2014 *CHRISMED J Health and Research* Apr-Jun 2015; 2(2): 9599 / Hoffbrand AV , Pettit JA, *Essential Haematology* Blackwell Scientific publications

NEXT WEEK'S CASES

A patient presents with a laceration of the dorsal PIP. They can extend the DIP and PIP. Could the tendon be divided ? If so which one and what test do we use to check this?



62yo lady with a Hx of HT'n, DM and IHD presents with sudden onset of bilateral visual loss and headaches. BP 190/110 – obs otherwise normal Unable to see light / dark - Pupil reactive to light- Fundi normal. What is going on?



"I'm thinking about having a child"

WOL
KATA

Please forward any funny and litigious quotes you may hear on the floor (happy to publish names if you want)

THE WEEK AHEAD

Tuesdays - 12:00 – 13:45 Intern teaching -Thomas & Rachel Moore

Wednesday 0800-0900 Critical Care Journal Club. ICU Conf Room / 12.00-1.15 Resident MO in Thomas & Rachel Moore

Thursday 0730-0800 Trauma Audit. Education Centre / 0800-0830 MET Review Education centre / 1300-1400 Medical Grand Rounds. Auditorium.