Chronic intestinal pseudo-obstruction in SLE.

G.Perlemuter et.al.

Introduction.

- Chronic intestinal pseudo-obstruction (CIPO) – clinical syndrome characterised by ineffective intestinal propulsion.

- Involvement of visceral smooth muscle, enteric nerves, or visceral autonomic nervous system.

- Primary or secondary.
  - Nervous, endocrine, metabolic.
  - Intra-abdominal inflammation, infiltrative and connective tissue disease.
  - Drug induced states.

- Mild GI manifestations – nausea, vomiting, diarrhoea and abdominal pain - common CIPO – rare in SLE.
Is CIPO rare in SLE?

Current article described 5 patients reported from 1988 – 1993 in France.

Mok M.Y and colleagues from Queen Mary Hospital in Hong Kong reported 6 cases and review 12 other cases from English literature in Lupus vol 9: no 1 (2000); 11 – 18.

J. Narvaez et. Al of Rheumatology Unit, Spain, reported a case of CIPO and review 21 other cases previously reported in England.
Materials and method.

- 5 women, 19 – 39 y.o (mean 33)- hospitalised for GI manometry studies.
  - 3 – known SLE – food intolerance.
  - 2 – no underlying disease – food intolerance.
- Symptoms for at least 6 months.
  - Abdominal pain, vomiting, abdominal distension, diarrhoea, constipation, weight loss.
- Investigations.
  - 4/5 – plain AXR – gaseous distension of small bowel and presence of fluid in bowel loops on upright films.
  - Gastroscopy, colonoscopy and small bowel series – did not show mechanical obstruction.
  - 1/5 – laparotomy (extensive vomiting despite normal X-Ray film - normal
Materials and method.

- Urinary echography and/or intravenous urography – in all.

- Manometric studies:
  - Antroduodenal or small bowel manometry in all
  - Oesophageal manometry in 4 patients.
The association of S & S of mechanical obstruction in the absence of occluding lesion of intestinal lumen are in accordance with the criteria of Schuffler et al and Christensen et al for CIPO.
Diagnosis of SLE – 3 patients.
- At least 4 ACR criteria. (1 – had 3)
- Sjogren suspected in 1.
Patients` characteristics.

- Nausea, vomiting, diarrhoea and or constipation – in all.
- CIPO – onset feature in 2 SLE patients.
- CIPO – 1, 7, 11 years after SLE diagnosed.
Plain AXR (upright film)

- Gasseous distension of small bowel with fluid in bowel loops.
4 / 5 had urological involvement with reduction of bladder capacity and bilateral ureteral distension.
Oesophageal manometry.

- Done in 4 patients.
- Absent peristalsis in lower 3\textsuperscript{rd} in 2 patients.
- Absent peristalsis of whole length in 1 patient.
- Quantitative solid phase gastric emptying studies done in 2 patients – using Technetium – 99m showed delayed gastric emptying.
Stomach and proximal small bowel motility.

- During 3 hour fasting period.
  - 1 / 5 – normal amplitude and propagated phase 111 duration of manometry – however, delayed gastric emptying shown on gastric scintigraphy.
  - 4 / 5 – low phase 111 amplitude of contractions (<20 cm H2O) and infrequent contractions on phase 2 (< 1 contraction every 20 minutes)

- Postprandial small bowel motility.
  - Recorded in 3 patients.- almost total lack of contractions during 2 hours of recording.
  - 2 patients – unable to record – vomiting post prandial.
Stomach and proximal small bowel motility

- Pharmacologic stimulation of GI motility performed in all:
  - 3 agents:
    - 100 mg I/V Trimebutamine &
    - 100 mcg s/c octreotide –induce phase 111 starting from duodenum
    - 500 mg oral erythromycin – alone or 1 hour after octreotide – induce phase 111 from the antrum.

Pharmacologic stimulation increased digestive motility and generate phase 111 like activity with low amplitude of contractions in all except patient who had normal recorded phase 111.
Clinical course.

- Treatment of patients and outcomes.
  - All patients received parenteral nutrition and 6/52 oral antibiotic regimen.
Clinical course.

- Small bowel motility improved in all patients in 3 days to 8 weeks – diarrhoea and vomiting – disappeared.
- Oral feeding resumed progressively with low residue diet, parenteral nutrition stopped in all as early as 2 weeks up to 8 weeks.
- 4 / 5 - Prednisolone tapered off after 2 months of digestive improvement.
- 4 / 5 – remission at 48 – 60 months.
- Bladder capacity normalised, ureteral distension – decreased.
- In 2 patients, small bowel manometry – a year later – normal phase 111.
Clinical course.

- 1 / 5 – died.
  - Cause of death – cerebromeningeal haemorrhage.
  - 5 months after onset of digestive symptoms.
  - Only patient not given high dose immunosuppression for digestive symptom, but recovered after 2 weeks.
- Post-mortem:
  - Severe lesion of esophagus and colon.
  - Extensive fibrotic process in muscularis layer (thin and lack of smooth muscle cells).
  - Innervation – normal.
  - Polymorphic cellular infiltration of mucosa and submucosa of oesophagus.
  - Mild vasculitic changes in some vessels.
  - Brain histology – marked vasculitis.
Prior to this paper, CIPO was well known to complicate progressive systemic sclerosis and dermatopolymyositis.

This study proposes that SLE should be added as a cause of CIPO.

- Abnormalities of stomach and small bowel motility – hypomotility.
- Paralytic ileus and fluid in bowel loops.
- Post mortem examination – suggests myogenic type.
- ? Heterogenous pathophysiology – 1 patient has normal phase 111 despite GI symptoms and delayed gastric emptying on scintigraphy – still need to consider neurologic type of CIPO as in Ssc.
Discussion

- Urinary tract involvement.
  - Uncommon.
  - 4 patients. – reduced bladder capacity and bilateral ureteral distension.
  - 1 patient with normal phase 111 – urinary tract not involved.
  - Together with GI hypomotility – extensive smooth muscle involvement in SLE.
  - Smooth muscle involvement secondary to vasculitis.
Survival rate.

- Survival rate in largest published series of bowel vasculitis during SLE < 50%.
Conclusion.

- CIPO can reveal or complicate SLE.
- Severe situation.
- Can lead to death.
- Potentially reversible with treatment.
- Smooth muscle involvement – can be associated with oesophagus, bladder and ureter involvement.
- High dose corticosteroids, parenteral nutrition, oral antibiotics and pharmacological stimulation of small bowel motility - effective for both digestive and urinary tract symptoms.
Mok M.Y and colleagues (Queen Mary Hospital, HK)- 2000.

- Reported 6 cases and reviewed 12 from English literature.
  - Fulfilled ACR criteria of SLE.
  - Mean age of onset – 29.
  - Female:male = 16:2
  - 9 / 18 – initial presentation of lupus.
  - All – active lupus serology.

- Intestinal pseudo-obstruction (IpSO) – defined as presence of clinical features suggestive of intestinal obstruction but without organic obstruction.
Other reported descriptions

- Mok M.Y and colleagues (Queen Mary Hospital, HK)- 2000.
  - Presentations.
    - Absent bowel sounds with presence of multiple fluid levels on plain AXR.
    - Exclusion of organic obstruction by imaging or surgical procedure.
  - Treatment.
    - 12 / 18 – high dose steroid.
    - 6 / 18 – maintenance with Azathioprine – good effect.
  - Response – good.
  - Apparent association.
    - 12 / 18 Bilateral ureterohydrenephrosis – dysuria with negative urine culture.
Other reported descriptions

- Mok M.Y and colleagues (Queen Mary Hospital, HK) - 2000.
  - Conclusions.
    - IpSO – uncommon, but important manifestation of SLE.
    - Underlying pathology – not fully understood.
    - May be related to immune-complex deposition.
    - Co-existing ureterohydronephrois suggests a central smooth muscle mobility problem of neuropathic or myogenic pathophysiology may be secondary to vasculitis.
    - Early recognition – important.
Other reported descriptions.

  - Reported their 1 case of IpSO in SLE and review 21 other previously reported in England.
  - In 41% - initial manifestation of underlying SLE.
  - Apparent association with ureterohydronephrosis and interstitial nephritis.
  - Respond to high dose steroids.
  - High level of awareness – avoid surgery.
Gastrointestinal manifestations of SLE.


A case report.
Case 1.

- 40 / C / F, SLE with MSK, ANA (+), anti DsDNA(+).
- No visceral, renal or neurological involvement.
- Admitted with epigastric pain, watery diarrhoea (non-bloody), nausea and vomiting.
- Clinically, no external features of active SLE. Abdominal exam – no distension or evidence of peritonism.
- FBC, LFT, RP – Normal.
- ANA(+), hypocomplementaemia, high ESR.
- DsDNA, ACA, ANCA, LA – negatives.
Case 1

- Plain AXR and gastroscopy – no abnormality.
- Abdominal CAT scan.
  - Thickened small bowel loops.
  - With contrast enhancement, - consistent with small bowel ischaemia.
  - Ascites and interloop fluid collection.
- Ba meal and follow through - normal.
Case 1

- Diagnosis – small bowel lupus vasculitis.
- Patient treated with I/V hydrocortisone and subsequently oral corticosteroid.
- Abdominal symptom resolved 2/52 after treatment.
- Repeat CT abdomen 2/12 later:
  - Resolution of small bowel oedema.
Case 2.

- **22 / C / F.**
  - 3/12 hx of lower abdominal pain, diarrhoea and 7 kg weight loss.
  - **O/E:** cachectic, alopecia and distended abdomen.
  - **Investigations:**
    - Normochromic, normocytic anaemia.
    - High ESR.
    - Slightly reduced serum albumin.
    - RP / LFT / Coag – normal.
    - ANA, DsDNA – Positive.
    - Hypocomplementaemia.
    - 24 hour urinary protein – 6.8 g/l.
Case 2

- AXR- dilated small bowel loops with air-fluid interface.
- Abd CAT scan.
  - Ascites, thickened small bowel loops with mixed attenuation of mesenteric face.
- Small bowel enema.
  - Showed dilated small bowel loops with markedly thickened wall.
  - Delayed transit time.
- Diagnostic laparoscopy.
  - Unrevealing.
  - Ascitic fluid did not reveal AFB.
Case 2

- Concomitant dilated ureter and distended pelvi-calyceal system.
  - Urinary bladder with contracted irregular walls – TB(?)
  - IV urogram – distended pelvi-calyceal and ureteric system, no evid of obstruction.
  - Flex cystoscopy – mild cystitis
  - Biopsy – negative for TB and malignancy
Case 2.

- Diagnosed as SLE with intestinal pseudo-obstruction, obstructive uropathy and nephrotic syndrome.
- Progress.
  - Treat with a course of seroids and empirical TB treatment.
  - 6/12 – recurrent admission for constipation, abdominal pain and distension, weight loss (39 kg).
  - Rpt CAT abdomen – dilated small bowel loops.
  - Placed on home TPN and azthioprine as steroid sparing agent.
  - After 6/12 – weight increase to 44 kg, serum albumin 42 g / l.
  - TPN phased out.
  - Maintained with enteral feeding for 2 years.
  - SLE quiescent.
  - However, still suffer from chronic constipation and need admissions for enema.
Case 3.

- 24 / F,
  - SLE for 2 years.
  - Admitted for generalised abdominal pain, with vomiting and diarrhoea.
  - 1/52 prior – SLE noted quiescent.
  - O/E :
    - Cushingoid.
    - Per abdomen – guarding and rebound tenderness.
    - Absent bowel sound.
    - Erect CXR – no free air under diaphragm.
Case 3.

- Diagnosed as acute abdomen and underwent emergency laparotomy.
  - Slightly turbid ascitic fluid and small bowel wall – normal.
  - Ascitic fluid culture – negative.

- Impression serile serositis
- Responded to corticosteroids.
Lupus vasculitis.

- Literature review – 2% of SLE.

- Si Hoe et al reported 30 / 54 SLE patient who had abdominal symptoms went for abd CAT scan - small bowel thickening.


- Other causes of mesenteric vessel insufficiency:
  - Thrombosis 2°to APS.
  - Valvular heart disease.
  - Cardiac arrhythmias
  - Illicit drug usage – vasoconstriction – cocain.
Lupus vasculitis

- Vasculitis in SLE:
  - May involve any part from oesophagus to colon.
  - Tendency to affect the distribution of Superior mesenteteric artery (ie small bowel).

- Severity ranging from:
  - Mild colitis with diarrhoea, mucosal ulceration and haemorrhage.
  - Intestinal infarction and perforation.

- Other documented site (less common):
  - Colonic ulcer, splenic flexure, sigmoid colon, rectum.
  - Perforation of transverse colon.
Lupus vasculitis

- Manifestations of vasculitis tend to occur during flare or impending flare of underlying disease.
Lupus vasculitis.

- Diagnosis difficult – as it frequently involve small bowel and inaccessible by std endoscope.

- Need prompt diagnosis to prevent explorative laparotomy.

- Value of imaging:
  - Plain AXR – little diagnostic value.
  - Mesenteric angio – not useful – as it involve small vessels c.f medium sized vessels.
  - Abd CAT scan – promising tool in the evaluation of GI vasculature.

  Direct observation of intestinal wall thickness and info on abdominal mesentery and mesenteric vessels.
Lupus vasculitis

- Characteristic CAT scan findings of small bowel vasculitis.
  - Small bowel thickening with prominence of mesenteric vessels.
  - However, it can also occur in hypoalbuminaemia, inflammatory bowel disease, and gastroenteritis.
Lupus vasculitis

- Main treatment for lupus mesenteric vasculitis:
  - High dose corticosteroids.
  - Pulse treatment with I/V Cyclophosphamide – sometimes needed.
CIPO.

- Unknown etiology.
- Ineffective intestinal propulsion.
- Involvement of visceral smooth muscle, enteric nerves and visceral autonomic nervous system.
- Underlying cause – unknown.
- Post-mortem – suggestive of myogenic type.
CIPO.

- Known to be associated with urologic manifestation.
- Association between GI and cystitis in SLE appears to represent a distinct subgroup with poor prognosis despite aggressive immunosuppression.
- Both GI, urology manifestations reversible with high dose steroids and TPN.
- But, long term outcome – unknown.
Corticosteroids:
- May reverse inflammatory cystitis.
- Normalise bladder capacity and ureteric distension.
- Improves small bowel motility (resolution of inflammatory changes in intestinal smooth muscle with immunosuppressive therapy).
Serositis.

- Ascites in SLE- more likely due to peritoneal serositis.
- May be related to co-incidental nephrotic syndrome (but Ko et al – ascites – infrequent finding in nephrotic syndrome).
- Serositis can develop when SLE is inactive.
- Resolve with high dose steroids.
- Exporatory laparotomy may be carried out to exclude perforation.
THANK YOU.