

Combined Meeting

Supervisor: Dr. 連楚明
Presenter: 羅志威
101.02.15

Patient Information

- Gender: female
- Age: 84 y/o
- E4V5M6
- TPR: 34.4 / 95 / 22 BP: 91/68 mmHg
- SpO2: 100%
- 檢傷主訴：腹痛
- Triage: 2
- Date to our ER: 2012/01/XX

Chief Complaint

- Abdominal pain for 2~3 weeks, worsen today

Present Illness

- Long-term epigastric pain.
- Suffered from severe general abdominal pain since this morning → 兒子表示從來沒看過她那麼痛
- Nausea(+), Vomiting(+)
- No diarrhea
- → referred from GI Dr.

Past History

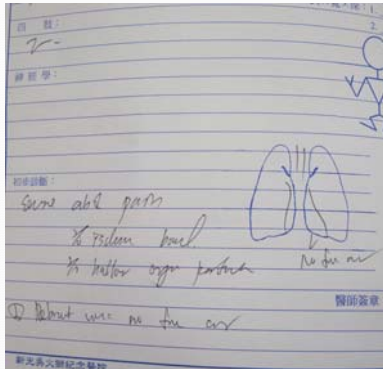
- Underlying:
 - Major depressive disorder
 - Hypertension
 - OP: hepatic cyst s/p biopsy
 - Alcohol/smoking: (-) / (-)
 - Occupation: house wife
 - Travel Hx: denied foreign traveling in recent 1 year
 - Allergy: No known drug/food allergy

PE

- GCS E4V5M6
- Abdomen: distended; hypoactive bowel sound; pain out of portion over epigastric area



PE



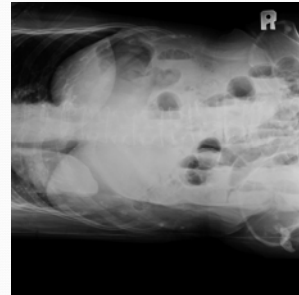
ER Order

- IVF: N/S 300ml full run, then 60ml/hr
- NPO
- CBC/DC/Plt
- PT/aPTT
- BUN/CR, Na/K, GOT, Glu, Bil-T, Lipase
- VBG₃
- B/C x II
- CXR, KUB, Abd left decubitus
- ECG
- Keto ramp

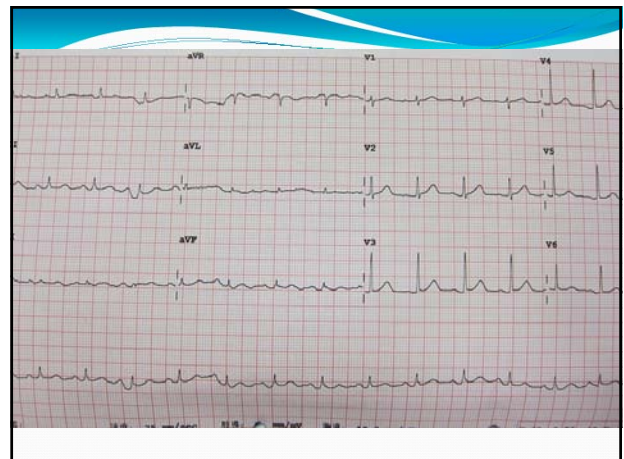
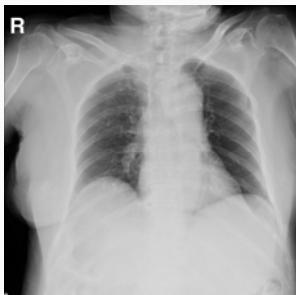
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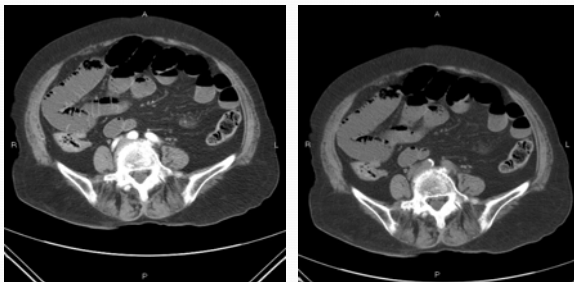
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Lab			CBC/Platelet/DC		
Glucose	229	mg/dL	WBC	8.4	x1000/uL
GOT(AST)	34	U/L	RBC	4.88	million
BUN	78	mg/dL	Hb	14.8	gm/dl
Creatinine	4.9	mg/dL	Ht	43.5	%
Na	135	meq/L	MCV	89.1	fl
K	5.5	meq/L	MCH	30.3	pg
eGFR	8.44		MCHC	34.0	%
T-Bilirubin	0.3	mg/dL	RDW	13.4	%
Lipase	20	U/L	Platelet	250	x1000/uL
PT	17.9	second	Differential count	*****	
Normal control	10.6	second	Segmented Neutro.	38.0	%
INR	1.65	Ratio	Lymphocyte	8.0	%
APTT	38.5	second	Monocyte	6.0	%
Normal control	32.8	second	Eosinophil	0.0	%
			Basophil	0.0	%
			Atypical lymphocyte	0.0	%
			Band	45.0	%
			Metamyelocyte	3.0	%
			Myelocyte	0.0	%
pH=7.197 PCO2=31.1 mmHg PO2=25 mmHg BE=-16 mmol/L HCO3=12.1 mmol/L TCO2=13 mmol/L SO2=34 %					

- 12:00 discuss Abdominal CT with/without contrast with family → Cr ↑, 有可能洗腎; family 表可接受

Abdominal CT



CT report

- Dilatation of the entire small intestine with lack enhanced bowel wall at short segment of proximal jejunum and long segment of ileum. Minimal intramural noted.
- There is minimal perienteric edema but no obvious ascite.
- Main trunk of the SMA is patent but relatively small caliber and minimal area of mural thrombus noted**

Pathology

- areas of ulceration and hemorrhagic necrosis with neutrophil infiltration.
- The submucosa is edematous thickening and congestion.
- The above pictures are **consistent with ischemic change**
- The mesentery reveals congestion.
- No thrombosis is found in small intestine and mesentery.**

- Fever up to 39.0C after operation
- Day 3

- Day 3 轉入 SICU
- Day 7 transferred to ward

CBC+DC		
WBC	16.7	x1000/uL
RBC	3.77	million
Hb	11.1	gm/dl
Ht	32.9	%
MCV	87.2	fl
MCH	29.4	pg
MCHC	33.7	%
RDW	13.8	%
Segmented Neutro.	86.5	%
Lymphocyte	4.0	%
Monocyte	1.0	%
Eosinophil	0.0	%
Basophil	0.0	%
Atypical lymphocyte	0.0	%
Band	8.5	%

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Lymphocyte	4.0	%
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Eosinophil	0.0	%
Basophil	0.0	%
Atypical lymphocyte	0.0	%
Band	8.5	%
CRP	5.470	mg/dL

- Day 9 try water
- Day 9 try soft diet

Discussion: ischemic bowel disease

Etiology

- Risk factors:
 - **Atherosclerosis**
 - Arrhythmias
 - Hypovolemia
 - Congestive heart failure
 - Recent myocardial infarction (MI)
 - Valvular disease
 - **Advanced age**
 - Intra-abdominal malignancy

Common symptoms

- Cramping abdominal pain
- postprandial pain(mesenteric ischemia)
 - 約20~30分鐘後
- Nausea/vomiting
- Diarrhea/ frequency defecation
- Constipation
- Bloody stool

Causes

- Acute thrombotic and acute embolic mesenteric **artery** ischemia
- Visceral **venous** thrombosis
- Chronic mesenteric ischemia
- **Nonocclusive** mesenteric ischemia
 - Shock bowel
 - Medications
 - Ergot alkaloid/ergotamine
 - Norepinephrine/ dopamine administration
 - Anti-diarrhea: alosteron(5-HT₃ blocker)
 - Cocaine usage

POSSIBLE diagnostic tools

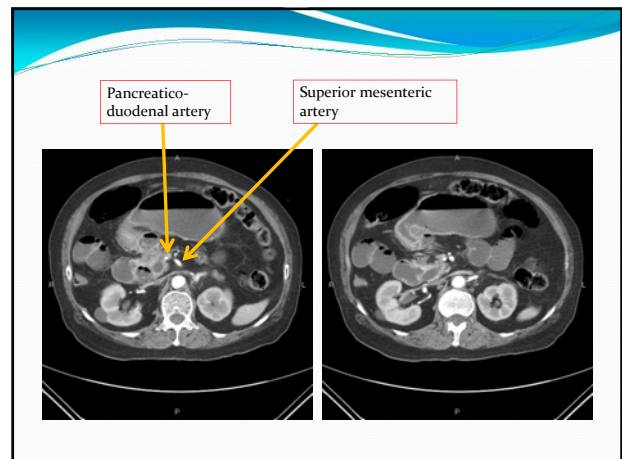
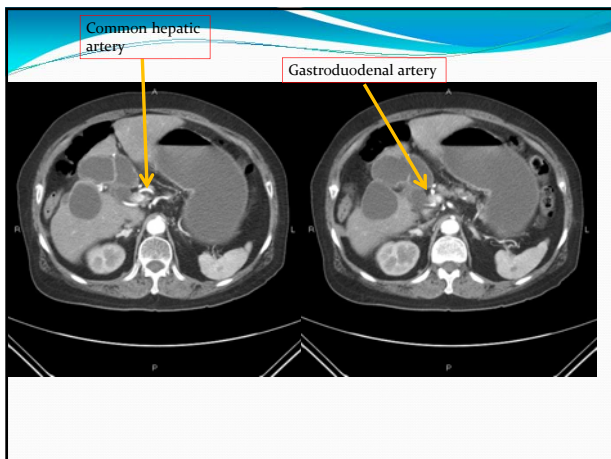
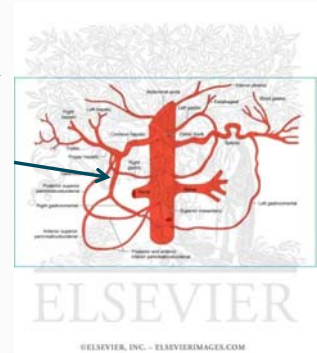
- Serum marker
 - D-lactate:
 - bacteria growth ↑ , bowel wall permeability ↑
 - D-lactate ↑
 - glutathione S-transferase(GST)
 - intestinal fatty-acid binding protein (i-FABP)
 - liver fatty-acid binding protein(L-FABP)
 - ileal bile acid binding protein (I-BABP)

Serum markers and intestinal mucosal injury in chronic gastrointestinal ischemia., van Noord D, et al. Dig Dis Sci. 2001 Feb;56(2):506-12
Early diagnosis of intestinal ischemia using urinary and plasma fatty acid binding proteins. Thuijls G, et al. Ann Surg. 2001 Feb;253(2):303-8.

Chronic mesenteric ischemia

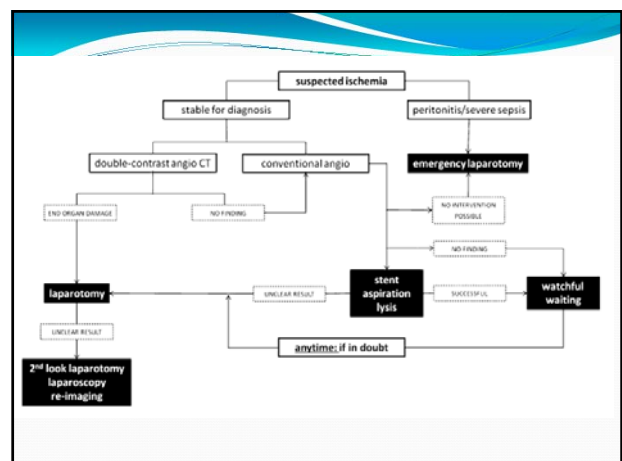
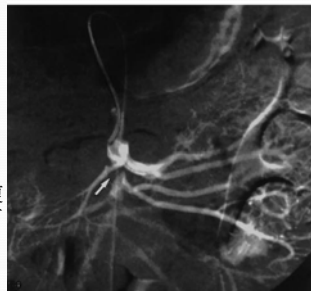
- Causes
 - Atheroma** over visceral artery is dominated
 - Takayasu arteritis
 - Dysplastic lesions

- Collateral artery的流量決定ischemia or not
 - Celiac artery→ SMA: pancreatico-duodenal artery
 - IMA→SMA: paracolic arch(Riolan arch), marginal artery of Drummond



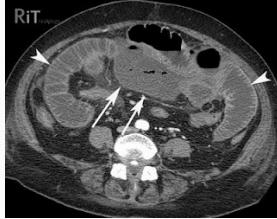
Acute versus chronic ischemia

- 簡單來說...
- Chronic
 - 主要塞在artery的 proximal
 - 常有良好的collateral artery system
 - 若新發生，更嚴重的腹痛→ consider acute; 可在OP前先做 angiography



CT characteristics

- Poor wall enhancement
- Bowel wall thickening/ pneumatosis



Patterns of wall enhancement

- White attenuation: 跟 vein 一樣亮
 - Inflammatory bowel/ vascular
- Gray attenuation: 跟 muscle 一樣
 - D/D: malignancy
- Water:
 - Idiopathic inflammatory bowel disease
 - Infection
 - Vascular disorder
 - Radiation damage
- Fat
 - Crohn disease
 - Inflammatory bowel
- Black (pneumatosis)
 - Ischemia
 - Infection
 - trauma

White	Gray	Water Halo	Fat Halo	Black
1*	2*	3*	4	5

Figure 1. Plot summarizes the spectrum of five attenuation patterns observed in bowel wall disease. * = use of intravenously administered contrast material is required to assess the pattern accurately.

Thanks for your attention.