Case conference

ACUTE ABDOMINAL PAIN

報告人：R1吳冠蓉
指導臨床教師：V.S林立偉
日期：2013-08-13

CLINICAL SCENARIO

- Gender : Male
- Age : 70 years old
- Time: DAY1(ER), DAY4(discharge)

- Consciousness: clear
- Vital sign: BP: 157/91 mmHg, PR:64bpm, RR: 18cpm, BT: 36.8'C, SpO2:99%; VAS: 7
- BW: 72kg; BH:167cm; BMI:25.81

CLINICAL SCENARIO

Chief complain:

- Sudden onset of acute abdominal pain while swimming today

CLINICAL SCENARIO

- Present illness:
  - Sudden onset of acute abdominal pain while swimming with hard kicks today
  - Denied hit objects, denied trauma
  - No radiation pain, no back pain
  - Not correlation to position or movement
  - Denied fever, rhinorrhea, sore throat, headache, general weakness, chest pain/tightness, diarrhea, N/V,
  - Denied TOCC history

CLINICAL SCENARIO

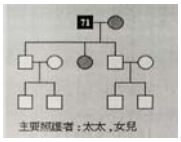
Past history:

- Left femoral neck fracture s/p ORIF in 1995
- BPH s/p TURP in 2003
- Right femoral neck fracture s/p ORIF in 2005

- HTN
- HBV carrier
- Right OA knee

CLINICAL SCENARIO

- [Family History]
  - 1.Diabetes mellitus: No
  - 2.Hypertension: No
  - 3.Myocardial infarction: No
  - 4.Malignancy: No
  - 5.Stroke: No
  - 6.Sudden Death: No
  - 7.Others: No
- [Hereditary Disease]
  - 1.G6PD deficiency: No
  - 2.Thalassemia: No
  - 3.Others: No



CLINICAL SCENARIO

- [Personal and Social History]
  - 1.Alcohol(喝酒): No
  - 2.Tobacco(吸菸): No
  - 3.Betel Nut(檳榔):No
  - 4.Street drug/IV drug:No
- [Allergic History]: Tofranil(25), 安眠藥

PE:

BW: 57.37kg; BH:167cm; BMI:25.81 ; GCS: E4M6V5

DAY1

Temp：36.8; **Respiratory Rate**：18
Pulse Rate：64
Blood Pressure: 157/91 **SpO2:**99%

Consciousness: Clear **Head**：No deformity **ENT**：Grossly normal
Neck：Soft, no tenderness, no palpable mass. no jugular vein engorgement, no goiter **Lymph Nodes**：No LAPs

Chest：
Symmetric expansion,
No focal tenderness
No chest wall lesion
BS: clear

Pulses：intact and strong, symmetric
Heart：Regular heart beats with No murmur

PE:

DAY 1

Extremities:No leg edema, Free movement with full ROM, No clubbing finger

Skin：No cyanosis, No focal erythema

Eyes：
Conjunctivae: not anemic
Sclera: not icteric
no nystagmus
pupils: isocoric

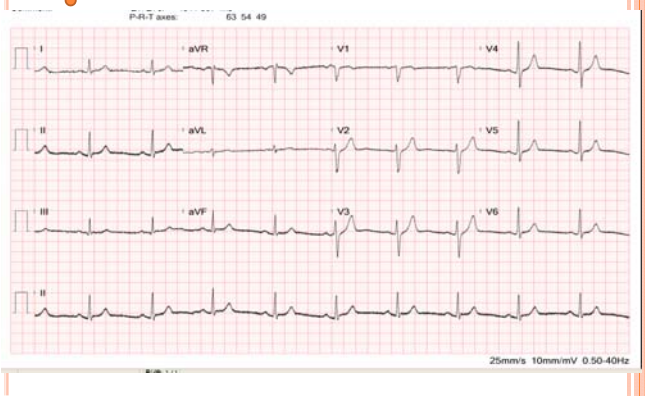
Abdomen：
Soft, **peri-umbilicus tenderness, no rebounding pain,**
Liver and spleen: not palpable
Bowel sound: normally active
CV angle: no knocking pain

CLINICAL SCENARIO

Tentative diagnosis at ER:

- Abdominal pain
- R/o hollow organ perforation
- R/o muscle hematoma

EKG DAY1



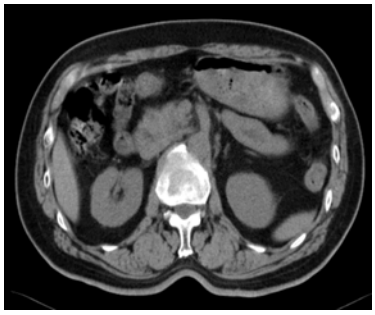
DAY1 Bedside echo

- No ascites
- No AAA

報告日期時間	RBC	Hb	Ht	MCV	MCH	MCH	RDW	Platek	WBC	Diffen count	Segme	Lymp	Mono	Eosin	Basop
DAY1 1522(...	4.35	13.9	39.6	91.0	32.0	35.1	12.6	113	6.8			43.3	9.0	1.2	0.3

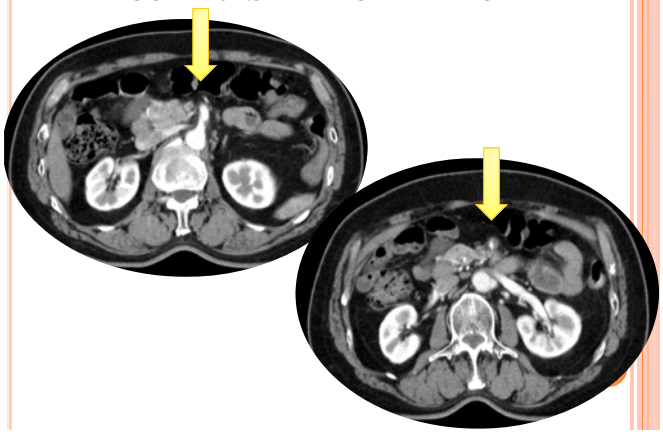
報告日期時間	Gluco	Total protein	Protein	album	Globu	Albun	GOT(	Trigly	BUN	Creati	Uric acid	Na	K	Cl	eGFR
DAY4 1715(...									10	0.78					98.40
DAY2 1027(...				3.4				54			4.0				
DAY1 1534(...	109						40			0.88		135	3.7		85.62

DAY1 NON-CONTRAST ABDOMINAL CT



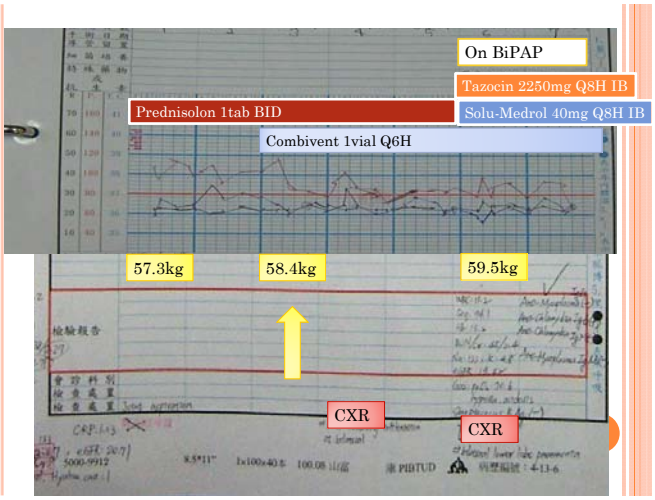
- slightly distension of the small bowels
- dilatation of the SMA.
- Advise post-C abdominal CT to R/O ischemia bowels.

DAY1 CONTRAST ABDOMINAL CT



DAY1 CONTRAST ABDOMINAL CT

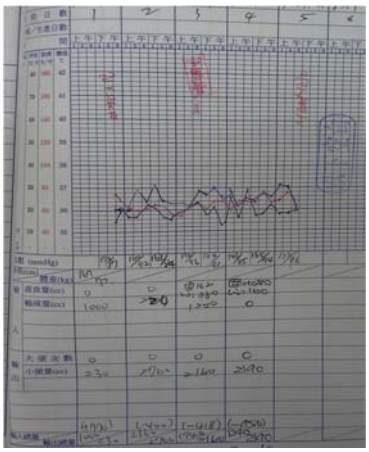
- Dissection of the SMA with partial thrombosis of the SMA and part of its branches.
- Some small bowel loops are moderately distended with edematous wall and fair perfusion.
- Mild to moderate fair perfusion in some small bowel loops.
- There is no dissection in the abdominal aorta and other major branches.



TENTATIVE DIAGNOSIS

- Isolate SMA dissection

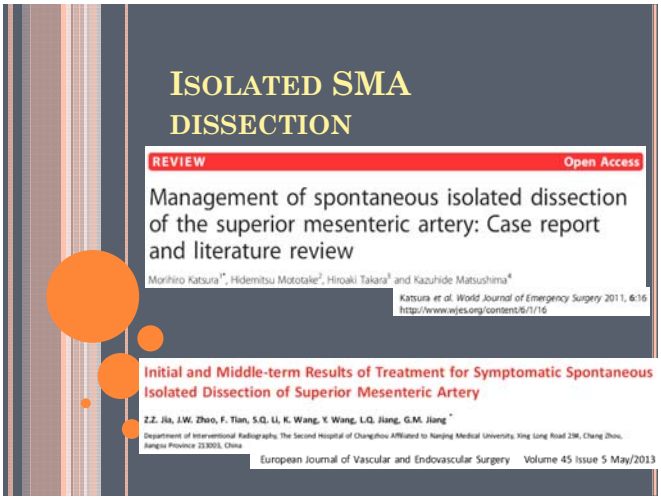
- Plan:
  - Consult CVS
  - Give clexane 60mg Q12H SC
  - Arrange EPS and transfer to ICU



ANGIOGRAPHY ON DAY3

- Diagnosis:
- Proximal SMA dissection with false lumen s/p PTCA and stent
- Patent IMA
- Patent bilateral renal artery

ISOLATED SMA DISSECTION


REVIEW Open Access

Management of spontaneous isolated dissection of the superior mesenteric artery: Case report and literature review

Morihiro Katsura[1*], Hidemitsu Mototake[2], Hiroaki Takara[3] and Kazuhide Matsushima[4]

Katsura et al. World Journal of Emergency Surgery 2011, 6:16
http://www.wjes.org/content/6/1/16

Initial and Middle-term Results of Treatment for Symptomatic Spontaneous Isolated Dissection of Superior Mesenteric Artery

Z.Z. Jia, J.W. Zhao, F. Tian, S.Q. Li, K. Wang, Y. Wang, L.Q. Jiang, G.M. Jiang *

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SPONTANEOUS SMA DISSECTION-HISTORY

- Spontaneous dissection of the SMA is a rare condition and is not associated with aortic dissection.
- It was first described by Bauerfield in 1947. In previously reported cases before 1972, the prognosis was very poor . However, the prognosis has improved significantly since 1975 as a result of advancements in surgical techniques and imaging modalities .

SPONTANEOUS SMA DISSECTION-ETIOLOGY

- The etiology of the disease has not yet been established, but
  - atherosclerosis,
  - cystic medial necrosis,
  - fibromuscular dysplasia
  - untreated hypertension.

Spontaneous SMA dissection- Symptoms

- The natural history of the disease is also unclear and depends on each case.
- Most patients present with acute epigastric pain, which is considered to be caused by the dissection itself or intestinal ischemia.
- Other common symptoms are nausea, vomiting, melena, and abdominal distention.
- These patients present acutely with symptom duration of <4 weeks.

Spontaneous SMA dissection -Lab data and image

- Laboratory tests and abdominal radiography are usually unremarkable.
- Therefore, we often initially presume that the patient has enterocolitis and gastritis.
- Sometimes, laboratory tests show slightly elevated serum amylase, which might be caused by occlusion of the duodenopancreatic arcade

Sakamoto's classification

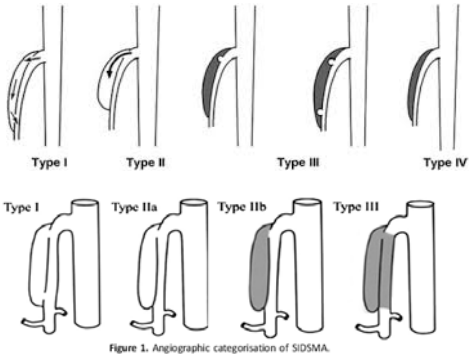

Figure 1. Angiographic categorisation of SIDSMA.

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Spontaneous SMA dissection -image

- However, neither Sakamoto et al. nor Yun et al. have found a clear relationship between radiological appearance and clinical course.
- Abdominal color Doppler echo is also effective for following hemodynamic changes within the SMA, bowel movement, and signs of bowel ischemia

Spontaneous SMA dissection -treatment

- At present, however, there is no established opinion on the indications for surgical revascularization, conservative medical management, or endovascular therapy.
- Some cases have been successfully treated by conservative therapy, such as anticoagulation

Spontaneous SMA dissection -treatment

- Sparks et al. have suggested that indications for surgery are increasing size of the aneurysmal dilatation of the SMA, luminal thrombosis, or persistent symptoms despite anticoagulation. Various procedures for surgical intervention have been reported, including aortomesenteric or iliomesenteric bypass, thrombectomy, intimectomy with or without patch angioplasty, ligation, and resection.

SPONTANEOUS SMA DISSECTION -TREATMENT

- Recent minimally invasive techniques, such as percutaneous endovascular stent placement and intralesional thrombolytic therapy, could be useful in certain cases, especially in patients at high risk for surgery
- However, it is usually difficult to find the site at which tearing of the artery wall started during dissection of the SMA, and the dissection often extends to the distal portion of the SMA

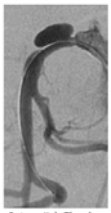

Figure 3. (Patient no. 3, type IIa): The characteristic DSA findings including partly compression of the true lumen or dissecting aneurysm likely to rupture.

Figure 2. (Type IIb): A CT angiographic finding of SIDSMA, cross-sectional view of compression of the true lumen by the thrombosed false lumen.

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Abstract

Background and method: The aim of this study was to assess retrospectively the clinical presentation, management and outcome of three patients with isolated SMA dissection encountered at Okinawa Prefectural Chubu Hospital, Japan from 2005 to 2006, along with a review of the literature. We follow up the patient's clinical symptoms and the image by using enhanced dynamic CT at 1 week, 1 or 2 months, 6 months, and yearly after onset.

Case presentation: We present three patients with acute abdominal pain due to spontaneous dissection of the superior mesenteric artery (SMA), who were treated by surgical revascularization or conservative management. Two patients underwent surgery because of signs or symptoms of intestinal ischemia and one patient elected conservative management. The SMA was repaired by bypass graft in two cases, and in one of these, the graft was occluded because of prominent native flow from the SMA. All patients were symptom free and there was no evidence of disease recurrence after a median follow-up of 4.3 years.

Conclusion: Although the indications for surgery are still controversial, we should proceed with exploratory laparotomy if the patient has acute symptoms with suspicion of mesenteric ischemia. A non-operative approach for SMA dissection requires close follow-up abdominal CT, with a focus on the clinical signs of mesenteric ischemia and the vascular supply of the SMA, including collateral flow from the celiac artery and inferior mesenteric artery.

Table 1 Clinical characteristics of patients with SMA dissection

Case No.	Age/Sex	Dissection portion	Sakamoto's classification	Treatment	intestinal ischemia on surgery	Follow up CT
1	50/M	6 cm from the orifice of the SMA	type IV	Surgery	Yes	Graft patent ULP (-)
2	46/F	just after the orifice of the SMA	type III	Surgery	None	Graft occlusion ULP (+)
3	47/M	just after the orifice of the SMA	type III	Conservative	-	resolved false lumen ULP (+)

ULP: ulcer like projection

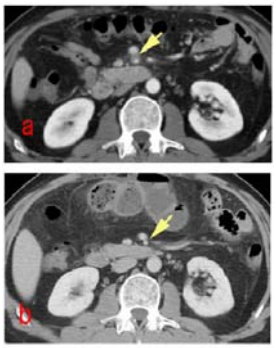

Figure 1 Sakamoto's type IV dissection of the SMA. (a)

Figure 2 Sakamoto's type III dissection of the SMA. (a)

Figure 3 Sakamoto's type III dissection of the SMA. (a) preoperative three-dimensionally reconstructed images showing severe stenosis of the SMA with ULP, and the collateral flow from the celiac artery and inferior mesenteric artery. (B) postoperative 1 year abdominal enhanced CT scan show a thrombosed false lumen completely resolved without progressive dilation of ULP.

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Table 1. Clinical characteristics of SIDSMA in 17 patients.

No	Age/sex	Symptoms	Risk factors	Type	Treatment	Symptom change	Follow-up (months)
1	47/M	Abdominal pain	Hypertension, Smoking	IIa	ES	Pain resolution	14
2	49/M	Abdominal pain radiating to the back	Hypertension	IIa	ES	Pain resolution	8
3	50/F	Abdominal pain	Hyperlipidaemia	IIa	ES	Pain resolution	6
4	65/M	Abdominal pain	Hypertension, DM	IIa	CT-ES	Pain resolution	20
5	53/F	Abdominal pain	–	IIa	CT-ES	Pain resolution	38
6	55/M	Abdominal pain, Nausea/vomiting	Hypertension, Atherosclerosis. DM	IIb	CT	Pain resolution	46
7	47/M	Abdominal pain	Hyperlipidaemia	IIb	CT	Pain resolution	72
8	65/M	Abdominal pain	Hypertension, Smoking	IIb	CT	Pain resolution	48
9	61/F	Abdominal pain	–	IIb	CT	Pain resolution	2
10	55/M	Abdominal pain	Hypertension	IIb	CT	Pain resolution	4
11	53/M	Abdominal pain	Smoking	IIb	CT	Pain resolution	34
12	70/F	Abdominal pain	Hypertension, Atherosclerosis	IIb	CT	Pain resolution	18
13	54/M	Abdominal pain	DM	IIb	CT	Pain resolution	16
14	73/M	Abdominal pain	Smoking, Atherosclerosis	IIb	CT	Pain resolution	12
15	63/F	Abdominal pain	Hypertension, DM	IIb	CT	Pain resolution	38
16	57/M	Abdominal pain	Atherosclerosis	IIb	CT	Pain resolution	43
17	76/M	Abdominal pain	Hypertension, Hyperlipidaemia, DM, Atherosclerosis	IIb	CT	Pain resolution	10

*Age: years, conservative treatment: CT, diabetes mellitus: DM, CT-ES: started conservative treatment but converted to ES.

Table 2. The detail technical aspects information of stented patients.

No	Severe compression of the true lumen	Aneurysm	Dissection with side branch involvement	Self-expandable stent diameter/lengths	Fasting time (days)	Aneurysm change
1	Yes	Yes	No	7 mm/30 mm	5 d	Partly obliteration
2	Yes	Yes	Yes	7 mm/50 mm	4 d	Complete obliteration
3	Yes	Yes	No	8 mm/30 mm	2 d	Reduced
4	No	Yes	Yes	7 mm/40 mm	2 d	Partly obliteration
5	Yes	Yes	Yes	7 mm/30 mm	4.5 d	Partly obliteration

*Reduced means the aneurysmal volume reduced, but the shape of aneurysm didn't change and no thrombus in the false lumen. Partly obliterated means the aneurysmal volume reduced, shape of aneurysm be changed, and thrombosed false lumen.

Table 3. Summary of current evidence of treatment of symptomatic SIDSMA (including our results).

	Cases	A/C	A/P	CT	ES	CT-ES	Surgery	F/U (months)	Out-come
Yun WS et al. (2008)	32	5	4	28	1	–	3	22	Uneventful
Cho YP et al. (2009)	7	7	1	7	–	–	–	23	Uneventful
Zerbib P et al. (2010)	7	7	7	5	–	–	2	21	Uneventful
Min SI et al. (2011)	13	–	–	7	4	2	–	27.5	Uneventful
Park YJ et al. (2011)	58	13	13	53	1	–	4	23	Uneventful
Cho BS et al. (2011)	30	5	–	23	5	1	1	38.8	Uneventful
Chu SY et al. (2011)	8	–	1	1	6	–	–	16	Uneventful (except 1 died before Angiography)
Our study	17	5	–	12	3	2	–	19.4	Uneventful

*A/C: Anticoagulation in conservative treatment patients, A/P: anti platelet in conservative treatment patients, conservative treatment: CT, CT-ES: started conservative treatment but converted to ES, F/U: follow-up.