ER Case conference

家醫R2 錢韻如/VS林立偉
2013.07.15

Basic datas

- day1 9:08 am
- 94 y/o F
- 步行，家人護送
- Con's: E4V5M6
- T/P/R 36/77/22 BP182/86 Sat 98%
- PMH: denied
- C.C:右側邊背痛
- Triage 3

Chief Complaint

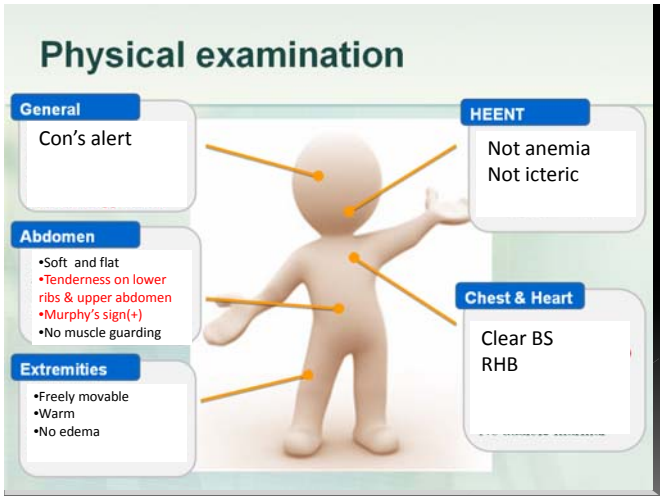
- RUQ pain for 3-4 days

Present illness

S:

- No vomit or diarrhea
- No trauma
- Treated at LMD but no improvement
- PMH: unremarkable
- Allergy: unremarkable

Physical examination



Present illness

A:Nonspecific right lower chest and upper abdominal pain

P: Consider abdominal echo and x ray survey

ER order

- 急診超音波
- NPO, D5S run 60 ml/hr
- WBC/DC, Hb,PLT, PT/aPTT, CRP, Glu, Cre, Na/K, Lipase, GOT, T.bil
- Keto 1 amp IVD ST

day1

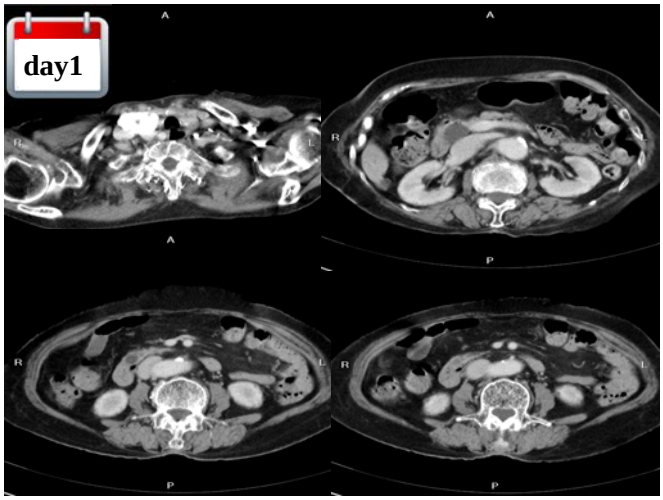
檢驗項目名稱	檢驗值	檢驗值單位
Hb	12.1	gm/dl
WBC	5.1	x1000/ul
Differential count	**********	
Segmented Neutro.	77.8	%
Lymphocyte	18.0	%
Monocyte	3.8	%
Eosinophil	0.2	%
Basophil	0.2	%
Platelet	202	x1000/ul

檢驗項目名稱	檢驗值	檢驗值單位
PT	10.0	second
Normal control	10.2	second
INR	0.98	Ratio
APTT	27.6	second
Normal control	32.8	second
APTT ratio	0.84	

檢驗項目名稱	檢驗值	檢驗值單位
Glucose	107	mg/dL
GOT(AST)	26	U/L
T-Bilirubin	1.0	mg/dL
Creatinine	0.8	mg/dL
eGFR	66.65	
Na	146	meq/L
K	4.1	meq/L
Lipase	31	U/L
CRP	0.184	mg/dL

```
Diagnosis :
MBD AND IHD DILATATION
Comment :
CHECK LAB PROFILES
CONSIDER CT SCAN FOR POSSIBLE DUODENAL OR DISTAL CBD LESION
Examiner :          醫師   Checker : 陳國智  醫師
```

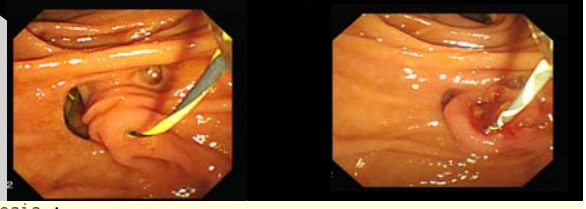
day1



ER order

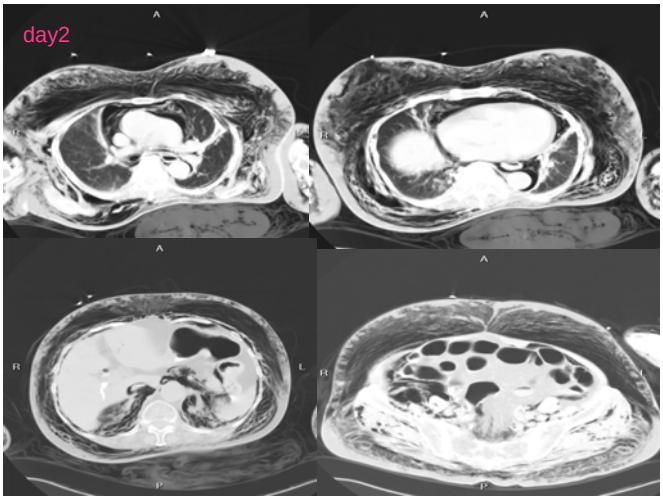
- NPO
- IVF with D5S 60ml/hr
- Arrange ERCP

day2 ERCP 14:15-15:50



```
Diagnosis :
Endoscopy :
Periampullary diverticulum,
Cholangiography :
Distal CBD stenosis with upstream dilatation, r/o tumor
s/p IDUS s/p Biopsy s/p Biliary stent insertion
Comment :
Subcutaneous emphysema was found
on the neck, face, limbs, and trunk.
Retroperitoneal perforation (maybe
microperforation) due to guide-wire
penestration  ; Admitted for observation
```

day2



Hospital course

day2 ER 16:40 E2V4M5 T/P/T 37.4/88/24 BP 178/102

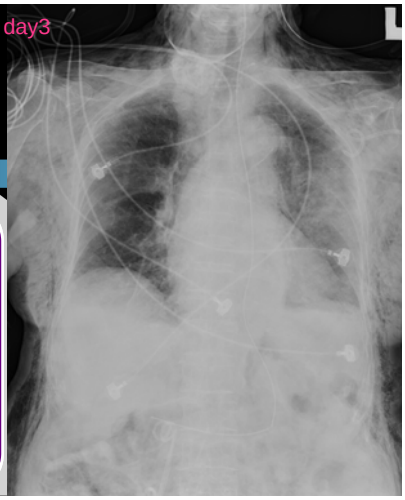
General emphysema durine ERCP from head to foot
SPO2 100% NRM , con's awake
•Contact CS ->OP中，如擔心可先接chest tube，但需先處理duodenal perforation之問題
•GI VS-> Minimal PTX,先不on chest tube，收RICU
•Pt'S->家屬希望不插管，告知如SOB惡化，need intubation and bilateral chest tube insertion

day2 20:00轉RICU

Dx:
1.Microperforation of bowel(maybe duodenum) with pneumoretroperitoneum,pneumomediastinum,pneumothorax,pneumopericardium,subcutaneous emphysema
2.Distal CBD stenosis r/o Tumor s/p EST stenting and biopsy
P: NPO and hydration,NG decompression, O2 supplement
Cefmetazole 1g iv Q8H
Dulcolax 1# supp QD&ST

•Inserted pigtail(8F) into subcutaneous space of left upper chest
-> emphysema improved

day3

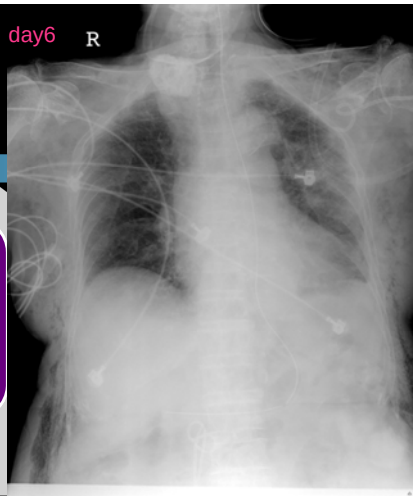


day3 → day4

Hb	12.1	gm/dl
WBC	7.6	x1000/ul
GOT(AST)	142	U/L
GPT(ALT)	216	U/L
Alkaline p-tase	135	U/L
T-Bilirubin	2.6	mg/dL
D-Bilirubin	2.0	mg/dL
BUN	13	mg/dL
Creatinine	0.7	mg/dL
eGFR	77.75	
Na	143	meq/L
K	3.2	meq/L
iCa	4.61	mg/dL
P	2.30	mg/dL

Remove pig- tail
Transfer to general ward

day6



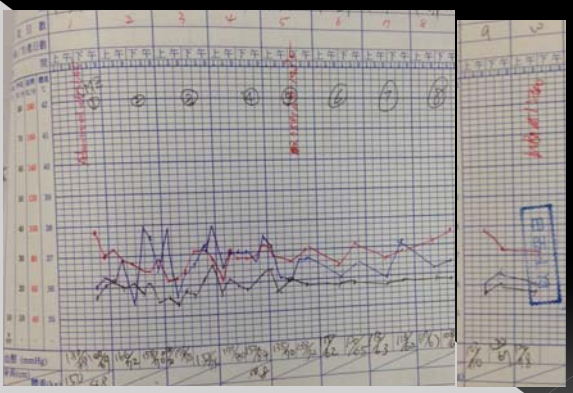
Pathology: chronic inflammation

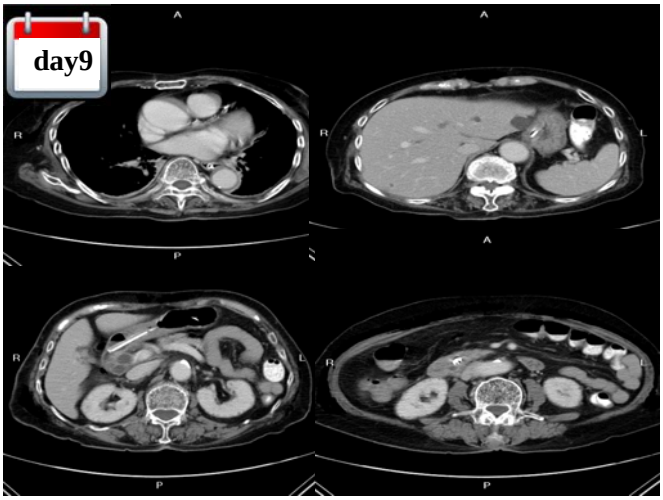
GPT(ALT)	87	U/L
T-Bilirubin	1.0	mg/dL
D-Bilirubin	0.5	mg/dL
Amylase	81	U/L
Lipase	92	U/L

Urine retention-> urologist was consulted.
Harnalidge and dampurine were given after starting oral intake was suggest.

day8 → day9

Try soft diet.
Clinical stable,oral intake was smooth without abdominal pain





Discussion

Post- ERCP perforation

Introduction

- Perforation is an uncommon complication of ERCP, with an incidence between 0.3% and 2.1% of procedures
- Although the incidence of ERCP-related perforations is low, mortality has been reported in up to 20%->the most common cause is sepsis

Classification

- There are two main classification systems for ERCP-related perforation:

Howard Classification
I:guidewire perforations
II:periampullary
III duodenal perforations

Stapfer classification
(1) type I: lateral or medial duodenal wall perforations(H III)
(2) type II: peri-Vaterian injury (H II)
(3) type III: bile or pancreatic duct injury (H I)
(4) type IV: presence of retroperitoneal air alone

S/S

- The clinical presentation in the postprocedure period is usually nonspecific
- One study performed a prospective analysis of patients with perforationafter ERCP found :

Abdominal or flank discomfort	100%
Elevated heart rate	74%
Mild to moderate abdominal tenderness	64%
Low-grade fever	47%
Hyperamylasemia (amylase>150U/L)	37%
Mild leukocytosis (WBC 10000-12000/ml)	32%
Peritoneal signs	18%
Subcutaneous emphysema	16%

Gastrointestinal Endoscopy, vol. 37, no. 3, pp. 383–393, 1991

S/S

- A retrospective study used a clinical score to compare patients that underwent operative versus nonoperative management of the perforation .
- The clinical index was comprised of giving one point for each of the following:

Fever (≥38.5◦C)
Tachycardia (heart rate ≥100 bpm)
Abdominal guarding on physical examination
Leukocytosis (WBC count ≥ 10, 000).

- They found that 83% of patients medically managed had a score of 0 to 1, while 83% of patients that required surgery had a clinical index score of 3 to 4 (odds ratio for requiring surgery in patients with a score of 3 to 4 was 40).

American Journal of Surgery, vol. 196, no. 6, pp. 975–982, 2008

Table 1 Cases of pneumothorax complicating endoscopic retrograde cholangiopancreatography (ERCP)

Author	Age (years)	Gender	Indication for ERCP	ERCP procedure	Location and type of pneumothorax	Other findings*	Management	Outcome
Gya et al. [7]	63	F	CBD stone	Sphincterotomy	Right-sided	A, C, D	Chest tube, laparotomy	Survived
Scarlet et al. [8]	59	F	Biliary pain	Pre-cut sphincterotomy	Right-sided	B, C	Chest tube, conservative	Survived
Doerr et al. [9]	81	F	CBD stone	Failed attempt to remove CBD stone	Right-sided	A, B, D	Chest tube, conservative	Survived
Hui et al. [10]	89	F	Cholangitis, CBD stones	Failed attempt to reach papilla, B-II gastrectomy	Right-sided	–	Chest tube, conservative	Survived
Lagoudianakis et al. [11]	55	M	Cholelithiasis, jaundice	Failed attempt of catheterization papilla, sphincterotomy	Right-sided	C, D	Conservative	Survived
Markogiannakis et al. [12]	56	F	Cholangitis	Sphincterotomy, stone removal	Bilateral	A, B, C, D	Bilateral chest tube, conservative	Survived
Kocaman et al. [13]	24	M	Progressive jaundice	Brushing, endoprosthesis	Bilateral	A, B, C, D	Bilateral chest tube, laparotomy	Survived
Ferrara et al. [14]	82	M	Cholangitis, CBD stones	Sphincterotomy, stone removal	Left-sided	A, B, C, D	Chest tube, conservative	Survived
Iyilikci et al. [15]	24	F	CBD stone	Sphincterotomy, partial stone removal	Bilateral	D	Chest tube, laparotomy	Survived
Sang-Yun Song et al. [6]	78	F	CBD stone	Sphincterotomy	Right-sided tension	A, C, D	Conservative	Died
Schiavon et al. [16]	79	F	CBD stones	Sphincterotomy, Stone removal	Right-sided	A, D	Conservative	Survived
Brueck et al. [17]	39	F	CBD stones	Sphincterotomy with lithotripsy, stone removal	Bilateral	A, B, C, D	Chest tube, conservative	Survived
Fuji et al. [18]	73	F	Biliary anastomotic stricture	Balloon dilatation, endoprothesis placement	Bilateral	A, B, C, D	Bilateral chest tube, conservative	Survived
Ozgonul et al. [19]	62	F	Obstructive jaundice	Klatskin tumour, stenting	Bilateral	A, B, C, D	Bilateral chest tube,	Survived

Sampaziotis et al. [20]	68	F	CBD stones	Extension sphincterotomy, Stone removal	Bilateral	A, B, C, D	Bilateral chest tube	Survived
Seymann et al. [21]	78	F	CBD stone	Stone removal	Bilateral	A, C, D	Bilateral chest tube	Survived
Present case 1	77	F	Resection papilla adenoma	Sphincterotomy, resection papilla adenoma	Bilateral, right-sided tension	A, B, C, D	Chest tube, conservative	Survived
Present case 2	77	M	Obstructive jaundice	Precut sphincterotomy	Bilateral	A, C, D	Conservative	Survived
Present case 3	88	F	CBD stones	Sphincterotomy, bleeding	Right-sided tension	A, C, D	Chest tube, conservative	Survived
Present case 4	58	F	Jaundice and biliary pain	Precut sphincterotomy	Right-sided?	A, C	Conservative	Survived

[a] Other findings: *A* mediastinal air, *B* intraperitoneal air, *C* retroperitoneal air, *D* subcutaneous emphysema

CBD common bile duct, *F* female, *M* male

- The mean age of the total reported 20 patients was 66 (range 24–89) years; 16 were female.
- In two-thirds of cases sphincterotomy or pre-cut sphincterotomy preceded the development of pneumothorax
- Chest tube drainage, was performed in 15 (75 %) patients.
- In 19/20 cases the outcome was favorable, with full recovery of the patient.
- A fatal outcome was reported for one patient, a 78-year-old woman who presented 3 days after ERCP with sphincterotomy and failed stone extraction, and died from peritonitis and sepsis

Dig Dis Sci (2012) 57:1990–1995

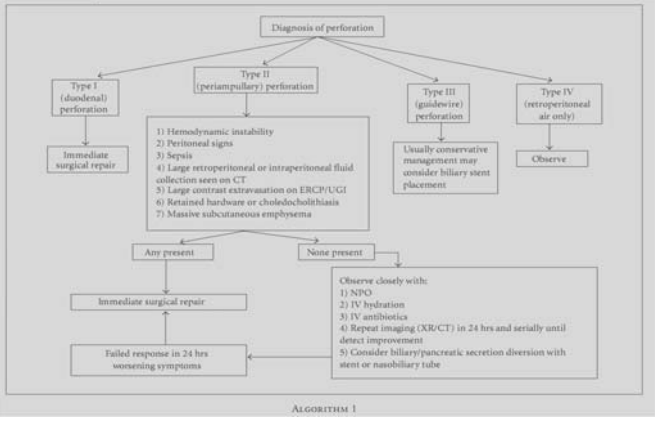
Diagnosis

- Frst imaging study is usually an abdominal X-ray (ease of administration)

Abdominal CT without contrast is considered the radiographic imaging of choice to detect ERCP-related perforations in a patient that has abdominal pain or signs of systemic inflammatory response and peritonitis.

- scans to detect intraperitoneal perforations and can not rule out other causes of similar symptoms, such as pancreatitis
- A source of the perforation may not be detected in up to 10% of cases

Management



Algorithm 1

Conclusions

- ERCP-related perforation is uncommon, but mortality rates are high.
- Diagnosis requires a high clinical suspicion for early detection to allow optimal management of the perforation and a better prognosis.
- Treatment depends on the location and mechanism and increasingly involves nonoperative management.

Thank you