ER-INFECTION COMBINE MEETING

R1吳冠蓉/V.S洪世文
103.05.17

Case 1-Basic data

- Gender: 50-yo female
- Date: DAY1 19:44 pm
- C/C: 左腰痛
- TPR: 38.8/124/16 BP:102/70
  SpO2: 99% GCS: E4V5M6
- Triage: 2

Present illness

- General weakness for 10+ days
- Intermittent fever for 1 week
- Cough, mild RN, no sputum, SOB(+)
- Dysuria(+), Bilateral flank pain,
- no vomiting; loose stool
- Poor intake
- 今天剛從印尼回來, 一週前在印尼有general weakness, suspected virus infection

History

- Medical hx: Denied HTN/CAD/DM
- Allergy: NKA
- TOCC Hx: 半個月至今日前在印尼, 成衣業, Contact: nil; Cluster: nil

Physical Examination

- Consciousness: Alert
- HEENT: neck supple, throat no injected, tonsil no swelling
- Chest: clear breathing sound,
- Abdomen: Soft, epigastric tender, no guarding, left flank knocking pain
- Extremities: freely, no rash

Impression

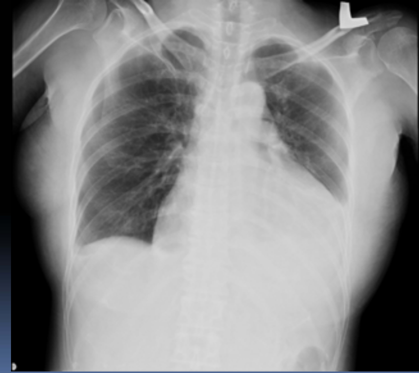
- Fever, cause?
  - r/o left APN
  - r/o Pneumonia
  - r/o atypical infection

Order DAY1 19:50pm

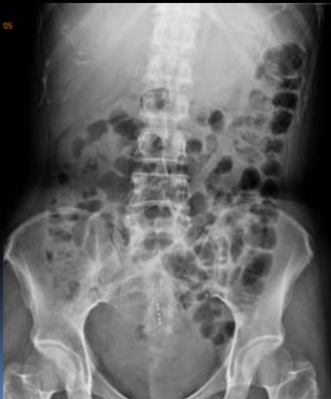
- CBC/DC/PLT
- BUN, Cr, GOT, Na, K, T-Bil, lipase, CRP
- VBG4
- B/Cx2
- N/S 500ml
- N/S run 80ml/hr
- KUB, CXR
- Acetamol 1g IV ST

pH	7.452
pCO_2	37.2
pO_2	13
BE	2
HCO_3	25.9
TCO_2	27
SO_2	17%
Lactate	10.5

DAY1 CXR



DAY1



DAY1 Lab

檢驗項目名稱	檢驗值	檢驗值單位	最小參考值	最大參考值	Hi,Lo值	前次檢驗值
CBC/Platelet/DC	**********					**********
WBC	7.9	X1000/ul	3.8	10		6.2
RBC	3.91	million	3.8	5		4.78
Hb	10.9	gm/dl	11	16	*L	13.7
Ht	32.1	%	35	48	*L	41.0
MCV	82.1	fl	81	98		85.8
MCH	27.9	pg	27	32		28.7
MCHC	34.0	%	32	36		33.4
RDW	13.3	%	11.5	14.5		12.7
Platelet	483	x1000/ul	140	450	*H	296
Differential count	**********					**********
Segmented Neutro.	72.9	%	37	75		68.8
Lymphocyte	12.3	%	20	55	*L	22.3

DAY1 lab

檢驗項目名稱	檢驗值	檢驗值單位
Sediment	**********	
RBC	1-2	/HPF
WBC	16-30	/HPF
Epithelial cell	5-7	/HPF
Cast	Not Found	/LPF
.cast-amount	-	
Crystal	Not Found	/HPF
.Cry-amount	-	
Bacteria	-	
Others	Mucus	

檢驗項目名稱	檢驗值	檢驗值單位	最小參考值	最大參考值	Hi,Lo值	前次檢驗值
Glucose	114	mg/dL	70	110	*H	86
GOT(AST)	73	U/L	5	35	*H	15
BUN	13	mg/dL	7	25		9
Creatinine	0.6	mg/dL	0.5	1.3		0.53
Na	128	meq/L	133	145	*L	141
K	4.3	meq/L	3.3	5.1		3.7
eGFR	105.82					122.11
T-Bilirubin	0.46	mg/dL	0.3	1.2		0.41
Lipase	15	U/L	11	82		
CRP	18.360	mg/dL	0	0.5	*H	

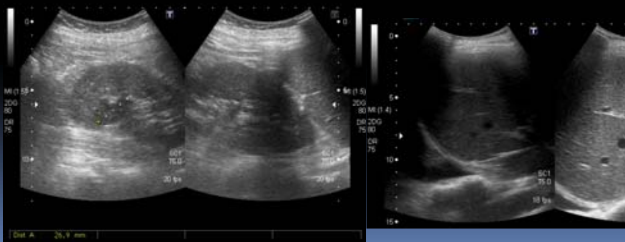
Order DAY1 21:20pm

- Recheck HR/BP (38/101/16, SpO2:96%)
- N/S 500ml ST
- Cefmetazole 1g IV ST and Q8H
- Renal echo
- 排nephro/infection床
- 轉EC51

EC Order DAY1 22:15

- DC renal echo, arrange abdominal echo

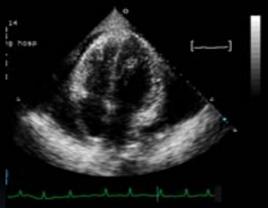
DAY2 08:40
Left hydronephrosis, r/o abscess; Right PLE



EC order DAY2

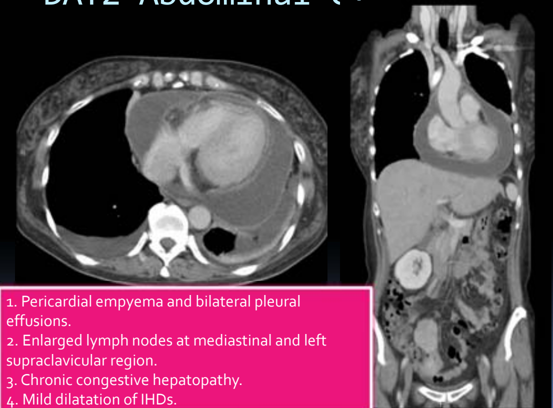
- 09:20
- Heart echo
- Abominal CT with contrast

DAY2 heart echo



- EF: 65%
- Normal chamber size
- Normal LV contractility
- Pericardial effusion, large amount, without RA and RV collapse
- IVC engorgement size 2.01cm

DAY2 Abdominal CT



1. Pericardial empyema and bilateral pleural effusions.
2. Enlarged lymph nodes at mediastinal and left supraclavicular region.
3. Chronic congestive hepatopathy.
4. Mild dilatation of IHDs.

EC DAY2

- 11:00 Consult CV/Infection

CV duty: 看heart echo的情況, 可能抽水風險較高, 目前無tamponade sign, 可以先OBS

Infection impression: infection, autoimmune, malignancy all possible
Suggest Ceftriaxone 2g Q12H, check ANA/RA/C3/C4, tumor marker, chest echo for PLE tapping and analysis

- Arrange chest echo tomorrow
- ANA/C3/C4/RA, CEA, CA199
- 16:28 Admission to Infection ward

Admission DAY2

- Tentative diagnosis:
  - 1. Acute pyelonephritis of left kidney with hydronephrosis r/o abscess
  - 2. Pericardial effusion r/o empyema
  - 3. bilateral pleural effusions

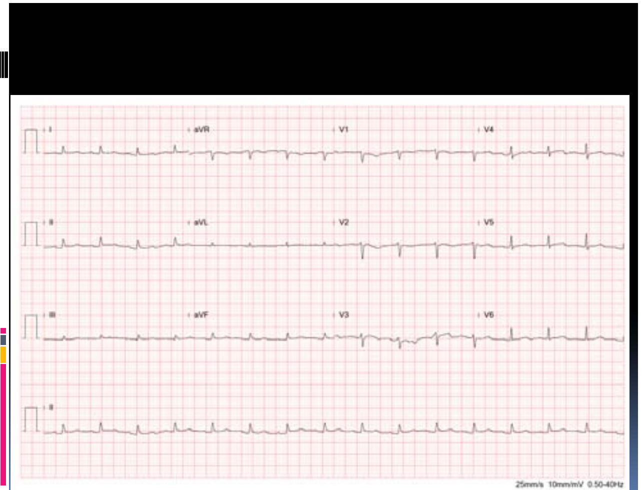
Dr.張:
Infection: TB?
Autoimmune: SLE?
Cancer: lymphoma→check LDH
lung CA→ CT no mass
Breast CA?

DAY3

檢驗項目名稱	檢驗值	檢驗值單位	最小參考值	最大參考值	Hi,Lo值	前次檢驗值
LDH	243	U/L	140	271		
Na	132	mmol/L	133	145	*L	128

檢驗項目名稱	檢驗值
Malaria	Not found

檢驗項目名稱	檢驗值	檢驗值單位
PT	15.4	second
Normal control	10.8	second
INR	1.42	Ratio
APTT	34.6	second
Normal control	33.4	second
APTT ratio	1.04	



DAY3 Pericardiocentesis

- Bedside
- 50ml bloody fluid
  - TB culture
  - Cytology
  - Routine
  - culture

Pericardiocentesis

檢驗項目名稱	檢驗值	檢驗值單位
Color	Bloody	
Appearance	Turbid	
Sp.gr.	1.027	
Rivalta's test	Positive	
RBC	349920	10/9ul
WBC	2700	10/9ul
L:N	61%:39%	

Suspected TB, 通報TB
Hydrocortisol 1amp Q8H
Cefazolin 1g Q8H
Beesix 1tab QD
AKuriT-4 3tab qD

DAY4 chest echo

- Right:
  - small amount non-complex PLE
- Left:
  - Moderate amount non-complex PLE.
  - 400mL bloody
- PLE tapping:
  - no malignancy
  - Culture: no growth

檢驗項目名稱	檢驗值	檢驗值單位
Glucose	116	mg/dL
Total-protein	2.96	g/dl
LDH	134	U/L

檢驗項目名稱	檢驗值	檢驗值單位
Pleural fluid	**********	
Color	Orange	
Appearance	Turbid	
Sp.gr.	1.019	
Rivalta's test	Positive	
RBC	10044	x10/9ul
WBC	405	x10/9ul
L:N	36%:64%	

Ward course

- DAY2→DAY4
- Acid-fast stain: negative x3
- DAY2 U/C: no growth 04/19
- DAY1→DAY9 B/C: no growth
- DAY5→DAY10 MTB PCR test: (+)

檢驗項目名稱	檢驗值
ANA(IFA)	Negative

DAY5 pericardial tapping

Pathology diagnosis:

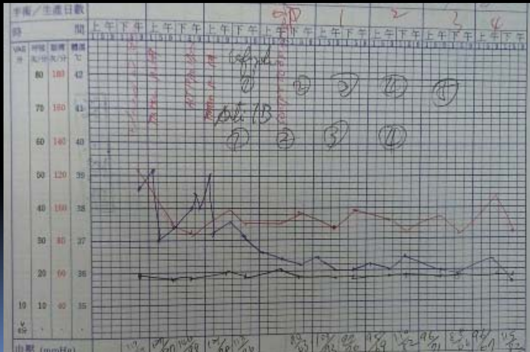
- Pericardium, pericardectomy --- Tuberculoma

檢驗項目名稱	檢驗值	檢驗值單位
Color	Bloody	
Appearance	Turbid	
Sp.gr.	1.029	
Rivalta's test	Positive	
RBC	607500	10/9ul
WBC	1260	10/9ul
L:N	56%:44%	

檢驗項目名稱	檢驗值	檢驗值單位
Glucose	86	mg/dl
Total-protein	4.56	
LDH	725	U/L

- 550 ml serous fluid

Ward course



Ward course

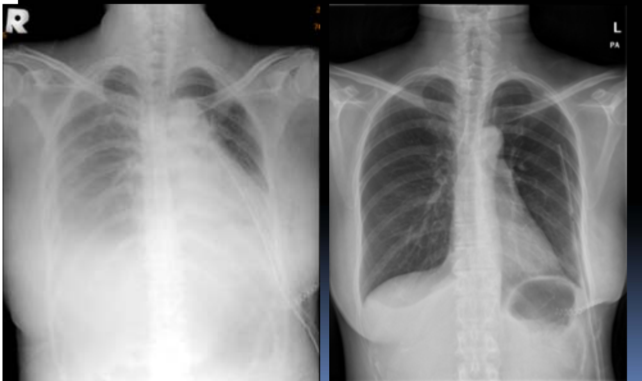
- DAY11

檢驗項目名稱	檢驗值	檢驗值單位
HIV Screen	0.06	S/CO

檢驗項目名稱	檢驗值	檢驗值單位	最小參考值	最大參考值	Hi,Lo值	前次檢驗值
Hb	14.3	gm/dl	11	16		10.9
WBC	9.4	x1000/ul	3.8	10		7.9
Differential count	**********					**********
Segmented Neutro.	74.8	%	37	75		72.9
Lymphocyte	17.4	%	20	55	*L	12.3
Monocyte	6.4	%	4	10		14.1
Eosinophil	1.3	%	0	5		0.4
Basophil	0.1	%	0	2		0.3

檢驗項目名稱	檢驗值	檢驗值單位	最小參考值	最大參考值	Hi,Lo值	前次檢驗值
GOT(AST)	27	U/L	5	35		73
GPT(ALT)	34	U/L	10	50		9
T-Bilirubin	0.33	mg/dL	0.3	1.2		0.46
Creatinine	0.53	mg/dL	0.5	1.3		0.6
eGFR	122.11					105.82
Na	139	mmol/L	133	145		132
K	3.1	mmol/L	3.3	5.1	*L	4.3

DAY7 CXR DAY16 Discharge



Discussion

Tuberculous pericarditis

Circulation

Tuberculous Pericarditis
Bongani M. Mayosi, Lesley J. Burgess and Anton F. Doubell

Circulation. 2005;112:3608-3616

UpToDate

Tuberculous pericarditis

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Introduction

- Tuberculous pericarditis occurs in approximately 1 to 2 percent of patients with pulmonary tuberculosis (TB).
- Four pathological stages
  - fibrinous exudation,
  - lymphocytic effusion,
  - absorption of effusion with granulomatous caseation,
  - constrictive scarring.

Symptoms

- Nonspecific
- Manifestations: fever, weight loss, night sweats, cardiopulmonary complaints
- Symptoms: cough, dyspnea, chest pain, pleurisy, orthopnea, night sweats, and weight loss.
- HIV with TB pericarditis

TABLE 3. Proposed Diagnostic Criteria for Tuberculous Pericarditis for Countries and Communities in Which Tuberculosis Is Endemic

Category and Criteria
Definite tuberculous pericarditis
Tubercle bacilli are found in stained smear or culture of pericardial fluid; and/or
Tubercle bacilli or caseating granulomata are found on histological examination of pericardium
Probable tuberculous pericarditis
Evidence of pericarditis in a patient with tuberculosis demonstrated elsewhere in the body; and/or
Lymphocytic pericardial exudate with elevated ADA activity; and/or
Good response to antituberculosis chemotherapy

TABLE 4. Integrated Etiologic Approach to the Patient With Suspected Tuberculous Pericardial Effusion

Initial evaluation
Chest radiograph may reveal changes suggestive of pulmonary tuberculosis in 30% of cases.
Echocardiogram: the presence of a large pericardial effusion with frond-like projections, and thick "porridge-like" exudate is suggestive of an exudate but not specific for a tuberculous etiology.
CT scan and/or MRI of the chest are alternative imaging modalities where available: for evidence of pericardial effusion and thickening (>5 mm) and typical mediastinal and tracheobronchial lymphadenopathy (>10 mm, hypodense centers, matting), with sparing of hilar lymph nodes.
Culture of sputum, gastric aspirate, and/or urine should be considered in all patients.
Right scalene lymph node biopsy if pericardial fluid is not accessible and lymphadenopathy is present.
Tuberculin skin test is not helpful regardless of the background prevalence of tuberculosis.[5,50]

TABLE 4. Integrated Etiologic Approach to the Patient With Suspected Tuberculous Pericardial Effusion

Pericardiocentesis
Therapeutic pericardiocentesis is indicated in the presence of cardiac tamponade.
Diagnostic pericardiocentesis should be considered in all patients with suspected tuberculous pericarditis, and the following tests should be performed:
Direct inoculation of the pericardial fluid into double-strength liquid Kirchner culture medium at the bedside and culture for M tuberculosis.
Biochemical tests to distinguish between an exudate and a transudate (fluid and serum protein; fluid and serum LDH).
Indirect tests for tuberculous infection: ADA, IFN-γ, or lysozyme assay.

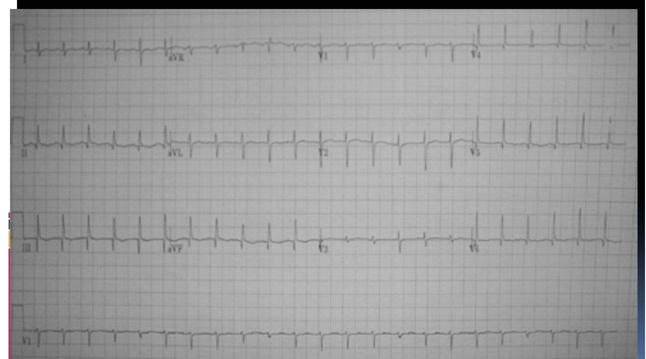
TABLE 4. Integrated Etiologic Approach to the Patient With Suspected Tuberculous Pericardial Effusion

Pericardial biopsy
"Therapeutic" biopsy: as part of surgical drainage in patients with severe tamponade relapsing after pericardiocentesis.
Diagnostic biopsy: in areas in which TB is endemic, a diagnostic biopsy is not required before commencing empirical antituberculosis treatment. In areas in which TB is not endemic, a diagnostic biopsy is recommended in patients with >3 weeks of illness and without etiologic diagnosis having been reached by other tests.[3]
Empirical antituberculosis chemotherapy
Tuberculosis endemic in the population: trial of empirical antituberculous chemotherapy is recommended for exudative pericardial effusion, after other causes such as malignancy, uremia, and trauma have been excluded.
Tuberculosis not endemic in the population: when systematic investigation fails to yield a diagnosis of tuberculous pericarditis, there is no justification for starting antituberculous treatment empirically.[58]

Treatment

- Related to HIV(+), HIV(-), drug-resistant
- Corticosteroids:
  - constrictive tuberculous pericarditis(Grade 1B)
  - Nonconstrictive tuberculous pericarditis(Grade 2C)

ECG



ECG