Case conference

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101.01.09

Basic data

- Age：51
- Sex：male
- Past history：GU, DM
- E4V5M6 SpO2: 100%
- TPR: 37.7/122/17
- Bp:107/66mmHg Triage: 3

Chief complaint

- Headache and dizziness

Present illness

- 1 week ago, visited ER due to abd pain, Dx: PUD with nexium use, 當時只有一點頭暈頭痛
- Yesterday: SOB (+), headache, dizziness
- Today: progressed Headache & dizziness, 一生中最痛的一次以前沒這樣痛過

PE

- Neck: supple
- HEENT: not pale, non-injected throat
- Chest: clear, tachypnea
- Heart: RHB, no murmur
- Abdominal: soft, epigastric tenderness, no rebound pain
- Ext: warm, no edema
- NE: FNF:ok, EOM:ok, MP: full

Impression

- r/o DKA
- r/o Infection
- headache r/o ICH

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Initial order

- F/S(90)
- ABG (G6)
- WBC/DC, Hb, PLT
- BUN/Cr, Ketone, osmo, lipase, CRP
- PT/aPTT
- B/C x II
- CXR, U/A, U/C
- EKG
- N/S 250cc iv st, then 60cc/hr
- recheck BT(38.5)

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U/A

RBC	1-2	/HPF
WBC	1-2	/HPF
Epithelial cell	1-2	/HPF
Cast	Not Found	/LPF
.cast-amount	-	
Crystal	Not Found	/HPF
.Cry-amount	-	
Bacteria	+/-	
Others	Not Found	

PH: 7.538
PCO2: 24.5 mmHg
PO2: 66 mmHg
HCO3: 20.9 mmol/L
SpO2:95%

Na:134
K:3.2
HCT:38
Hb:12.9

Blood exam

- .Hb :13.8 gm/dl
- .WBC :18400
- .Seg: 92.2 %
- .Lymph : 3.6 %
- .Mono : 3.9 %
- .PLT :273000
- PT: 11.7s
- INR: 1.10
- aPTT: 29.4s
- .Glucose : 180 mg/dL
- .GOT: 25 U/L
- .BUN: 16 mg/dL
- .Cre: 0.9 mg/dL
- .ketone:-
- .osmo: 268 mOsm/Kg
- .Lipase: 58 U/L
- . CRP: 5.45 mg/dL

Brain CT

- No ICH, No SAH

- Treat as pneumonia with Curam
- But p't still headache with amnesia & fever => Do lumbar puncture

Lumbar puncture

- Appearance : Clear
- Pandy's test: Negative
- RBC: 79 x 10/9ul
- Color: Colorless
- WBC: 2 x 10/9ul
- L:N: 2:0
- Lactate : 20 mg/dL
- Glucose: 40 mg/dL
- Total-protein: 46 mg/dL
- LDH: 24 U/L
- Culture: negative
- Acid-fast stain: negative

Gram's stain	
.PMN	
.Squamous Epi. cell	
.Gram(+) Cocci	Not Found
.Gram(+) Bacilli	Not Found
.Gram(-) Cocci	Not Found
.Gram(-) Bacilli	Not Found
.Yeast	Not Found
.Fungi	Not Found
India ink	Not found
Latex Crypt Ag	Negative

Neuro consultation

- No neurologic defect
- 不記得被告知的3樣物品,不記得午餐吃什麼,不記得電話
- Suggest do EEG & MRI to exclude temporal seizure or lesion; consult infection Dr.

- EEG: normal
- MRI: right parietal hyperdense, no recent infarct.
- attention & memory recovered to normal during f/u, no indication of neuro admission

Admission to infection ward

- 7/30 Curam 1.2g q8h
- 7/31 ESR: 46, heart systolic murmur, Gr III, left lower sternal border => r/o infectious endocarditis => arrange heart echo (TTE)
- 8/1 B/C: Srep. mitis x2 ; right leg pain during walking, no skin lesion => favor tendinitis, pain control
- 8/2 TTE: Sclerosing change of AV, r/o vegetation of MV with moderate MR
- 8/3 TEE: Mitral valve prolapse with small vegetation and severe MR, r/o ruptured chordae tendineae of anterior leaflet, AV sclerosis=> shift ABx to PCN 300萬u q4h & Gentamicin 60mg g8h, Consult CVS: repair is indicated.
- 8/10 CRP: 5.45 -> 0.88
- 8/16 病人不想開刀, MBD with Amoxicillin 2# po qid, no fever during admission

Infectious endocarditis

Guidelines on the prevention, diagnosis, and treatment of infective endocarditis (new version 2009)

The Task Force on the Prevention, Diagnosis, and Treatment of Infective Endocarditis of the European Society of Cardiology (ESC)

PRACTICE GUIDELINE: FOCUSED UPDATE

ACC/AHA 2008 Guideline Update on Valvular Heart Disease: Focused Update on Infective Endocarditis

A Report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines

Endorsed by the Society of Cardiovascular Anesthesiologists, Society for Cardiovascular Angiography and Interventions, and Society of Thoracic Surgeons

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Infectious endocarditis

- Clinical presentation: Fever(80~90%), Murmur (85%), nonspecific
- mitral valve: most affected
- Type:
  - Native valve endocarditis (NVE), acute and subacute
  - Prosthetic valve endocarditis (PVE), early (< 60d, mortality較高) and late (> 60d)
  - Intravenous drug abuse (IVDA) endocarditis: tricuspid valve
- Process:
  - Bacteremia (nosocomial or spontaneous) that delivers the organisms to the surface of the valve
  - Adherence of the organisms
  - Eventual invasion of the valvular leaflets

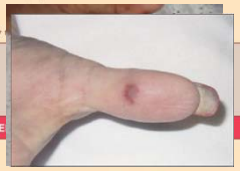
MAJOR CRITERIA

Blood cultures positive for IE:

- Typical microorganisms consistent with IE from two separate blo
  Viridans streptococci, *Streptococcus bovis*, HACEK group, *Staphyloc*
  Community-acquired enterococci, in the absence of a primary foc
- Microorganisms consistent with IE from persistently positive blood cultures:
  At least two positive blood cultures of blood samples drawn > 12 h apart; or
  All of three or a majority of ≥ 4 separate cultures of blood (with first and last sample drawn at least 1 h apart)
  or
- Single positive blood culture for *Coxiella burnetii* or phase I IgG antibody

Staphylococcus aureus: most common

HACEK: Haemophilus, Actinobacillus, Cardiobacterium, Eikenella, Kingella



Evidence of endocardial involvement

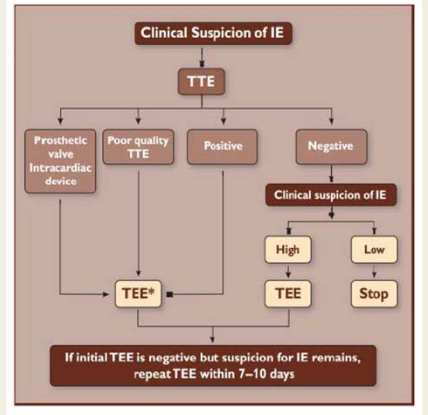
- Echocardiography positive for IE
  Vegetation - Abscess - New partial dehiscence of prosthetic valve
- New valvular regurgitation

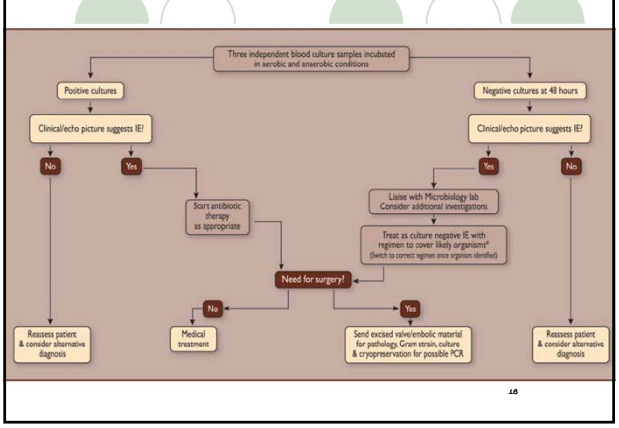
MINOR CRITE

- Predisposition: predisposing heart condition, injection drug use
- Fever: temperature > 38°C
- Vascular phenomena: major arterial emboli, septic pulmonary infarcts, mycotic aneurysm, intracranial haemorrhages, conjunctival haemorrhages, Janeway lesions
- Immunologic phenomena: glomerulonephritis, Osler's nodes, Roth's spots, rheumatoid factor
- Microbiological evidence: positive blood culture but does not meet a major criterion or serological evidence of active infection with organism consistent with IE

Diagnosis of IE is definite in the presence of
2 major criteria, or
1 major and 3 minor criteria, or
5 minor criteria

Diagnosis of IE is possible in the presence of
1 major and 1 minor criteria, or
3 minor criteria





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Treatment

Table 17 Proposed antibiotic regimens for initial empirical treatment of infective endocarditis. (before or witho pathogen identification)

Antibiotic	Dosage and route	Duration (weeks)	Level of evidence	Comments
Native valves				
Ampicillin-Sulbactam, *or* Amoxicillin-Clavulanate, *with* Gentamicin[a]	12 g/day i.v. in 4 doses 12 g/day i.v. in 4 doses 3 mg/kg/day i.v. or i.m. in 2 or 3 doses.	4–6 4–6 4–6	IIb C IIb C	Patients with blood-culture negative IE should be treated in consultation with an infectious disease specialist.
Vancomycin[b] *with*	30 mg/kg/day i.v. in 2 doses	4–6	IIb C	For patients unable to tolerate β-lactams
Prosthetic valves (early, < 12 months post surgery)				
Vancomycin[b] *with* Gentamicin[a] *with* Rifampin	30 mg/kg/day i.v. in 2 doses 3 mg/kg/day i.v. or i.m. in 2 or 3 doses. 1200 mg/day orally in 2 doses	6 2	IIb C	If no clinical response, surgery and maybe extension of the antibiotic spectrum to gram-negative pathogens must be considered.
Prosthetic valves (late, > 12 months post surgery)				
Same as for native valves				

Anticoagulation: NO benefit

Table 2. Updates to Section 2.3.1. Endocarditis Prophylaxis

2006 VHD Guideline Recommendations	2008 VHD Focused Update Recommendations	Comments
Class I	**Class IIa**	
1. Prophylaxis against infective endocarditis is recommended for the following patients: • Patients with prosthetic heart valves and patients with a history of infective endocarditis. *(Level of Evidence: C)* • Patients who have complex cyanotic congenital heart disease (e.g., single-ventricle states, transposition of the great arteries, tetralogy of Fallot). *(Level of Evidence: C)* • Patients with surgically constructed systemic pulmonary shunts or conduits. *(Level of Evidence:* • Patients with congenital cardiac valve malformations, particularly those with bicuspid aortic valves, and patients with acquired valvular dysfunction (e.g., rheumatic heart disease). *(Level of Evidence: C)* • Patients who have undergone valve repair. *(Level Evidence: C)* • Patients who have hypertrophic cardiomyopathy v there is latent or resting obstruction. *(Level of Evidence: C)* • Patients with MVP and auscultatory evidence of valvular regurgitation and/or thickened leaflets on echocardiography.* *(Level of Evidence: C)*	1. Prophylaxis against infective endocarditis is reasonable for the following patients at highest risk for adverse outcomes from infective endocarditis who undergo dental procedures that involve manipulation of either gingival tissue or the periapical region of teeth or perforation of the oral mucosa (4): • Patients with prosthetic cardiac valves or prosthetic • Repaired CHD with residual defects at the site or adjacent to the site of a prosthetic patch or prosthetic device (both of which inhibit endothelialization). *(Level of Evidence: B)* • Cardiac transplant recipients with valve regurgitation due to a structurally abnormal valve. *(Level of Evidence: C)*	Modified recommendation (changed class of recommendation from I t changed text). There are n I recommendations for in endocarditis prophylaxis.
Class III		
1. Prophylaxis against infective endocarditis is not recommended for the following patients: • Patients with isolated secundum atrial septal defect. *(Level of Evidence: C)* • Patients 6 or more months after successful surgical or	1. Prophylaxis against infective endocarditis is not esophagogastroduodenoscopy, or colonoscopy) in the absence of active infection. *(Level of Evidence: B)* (4)	Modified recommendation anged text)

Dental procedure involve gingiva, teeth, perforation of mucosa

1. 有和valve相關的prothetic material
2. CHD: no repair, still defect, prothetic device
3. s/p transplant with regurgitation
4. previous IE

Non-dental procedure: not recommended

Prophylaxis regimen

Situation	Agent	Regimen: Single Dose 30 to 60 min Before Procedure Adults	Children
Oral	Amoxicillin	2 g	50 mg/kg
Unable to take oral medication	Ampicillin	2 g IM or IV	50 mg/kg IM or IV
	OR		
	Cefazolin or ceftriaxone	1 g IM or IV	50 mg/kg IM or IV
Allergic to penicillins or ampicillin—oral	Cephalexin†‡	2 g	50 mg/kg
	OR		
	Clindamycin	600 mg	20 mg/kg
	OR		
	Azithromycin or clarithromycin	500 mg	15 mg/kg
Allergic to penicillins or ampicillin and unable to take oral medication	Cefazolin or ceftriaxone‡	1 g IM or IV	50 mg/kg IM or IV
	OR		
	Clindamycin	600 mg IM or IV	20 mg/kg IM or IV

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- Thanks for your attention !!

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