Native Tricuspid Valve Infective Endocarditis Case Presentation

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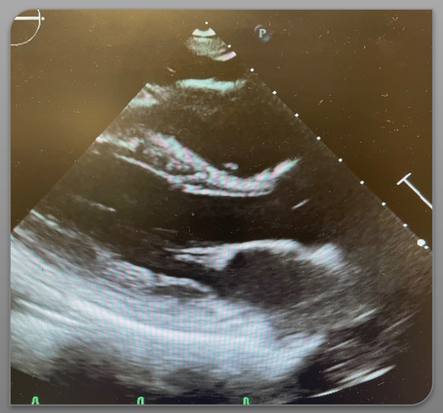
Background

- Infective Endocarditis (IE) is an infection of the inner lining/endocardium of the heart.
- Risk factors include injection drug use, underlying valve disease, male sex and increasing age[1].
- The Modified Duke criteria separates the criteria for IE into major and minor criteria and provides accurate diagnostic value[2].
- Native-valve IE is rare, accounting for approximately 2-10 cases per 100,000 person-years[3].
- Trans-oesophageal echocardiography (TOE) has been shown to be more sensitive than trans-thoracic echocardiography (TTE) for the diagnoses of valvular vegetations. TOE should be performed when TTE is negative or non-diagnostic[3].

Imaging and Investigations

Trans-oesophageal echocardiography demonstrating a mobile vegetation on the tricuspid valve



- White cell count $6.5x10^9/L$
- Neutrophil count $4.8x10^9/L$
- CRP 260.8mg/L
- Normocytic anaemia of 8.8g/dL
- Urinary dipstick: 2+ blood
- Serology: negative for HIV, hepatitis B virus and hepatitis C virus

Case History

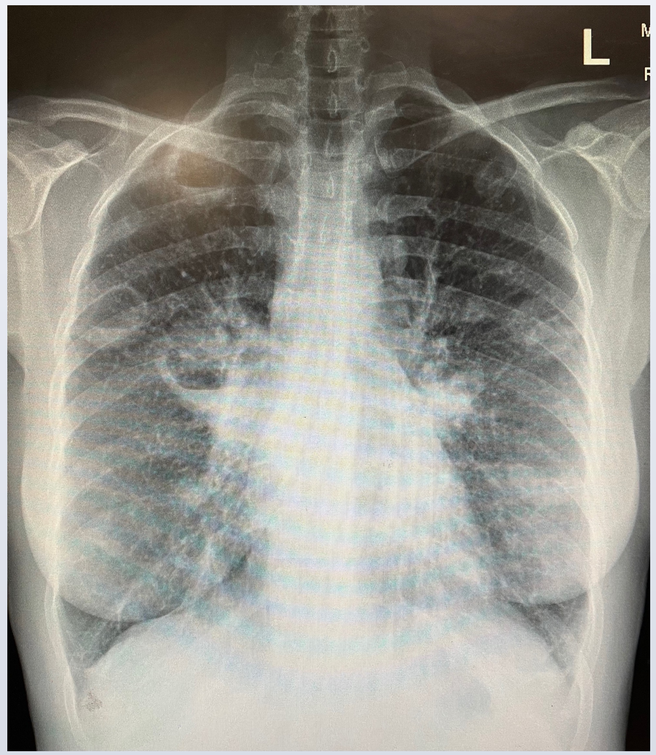
- 40-year-old lady presented with a 2-day history of fevers preceded by a 2-week history of productive cough and shortness of breath.
- She had completed a short course of antibiotics and steroids in community for a presumed upper respiratory tract infection without improvement.
- Past medical history was significant for a 25-pack year smoking history, with no history of intravenous drug use or preceding medical or dental procedures.
- She was afebrile on presentation and respiratory exam was significant for wheeze, scattered crackles and grade 2 clubbing on her fingers.
- Blood cultures taken on presentation grew methicillin sensitive Staphylococcus aureus (MSSA). Sputum culture also grew MSSA.
- A chest X-ray was performed followed by trans-thoracic echocardiography and subsequently trans-oesophageal echocardiography.
- The initial TTE was normal but the TOE on day 20 showed a new mobile vegetation on the tricuspid valve. This lead to the diagnosis of native tricuspid valve infective endocarditis (IE), complicated by septic pulmonary emboli.
- The patient was treated with intravenous flucloxacillin (2g QDS) for 4 weeks. Blood cultures were negative after 4 days. She was well on OPD follow-up in 2 weeks.

Discussion

- This patient represents a case of isolated native valve right-sided IE in the absence of typical risk factors.
- Right-sided infective endocarditis accounts for 5-10% of all cases of IE and involves the tricuspid valve more frequently than the pulmonic valve [4].
- Staphylococcus aureus is the most common disease-causing organism, followed by other coagulase-negative staphylococci and streptococci[4].
- Patients with uncomplicated MSSA tricuspid valve IE can be treated with an appropriate beta-lactam antibiotic for two weeks.
- Complicated (HIV positive, vegetation >1cm, metastatic infection, intra-extra-cardiac complications, presence of prosthetic material, LSIE/multivalvular involvement) right-sided IE requires intravenous antibiotic-treatment for four-six weeks[4].

Imaging

Chest X-Ray demonstrating bilateral cavitating pulmonary parenchymal lesions, consistent with pulmonary abscesses



References

1. Beynon, RP., et al. Infective Endocarditis. BMJ: British Medical Journal, vol. 333, no. 7563, 2006, pp. 334–39.
2. Mahabadi AA, et al. Diagnostic value of the modified Duke criteria in suspected infective endocarditis —The PRO-ENDOCARDITIS study. Int J Infect Dis, 104 (2021), pp. 556-561.
3. Chambers HF, Bayer AS. Native-valve infective endocarditis. N Engl J Med. 2020;383:567–76.
4. Akinosoglou K., et al. Native valve right sided infective endocarditis., Eur. J. Intern. Med., 24 (2013), pp. 510-519