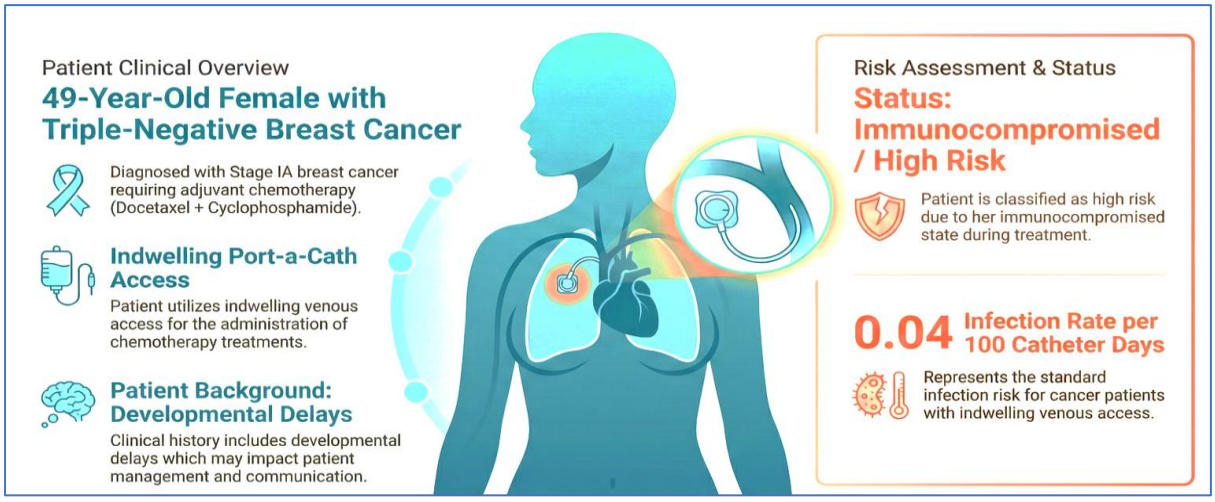
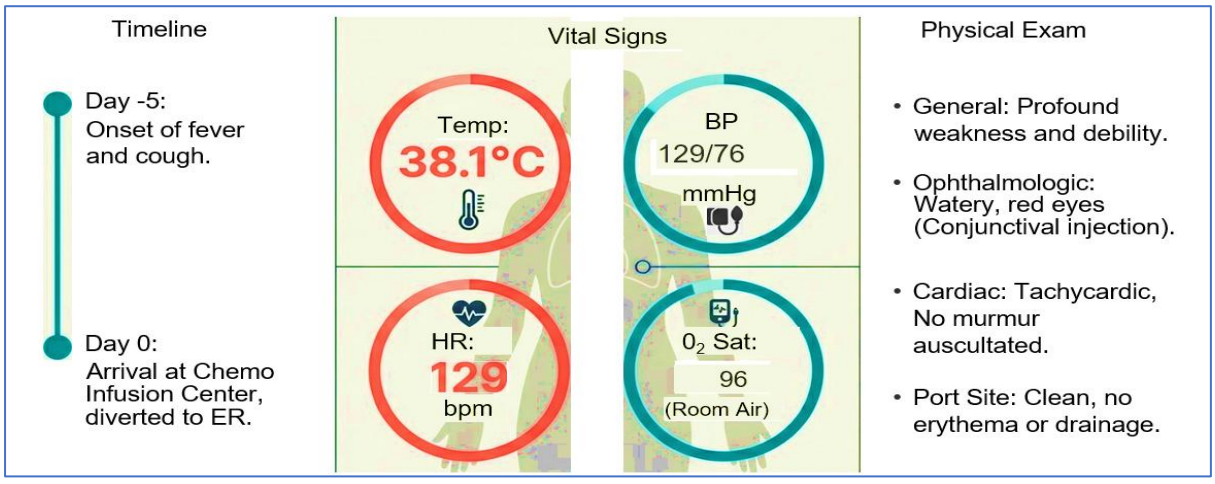
Effective Rescue Therapy for Infective Endocarditis: Combined Intravenous Nafcillin and Ceftaroline for Persistent MSSA Bacteremia in a Non-Surgical Candidate

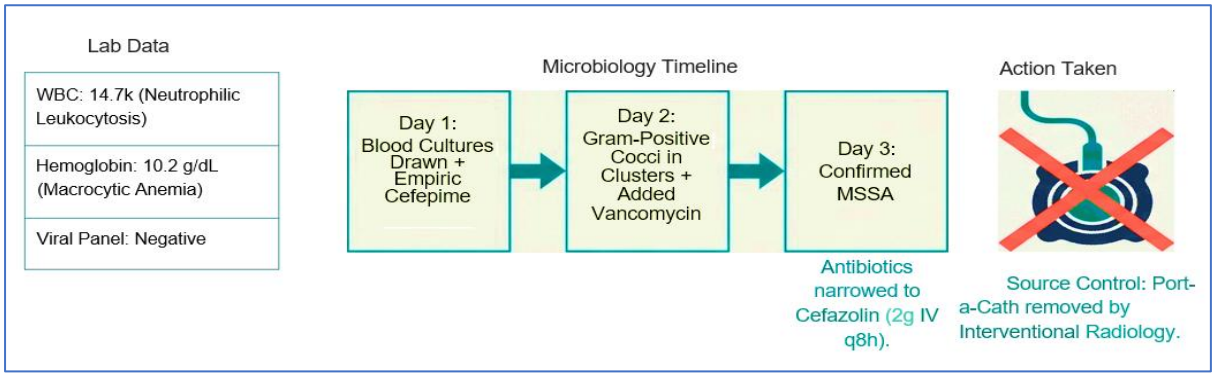
Patient details



Clinical presentation

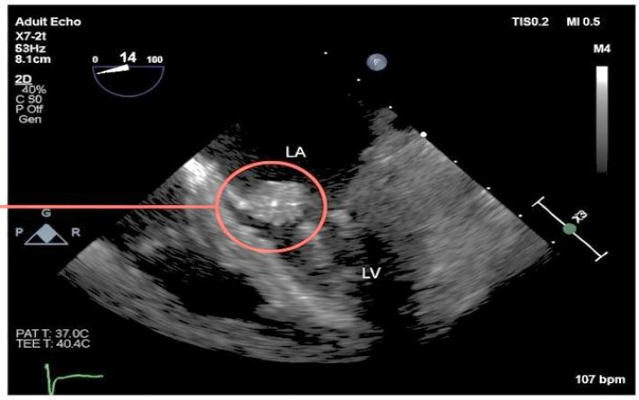


Investigations



Echocardiography

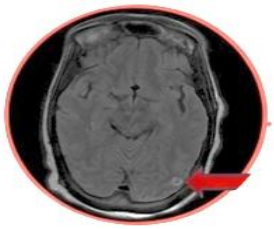
0.5 x 0.5 cm Vegetation on Anterior Mitral Leaflet



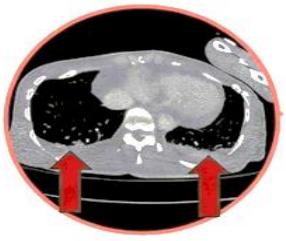
TEE Findings
- Mild Mitral Stenosis (Mean gradient 3.9 mmHg)
- No Regurgitation
- Thickening of leaflets

Clinical Sign Patient developed conjunctival hemorrhages (Roth spots equivalent), suggesting active septic embolization.

Other radiological investigations



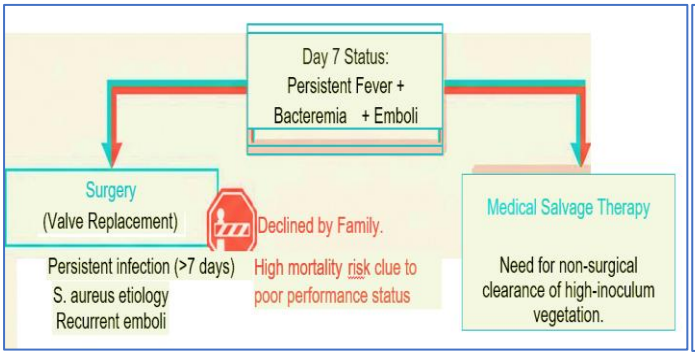
Brain MRI: Acute infarcts in cerebellum, basal ganglia, and frontal cortex

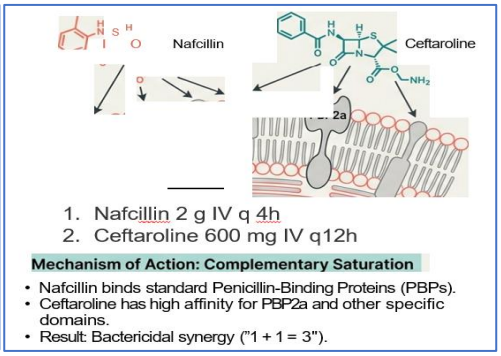


Thorax CT: Bilateral pleural effusions and consolidations

Implication: CNS involvement requires high blood-brain barrier penetration. Regimen switched to Nafcillin.

Day 7: change in treatment

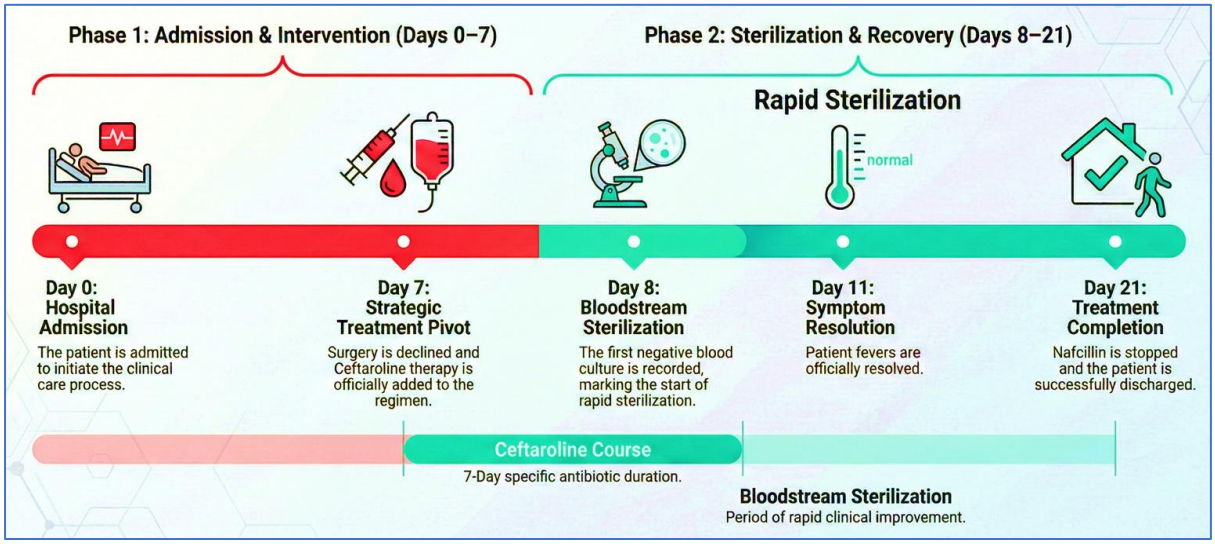




1. Nafcillin 2 g IV q 4h
2. Ceftaroline 600 mg IV q12h

Mechanism of Action: Complementary Saturation
- Nafcillin binds standard Penicillin-Binding Proteins (PBPs).
- Ceftaroline has high affinity for PBP2a and other specific domains.
- Result: Bactericidal synergy ("1 + 1 = 3").

Recovery



Discharge plan

- Location: Skilled Nursing Facility.
- Access: PICC Line inserted.
- Regimen: Cefazolin Monotherapy for 4 weeks.
- Note: Cefazolin chosen to reduce renal toxicity risk.

Clinical takeaways