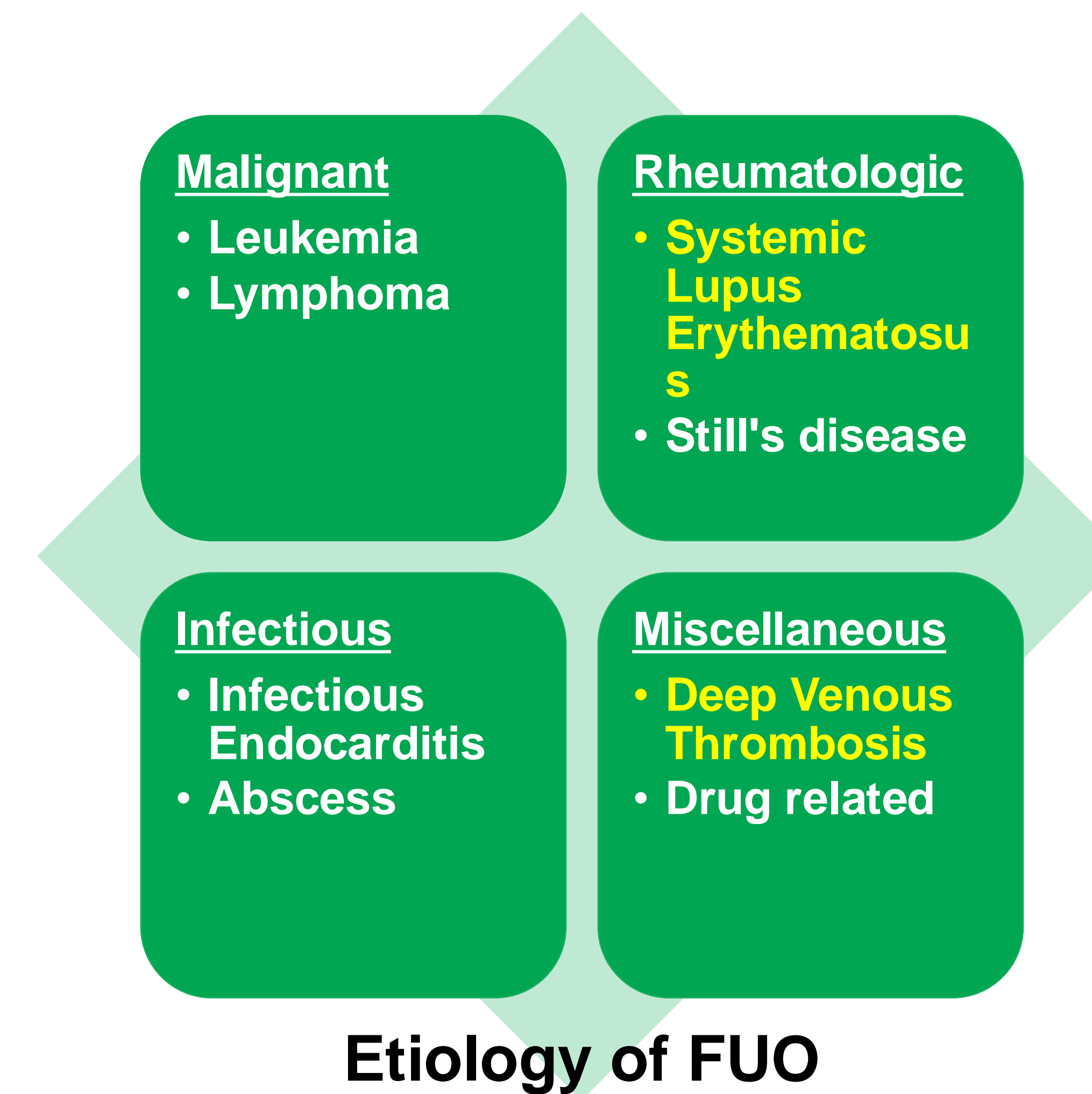


Introduction



Case description

Twenty-six-year-old male presented with 101.5 °F fever, chills, night sweats, vomiting, diarrhea, and fatigue lasting 5 days. He denied any recent travel or sick contact but endorsed working outdoors. On examination, he was euvolemic with no skin rashes. Labs showed ferritin elevation to 573 ng/ml, aspartate aminotransferase 68 U/L, alanine aminotransferase 59 U/L, hemoglobin 13.5 g/dL and platelet count 47,000/mcL. Blood cultures were all negative. Doxycycline was empirically started due to clinical concern for anaplasmosis.

Blood cultures 3 days post-admission remained negative; intermittent fevers persisted. Abdominal imaging showed mild splenomegaly. Suspecting culture-negative endocarditis. Transthoracic echocardiogram (TTE) revealed a trace pericardial effusion but no vegetations. Infectious workups were negative; bone marrow biopsy ruled out hemophagocytic lymphohistiocytosis.

Fevers became more frequent and severe, and he developed sharp, non-exertional substernal chest pains, lasting 30 seconds and improving with bending forward. Troponins were normal. EKG showed normal sinus rhythm without ischemic signs ruling out pericarditis. Patient developed memory lapses, confusion, and vision abnormalities. MRI brain was concerning for small infarcts. Cerebrospinal fluid analysis ruled out neurological infection. Normal head and neck angiography increased suspicion for a proximal embolic source.

Second TTE showed a 1 cm mitral valve vegetation, a small abscess and perforation, and moderate mitral regurgitation. Third set of blood cultures obtained on hospital day 6 grew *Haemophilus parainfluenzae*. Intravenous ceftriaxone was started. Nonbacterial thrombotic endocarditis was ruled out by negative antiphospholipid syndrome workup. Fevers resolved on therapy, and he subsequently underwent mechanical mitral valve replacement.

Discussion

- IE is an uncommon cause of FUO. Blood cultures and TTE remain cornerstones of evaluation.
- In one-third of cases, BC remains negative. This is especially seen in IE caused by fastidious organisms like *H. parainfluenzae*, which is known to affect the mitral valve and is associated with frequent embolization. The embolization can cause strokes and limb ischemia.

Conclusion

- Due to high morbidity and mortality, heightened suspicion is required to diagnose culture-negative infective endocarditis.
- Testing with transesophageal echocardiogram should be considered in patients who do not improve with empiric treatment.