

Endogenous Endophthalmitis

A Journey through Temporary Vision Loss

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Case Presentation

51-year old female
 - Chief Complaint: malaise
 - Past medical history: end-stage renal disease (ESRD) on hemodialysis (HD), hypertension, diabetes
 - Vitals: within normal limits
 - Physical exam: unremarkable
 - Chest x-ray: cardiomegaly, large bore catheter
 - WBC 18.5, Hb 11.2, Cr 13.10, BUN 92
 - Initial Troponin 15.14

Hospital Day 1:

- Emergent left heart catheterization reveals multivessel disease, recommend coronary artery bypass graft.
 - Patient's blood pressure drops, requiring pressor support and ICU admission.
 - Existing HD catheter removed and temporary catheter placed.
 - Patient reported haziness and floaters in right eye.



Hospital Day 2:

- Patient lost vision in right eye!
 - Stroke alert called and stroke ruled out.
 - Ophthalmology consulted and diagnose endogenous endophthalmitis.
 - Blood culture grew Staphylococcus aureus.

Transfer to tertiary care center:

- Vitreous tap & intravitreal antibiotic injection with vancomycin and ceftazidime with anterior chamber paracentesis.

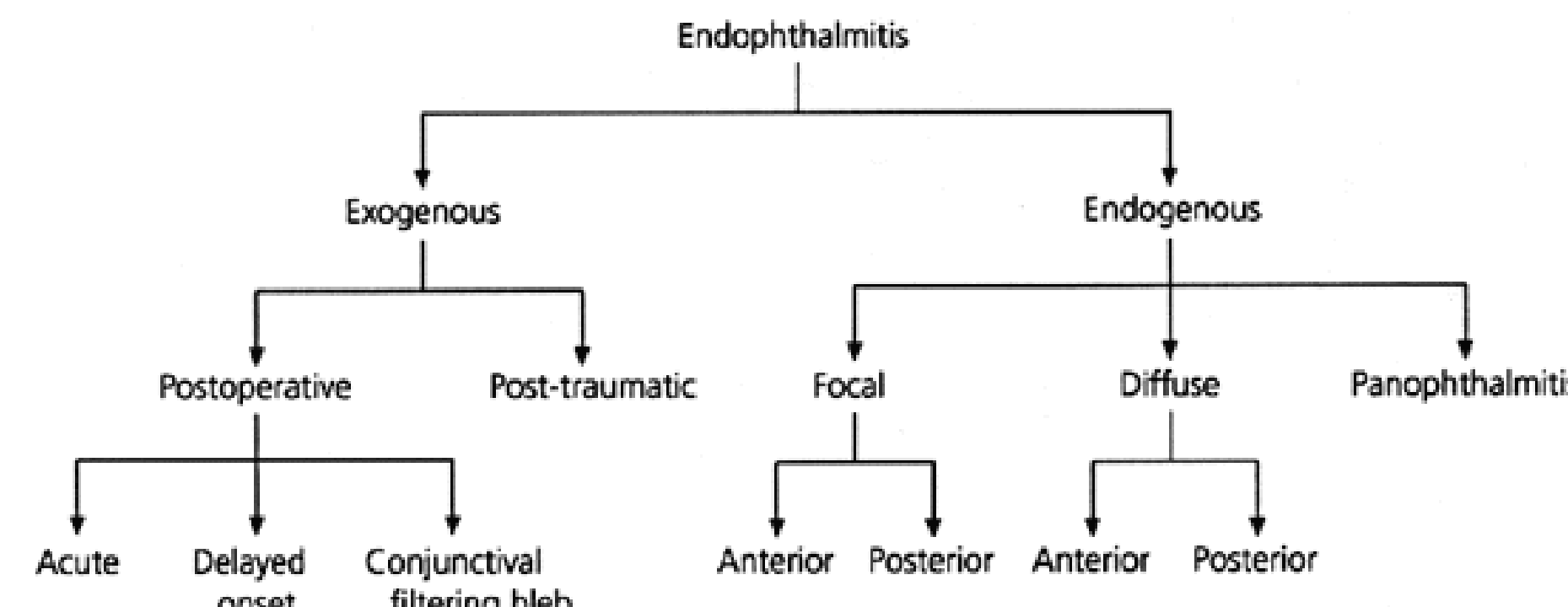


Remaining course:

- Vision improved!
 - Transesophageal echocardiogram (TEE) showed infective endocarditis.

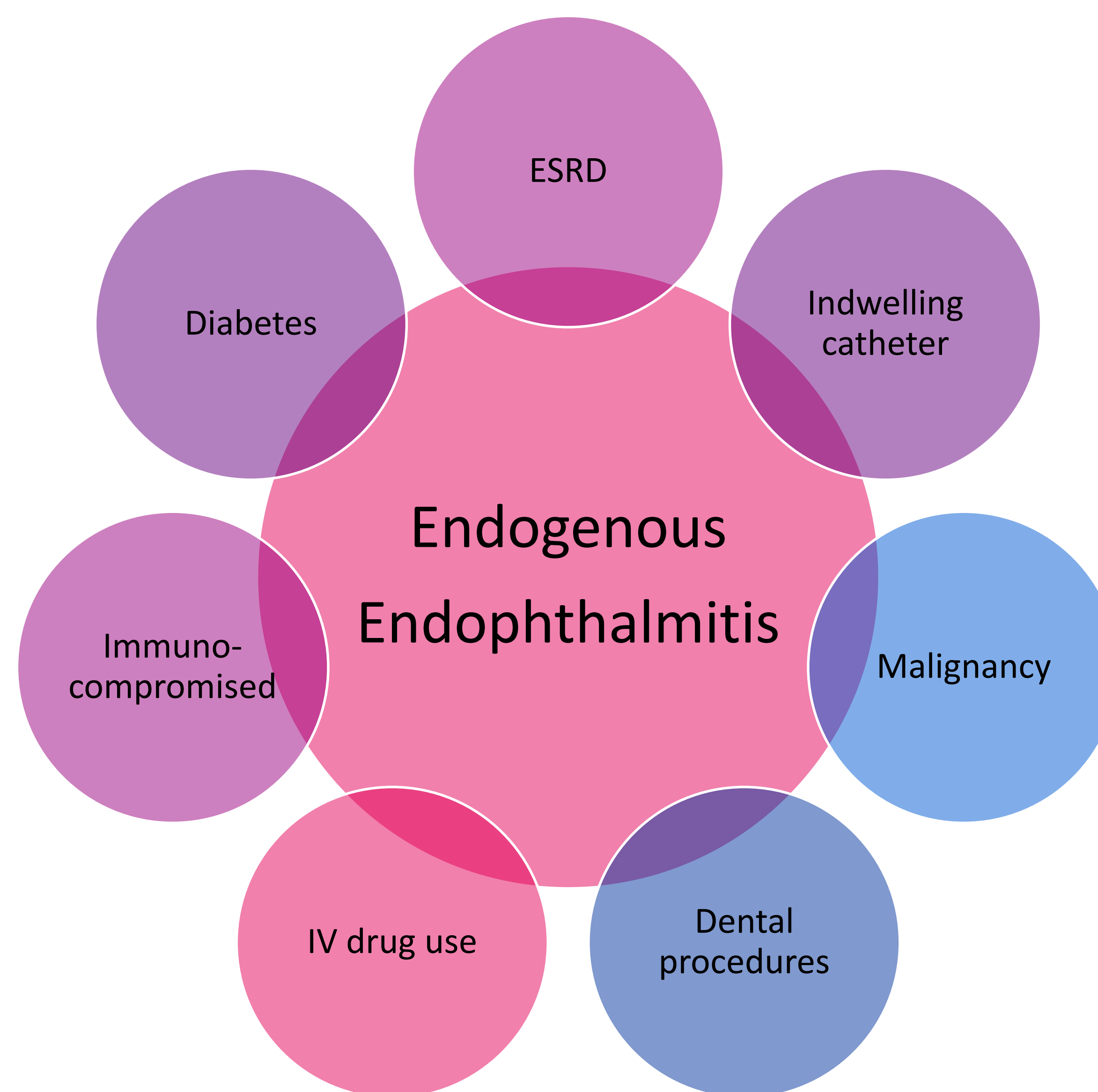
Pathophysiology

Endophthalmitis is inflammation of intraocular fluids (vitreous and aqueous) usually due to infection. Endogenous endophthalmitis is a subtype that results from hematogenous bacterial spread. It account for 2-8% of all endophthalmitis cases¹.



Endogenous endophthalmitis is a rare disease but there is a risk that it becomes more prevalent given longer lifespans of patients with chronic diseases and rising prevalence of long-term IV access.

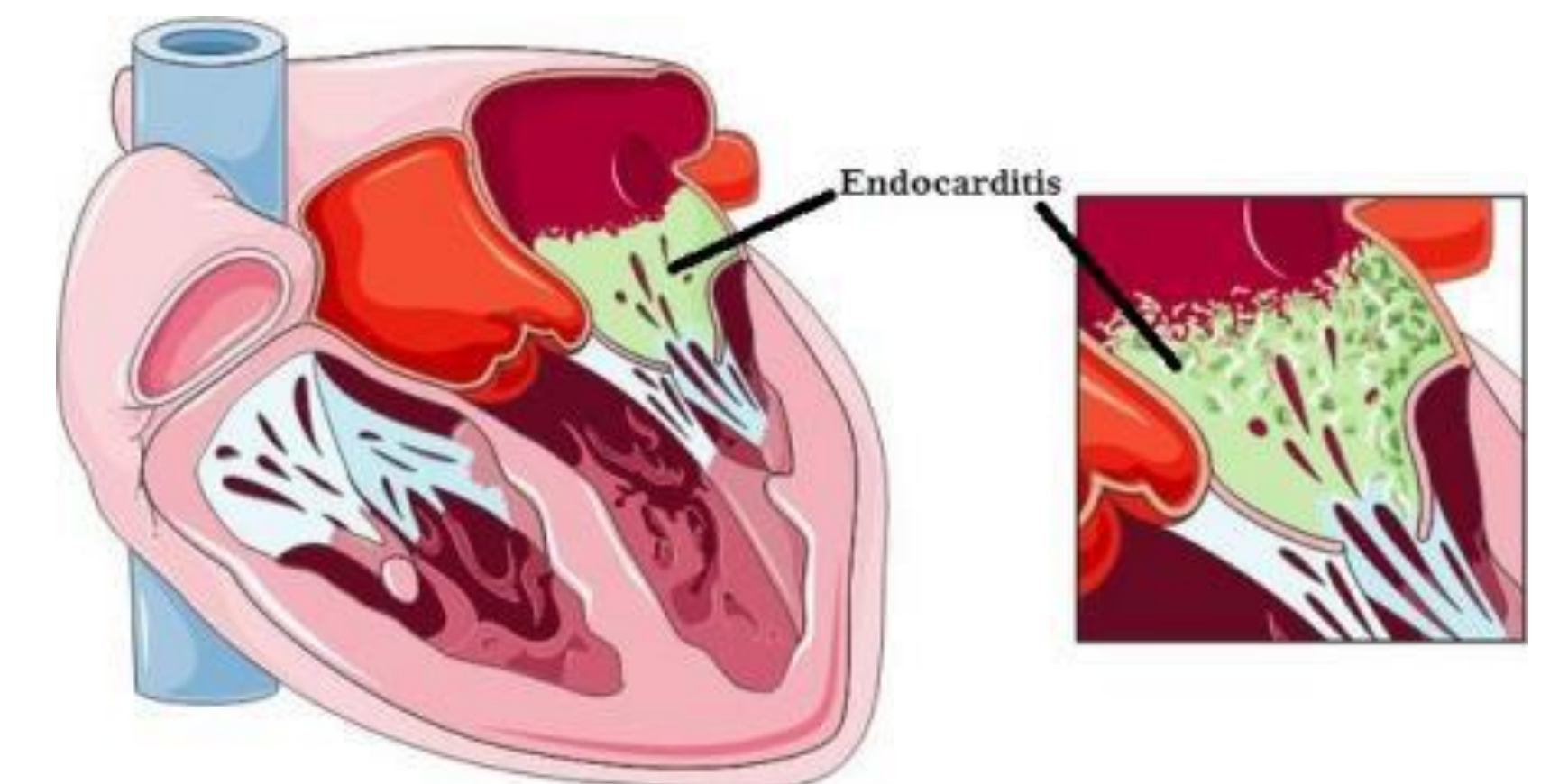
Risk Factors



Discussion

One study showed that 1 in 2000 cases of bacteremia were complicated by bacterial endogenous endophthalmitis². In the United States, the two major pathogens are streptococci and staphylococci³. Our patient fit this pattern as her blood cultures grew Staphylococcus aureus.

Infective endocarditis was shown to be the major cause in 40% of endogenous endophthalmitis cases in the United States⁴. A case report from 2019 explained that when endogenous endophthalmitis is diagnosed, it is prudent to consider infective endocarditis when there is no clear source⁵. This principle was applied to our case because on the initial transthoracic echocardiogram, there were no apparent vegetations. After the diagnosis of endogenous endophthalmitis was made, a subsequent TEE was ordered which did show vegetations suggestive of infective endocarditis.



Conclusion

Endogenous endophthalmitis is a rare but devastating disease that can result in permanent blindness. Clinicians need to keep this disease in their differential for a patient with new onset visual symptoms in setting of the risk factors shown to the left. Prompt ophthalmology referral and diagnosis can lead to substantially improved visual outcomes.

References

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