

# "SUCCESSFUL MEDICAL TREATMENT OF CEREBRITIS AND SEPTIC EMBOLI IN BLOOD CULTURE NEGATIVE BICUSPID AORTIC VALVE INFECTIVE ENDOCARDITIS"

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## ABSTRACT

Infective endocarditis (IE) affecting the central nervous system remains a rare and serious cause of morbidity and mortality in developing countries. The current treatment evidence of this infectious disease remains inconclusive due to lack of studies. We report a case of a 24-year-old male who developed bicuspid aortic valve infective endocarditis complicated by early cerebritis, stroke in the young, and central retinal artery occlusion (CRAO) who recovered after a successful course of medical treatment. To our knowledge, this is the only reported case of simultaneous neurologic septic emboli in a young patient diagnosed with culture negative bicuspid aortic valve IE and was effectively treated medically.

## CASE REPORT

This is a case of a 24-year-old male who presented to the emergency department with chief complaints of fever and change in sensorium. He developed bicuspid aortic valve infective endocarditis complicated by early cerebritis, stroke in the young, and central retinal artery occlusion (CRAO) who recovered after a successful course of medical treatment. Complete history and physical examination with systemic work up were done revealing the vegetation attached to the aortic valve measuring 56.3 mm x 19.9 mm. Cerebritis and infarct were confirmed on MRI and ophthalmic findings showed a CRAO. The patient was then managed with empiric intravenous antibiotics. Anticoagulant nor antiplatelet was not used in this case due to its lack of evidence. Patient's condition improved gradually, and he was then discharged after a one-and-a-half-month course of treatment. On his recent follow-up, he was doing well and even better.

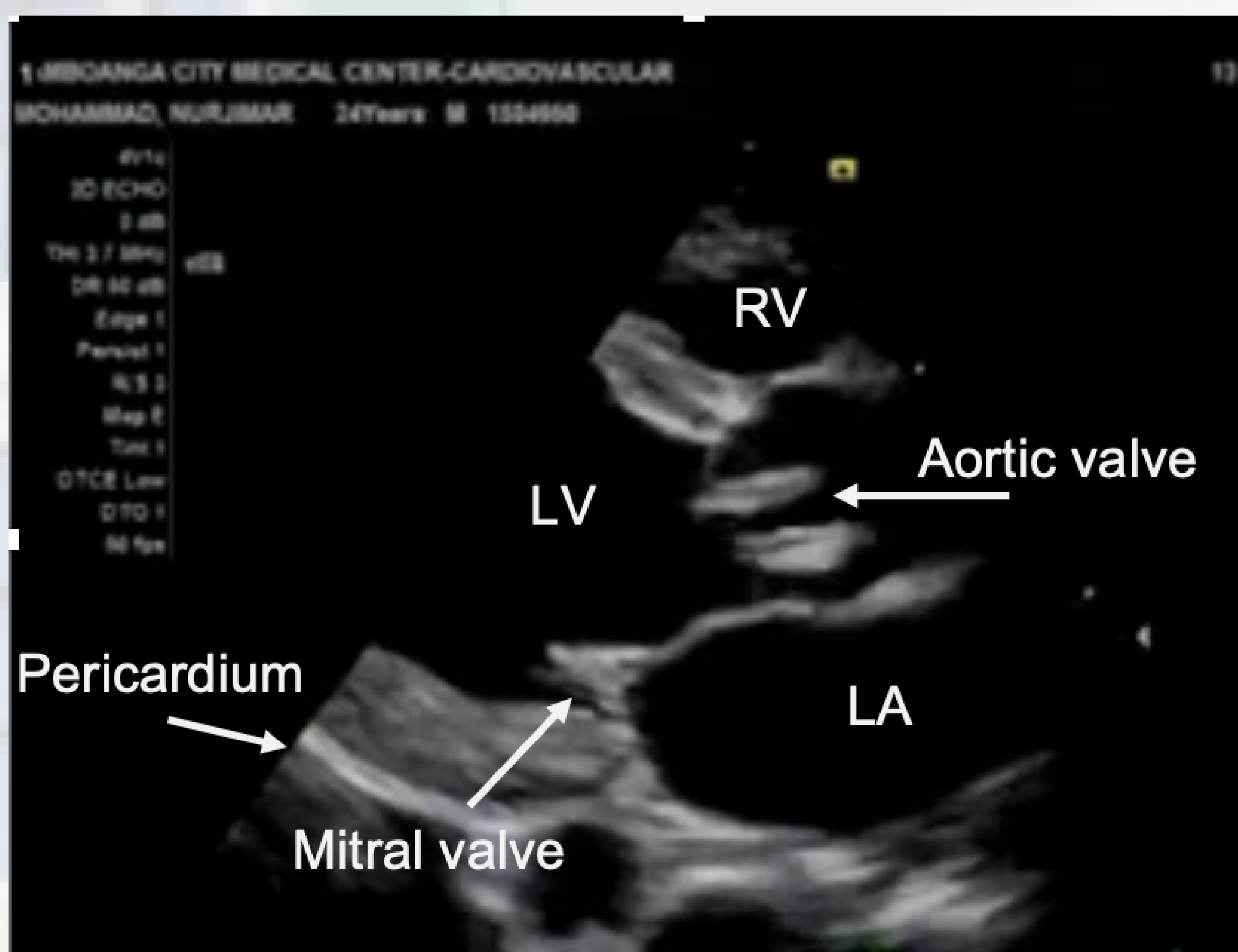


Figure 1. Shows the Bicuspid aortic valve with prolapse of the anterior aortic cusp. Also noted with calcifications attached to the aortic cusp suspicious of vegetation.

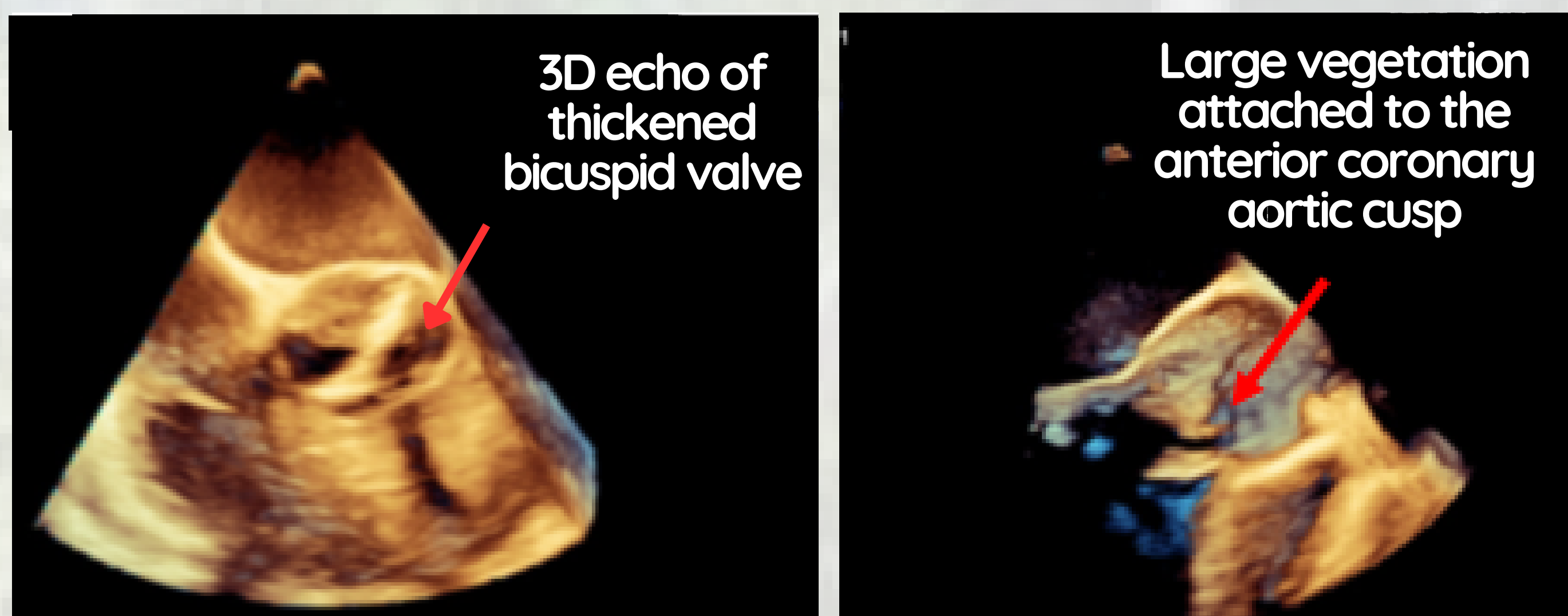


Figure 2A. Shows the transesophageal 3D echocardiography of the thickened bicuspid aortic valves (red arrow pointing). 2B Oscillating echogenic densities are seen attached to both cusps. The red arrow pointing to the bicuspid aortic valves with vegetation measuring 56.9 x 11.9mm which results to a poor coaptation

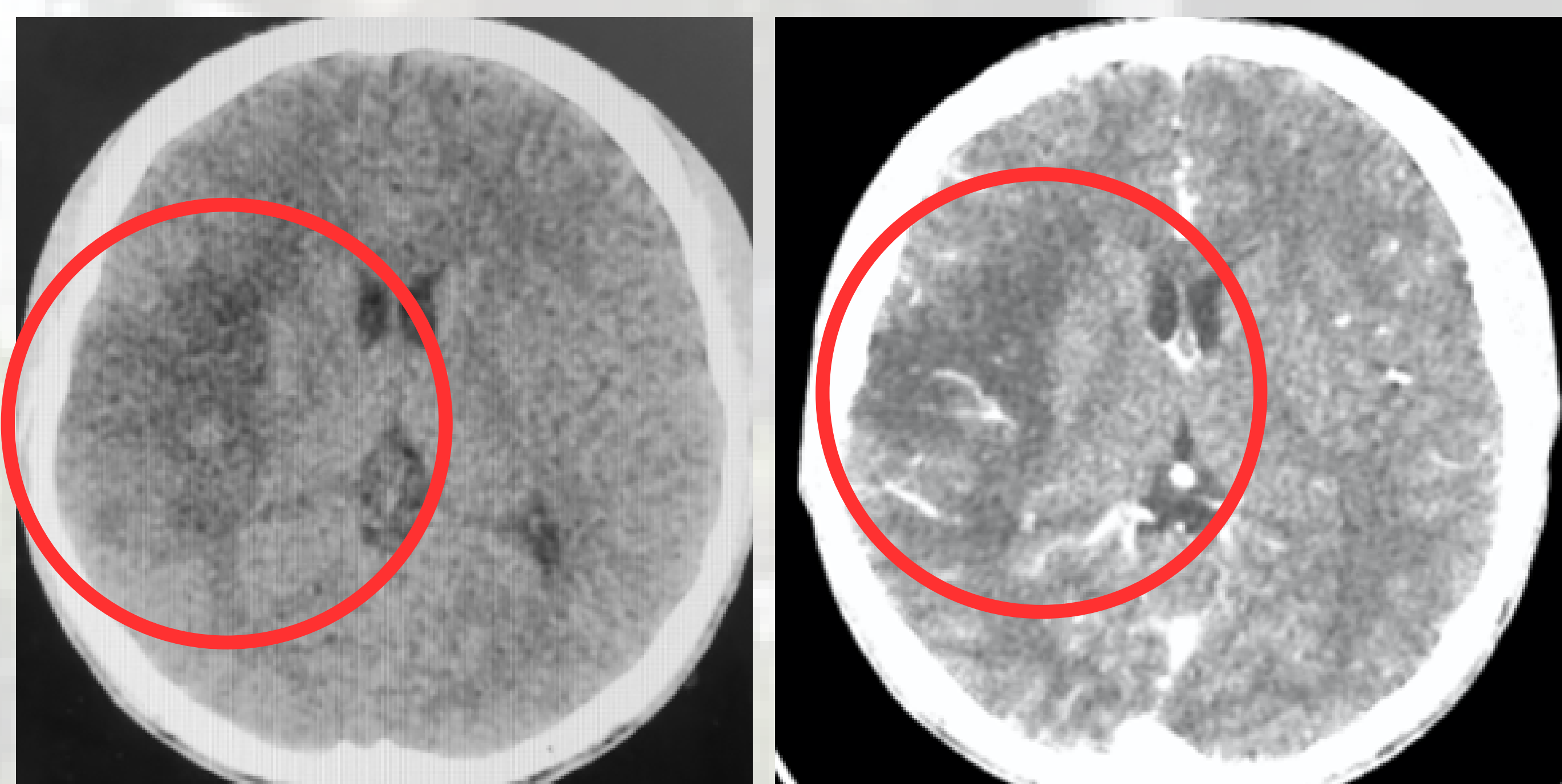


Figure 3A. CT scan cranial plain and with contrast shows acute infarct, right MCA territory. 3B. CT scan cranial with contrast shows irregular enhancements with cortical hypodensities similar to Early Cerebritis.

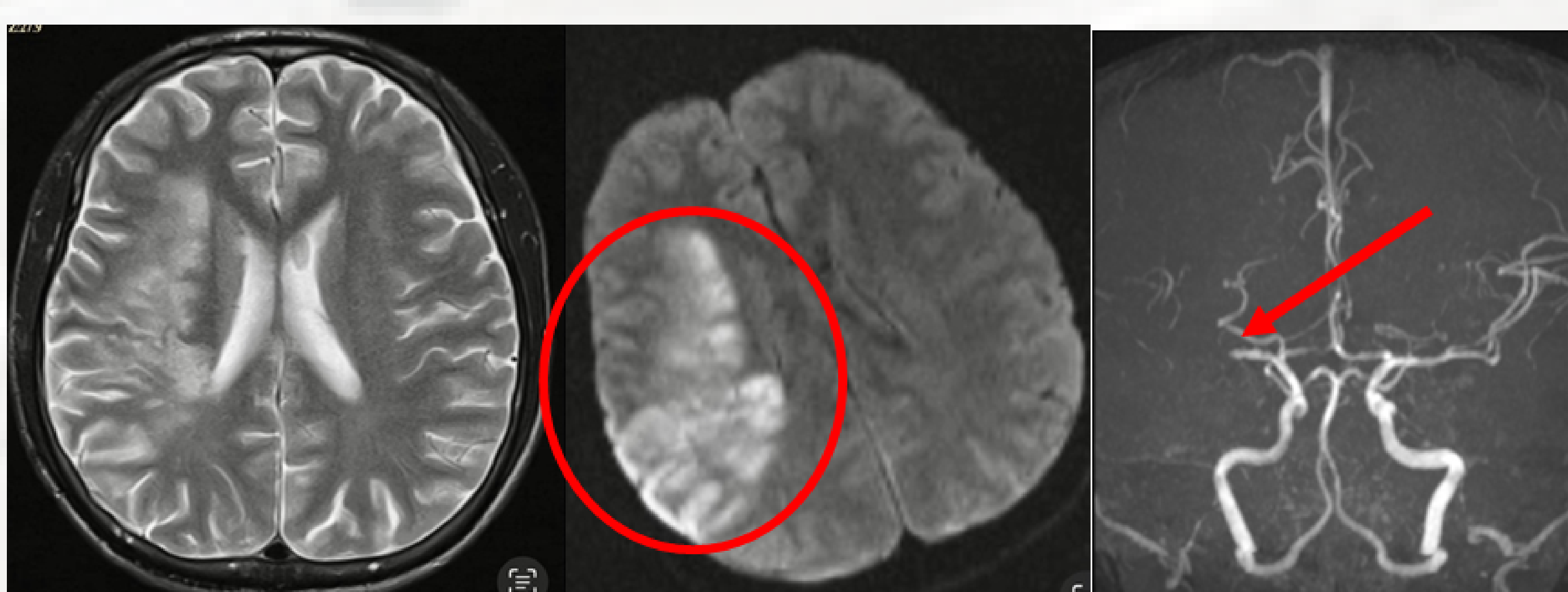


Figure 4. Showing the MRI with contrast result with noted late capsule formation with crenulated appearance (shrinking) secondary to antibiotic therapy. With treatment, the abscess cavity gradually collapses while the capsule thickens and then the overall mass diminishes in size.



Figure 5. Showing the MRI with contrast result with noted late capsule formation with crenulated appearance (shrinking) secondary to antibiotic therapy. With treatment, the abscess cavity gradually collapses while the capsule thickens and then the overall mass diminishes in size.

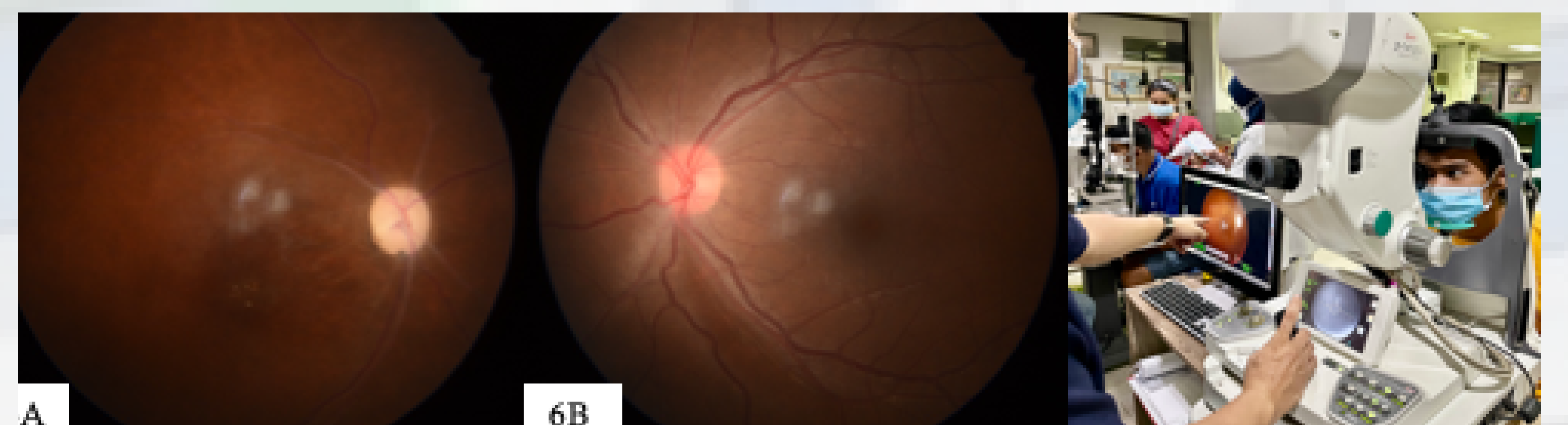
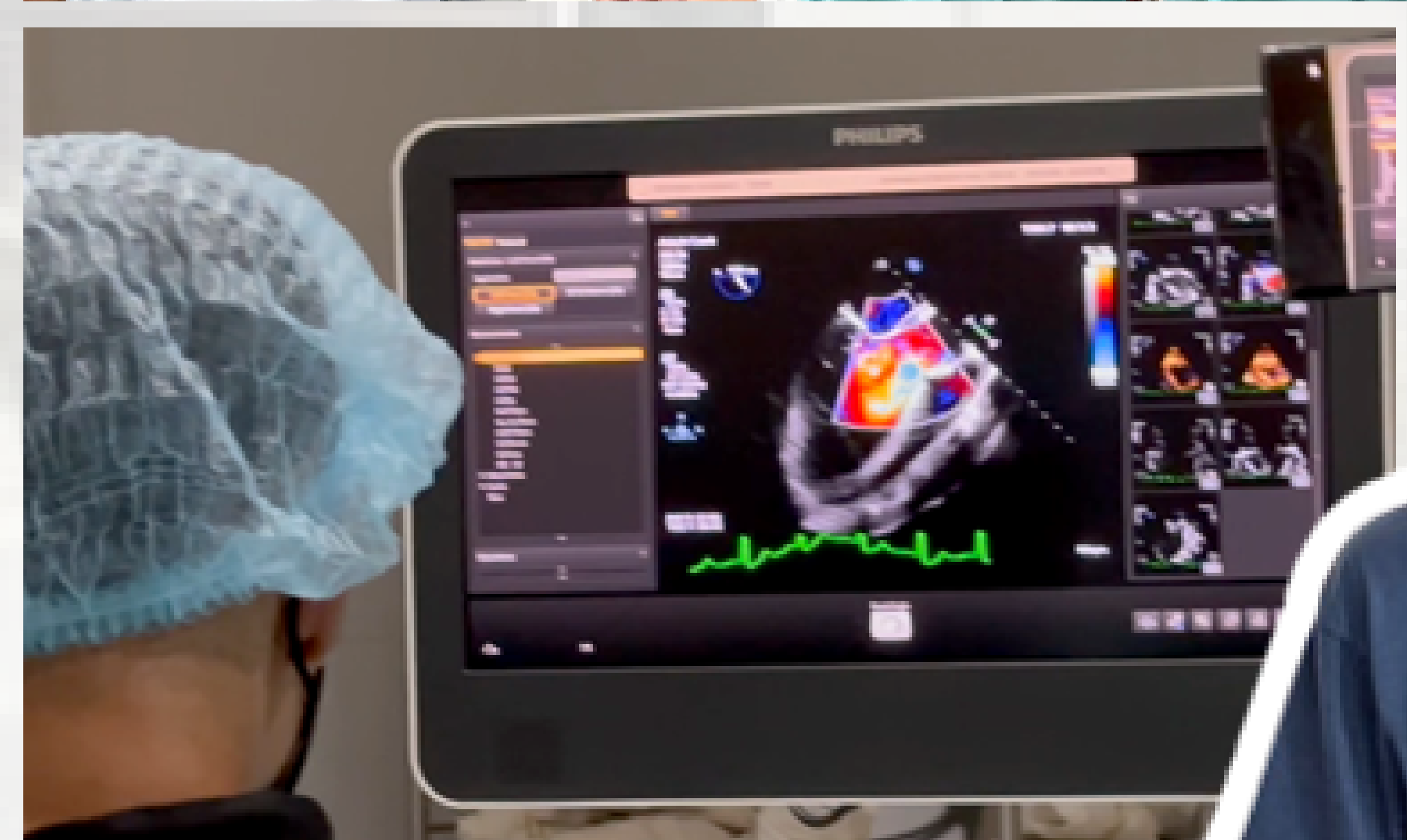


Figure 6. Shows the fundoscopic exam of both eyes. 6A shows a pale optic disc and selected non-perfused Blood vessels consistent with optic atrophy of the right which could probably from the central retinal artery occlusion secondary to the infective endocarditis. While 6B shows clear media, distinct disc border, yellow-orange disc, dilated and tortuous blood vessels.

## DISCUSSION

Due to its rarity and uncommon complications with its annual local incidence rate of 0.001%, the diagnosis and treatment of complicated IE requires expert opinion and multidisciplinary approach. This case report provided valuable information to the limited literature of infective endocarditis and its rare complications, most specially the diagnostic approach, echocardiographic assessment, the early recognition of cerebritis occurring simultaneously with stroke in the young, and CRAO, and the choice of management. This also recommends that thorough examinations are crucial for its early detection and timely therapeutic intervention in order to prevent this life-threatening condition.



## CONCLUSION

IE remains an uncommon life-threatening condition rarely complicated by neurologic disease which require high index of suspicion. The management of IE and its complications include timely diagnosis with proper history and physical examination including complete work up such as laboratory echocardiography, and other imaging modalities. A course targeted antimicrobics and surgical management if warranted, greatly reduce the risk of progression and recurrence of this infection. These rare condition demands a multidisciplinary collaborative approach in order to optimize outcomes.

## REFERENCES:

Loscalzo J, Fauci A, Kasper D, Hauser S, Longo D, Jameson J. eds. Harrison's Principles of Internal Medicine, 21e. McGraw Hill; 2022.  
Anne G. Osborn. Osborn Brain: A fundamental Guide for Residents and Fellows. Elsevier Health Sciences. 2019  
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