



SECURED WAY OF OPERATION FOR COARCTATION OF AORTA

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Background

Coarctation of the aorta (CoA) is a congenital heart defect characterized by narrowing the aorta, typically distal to the left subclavian artery. It accounts for approximately 5–8% of all congenital heart diseases, with an incidence estimated at 4 per 10,000 live births, and is the sixth most common lesion in congenital heart disease.

In 2008, The American College of Cardiology and American Heart Association (ACC/AHA) guidelines for adults with congenital heart disease recommended intervention for coarctation in the following settings :

Peak-to-peak coarctation gradient 20 mmHg; which is the difference in peak pressure proximal and beyond the narrowed segment.

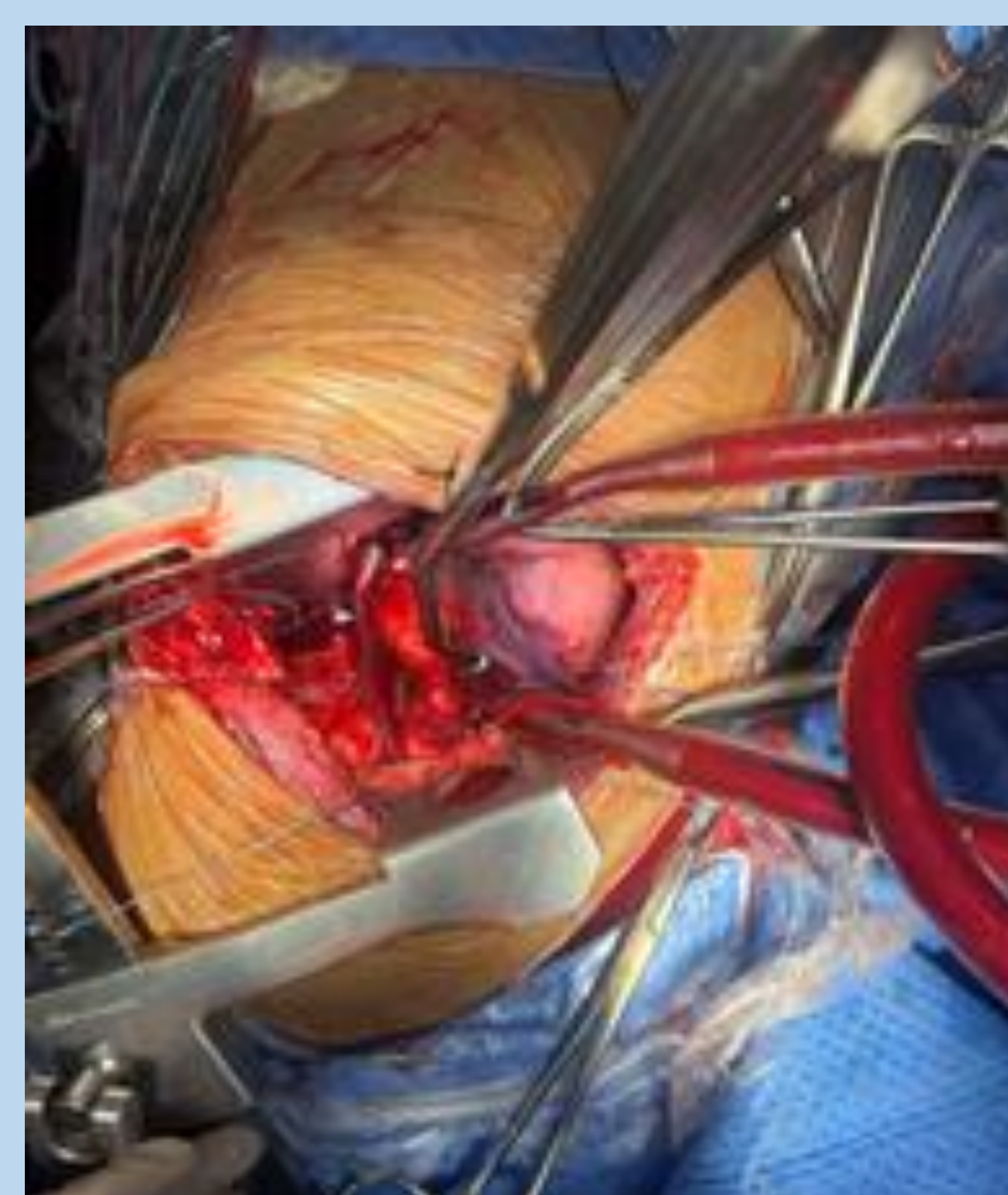
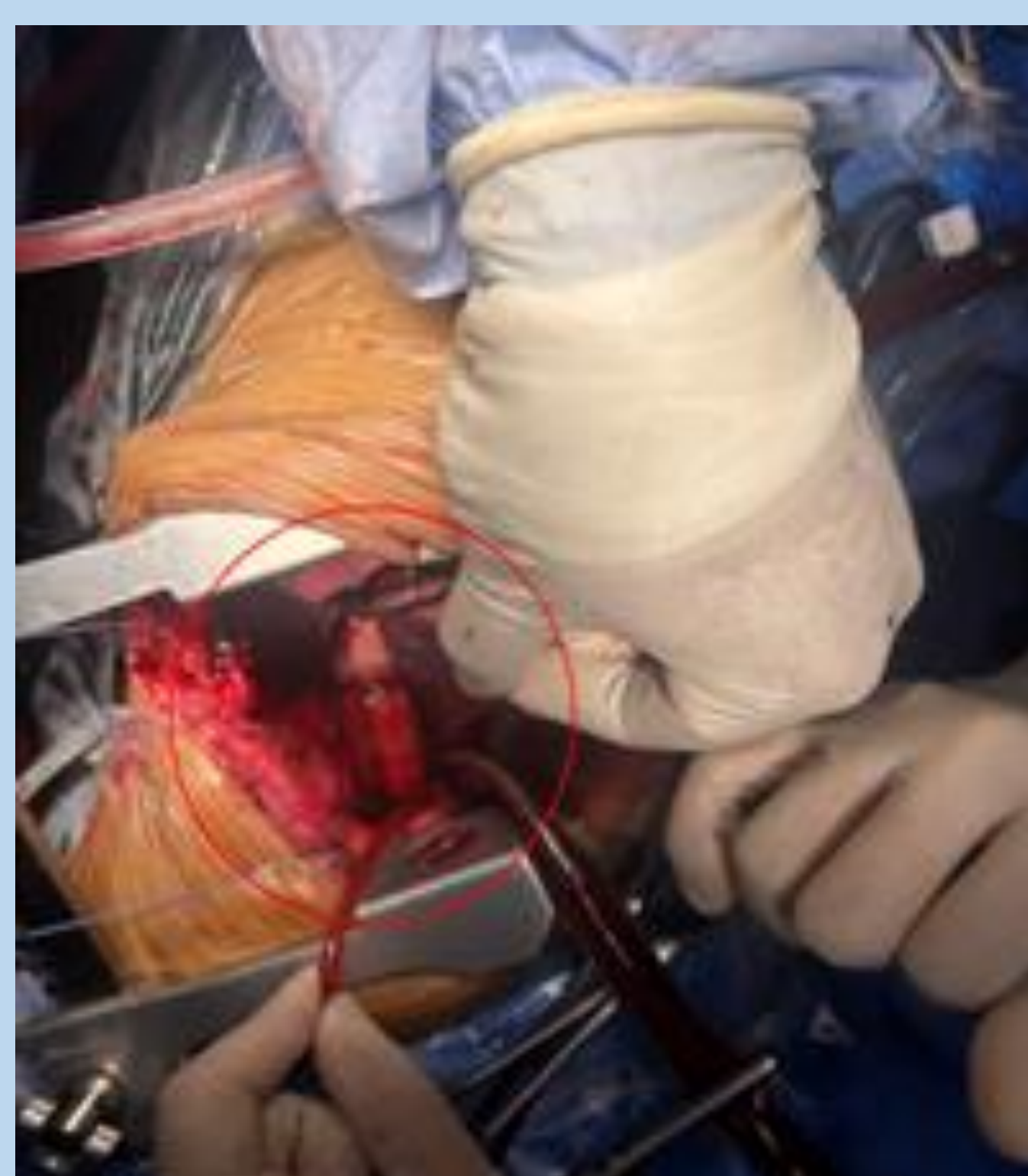
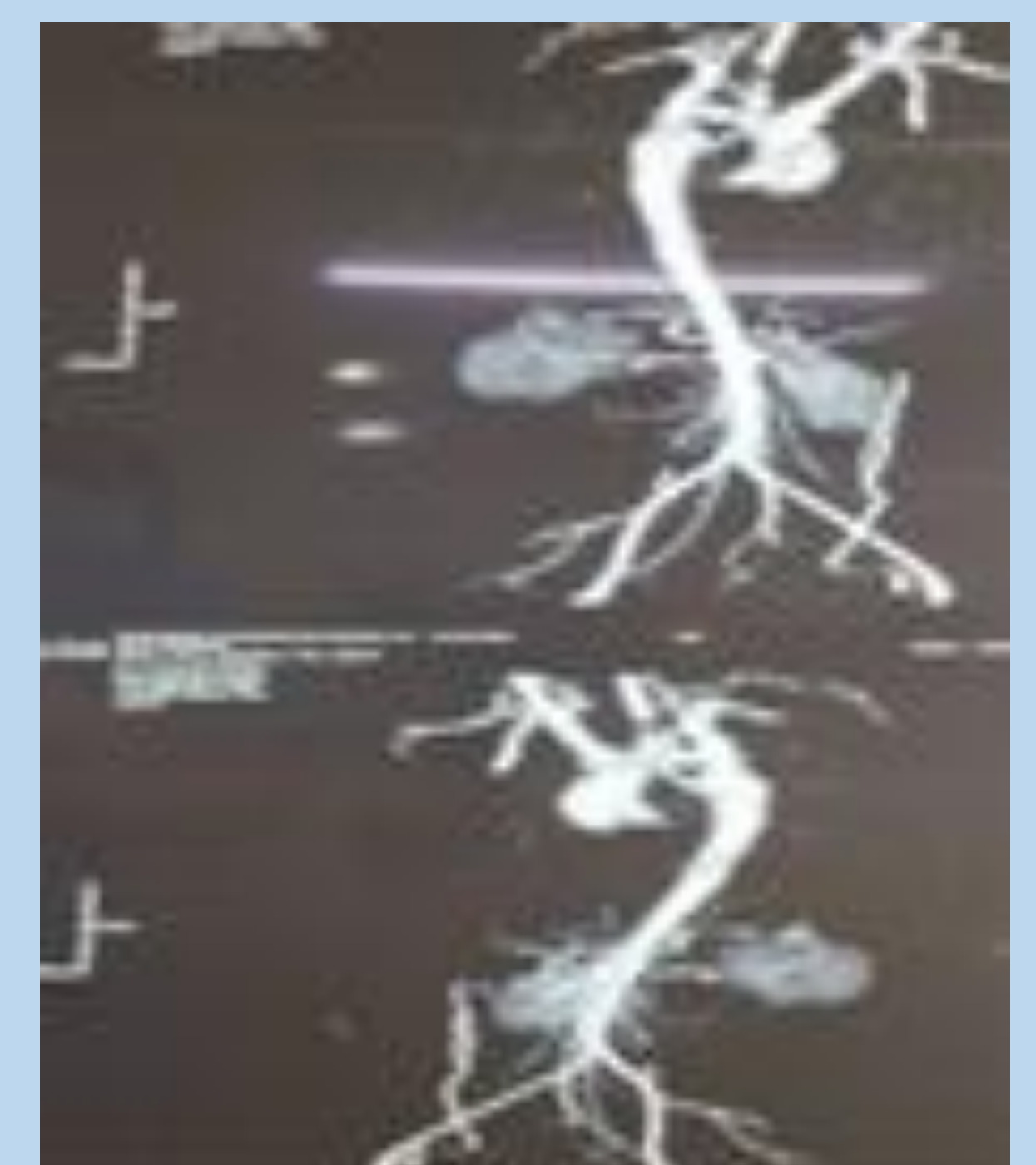
Peak-to-peak coarctation gradient ,20 mmHg with imaging evidence of significant coarctation and radiologic evidence of significant collateral flow. The resting gradient alone may be an unreliable indicator of severity when there is significant collateral circulation

Case report

22yrs Old Monk went to specialist clinic in Mandalay for left sided chest pain off and on, dyspnoea on exertion and high blood pressure for 3 years duration. On examination, it is showed upper limb BP 160/100mmHg, lower limb BP – 130/90mmHg, and no murmurs. The physician suggested doing Echo. Echo diagnosed Bicuspid aortic valve and Coarctation of aorta with good LV function so he was referred to CVSW (NOGTH) for further management.

CT angiogram and preop optimizing was done.

On 13.6.2024, routine intraoperative preparations (double Arterial line (left radial and left femoral), central venous line, induction of General anaesthesia), and positioning (Right Lateral Position with Shoulder roll Augmentation). Postero – lateral incision through 3rd intercostal space with cutting of 4th rib was done. As a special procedure to prevent spinal cord ischaemia and to reduce the impact of clamping syndrome, bypass cannulation was done with proximal 18Fr aortic cannula and distal 20Fr aortic cannula. After that, resection of coarctation segment and repair with interposition graft (30mm size Dacron graft). Total operation time is 2hours and 30mins (Clamp time – 45mins).



Conclusion

In adults, CoA may be associated with other vascular lesions and clamping and de-clamping syndrome during repair. To avoid these syndrome, aortic bypass cannulation with adequate caliber could be used as a secured way.

Patient was admitted to CICU at 2pm and continue postoperative care. Ventilator was off at 4:30 pm. Only one unit of blood is required, and inotrope support is not needed. GTN infusion was given for control of BP. For pain control, Paracetamol and Morphine infusion were given for 1 day and then switch to oral drugs. On the 1st POD, patient can walk and do breathing exercise with no special complaints. Patient was discharged at 7th POD. Now patient is free from signs and symptoms and 3monthly follow up.

Discussion

CoA was once thought to be a relatively simple lesion that would be “cured” upon repair of the narrowing, however, despite relief of the anatomical obstruction the subsequent risk of early morbidity and death persists.

In adults, CoA may be associated with other vascular lesions and clamping and de-clamping syndrome during repair. To avoid these syndromes and the serious spinal ischemia, this report outlines one of optimal management strategies of this disease and provides insights into approaching this straightforward but challenging condition.

Further information

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