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Anaesthesia management for aneurysm clipping surgery in patients with severe aortic stenosis with regurgitation: A case report

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Abstract
Coexistence of both intracranial aneurysm and aortic stenosis is quiet rare but it may complicate management of either disease. Managing it is like tug of war, but a good case manager can find that delicate balance. We recently managed patient with severe aortic stenosis presented with anterior communicating aneurysmal.
Case-52year old female with complaints of severe headache and vomiting episodes since 10 days. With known case of hypertension and hypothyroid since 4 years on irregular medications posted for aneurysmal clipping. On pre assessment check-up we found pansystolic murmur on auscultation. On investigations it revealed concentric LVH with severe AS with moderate AR maintaining 60% ejection fraction. Other routine investigation were normal. Case was successfully conducted under general anaesthesia with endotracheal tube intubation with pre induction arterial line insertion. Anaesthesia management was tailored keeping in mind hemodynamic stability throughout procedure. With all standard ASA monitoring.

Keywords: Intracranial aneurysm, severe aortic stenosis

Introduction
Aortic stenosis -Condition fixed cardiac output which leads to ischemic and arrhythmic changes. It is risk factor for perioperative morbidity and mortality. Whereas aortic regurgitation with backward flow of blood during diastole phase
Ruptured intracranial aneurysm with risk of cerebral ischemia rebleeding hypertension & increased ICP. In addition, it causes aggravation of cardiac complication e.g. arrhythmia, cardiomyopathy.
So combination of both conditions & managing case with such a different requirement it's a challenging part.

Case report
We reported a case of 52 y/F, wt-70kg, BMI 30.2 kg/m^2 acute onset of severe headache & vomiting episodes since 10 days. She is k/c/o hypertension & hypothyroid since 4 years on irregular medications. Hr -72 bpm, NIBP-140/88 mm of hg SpO2 -99%.
CNS: GCS-15/15 no neurological deficit.RS: WNL
CVS: Pansystolic murmur aortic and pulmonary area (H/o multiple syncopal attacks) her 2D ECHO shows: Concentric LVH, severe AS with moderate AR LVEF 60%: (AV PG 92 mm of hg, valve area 0.8 cm2)
CT brain: Acute SAH bilateral frontoparietal lobe.
DSA ACOM artery aneurysm without any sign of vasospasm-
Laboratory routine investigation: WNL, ECG: WNL.

Discussion
AS + AR for Aneurysmal clipping
Maintenance of steady depth of anesthesia.
Smooth induction, hemodynamic stability to avoid →Cardiac complication (Ischemia, Arrhythmia, MI) and cerebral complication (IOAR, HTN, and Raised ICP)

Proper fluid management

All measures to be taken to maintain cerebroprotection & brain relaxation (Head elevation, avoid neck compression, glycemic control, normocapnia, iv mannitol 20%)- Early recovery & post-operative blood pressure & pain management

Conclusion

Patient with severe aortic stenosis with aortic regurgitation for aneurysm clipping surgery requires-

- Pre evaluation for severity and extent of disease,
- Proper preoperative optimization
- Case based modification of anaesthesia technique
- Vigilant monitoring to get favourable outcome

Conflict of Interest

Not available

Financial Support

Not available

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