



Penn Medicine

Management of Acute Pituitary Apoplexy after Circulatory Arrest and Mechanical Aortic Valve Replacement

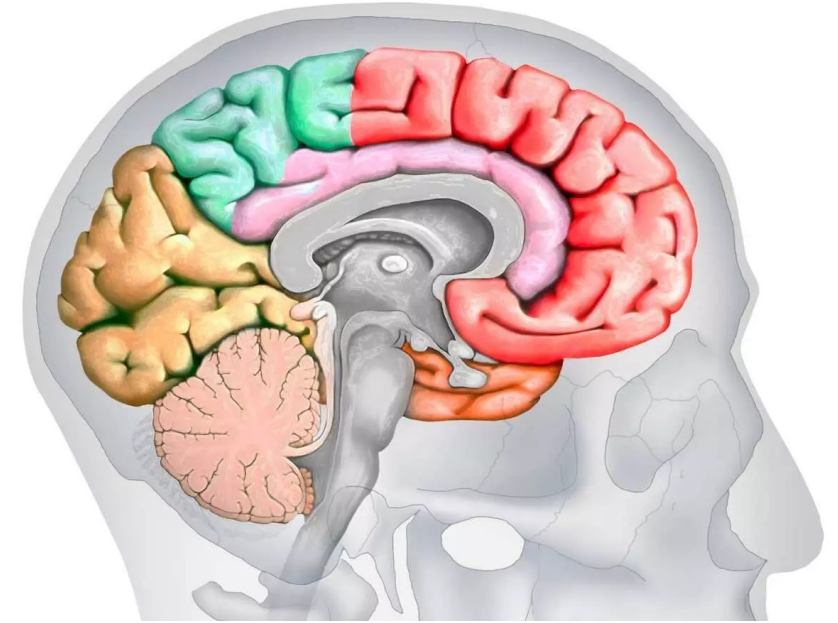
A CASE REPORT

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Background

- ▶ Pituitary apoplexy after cardiac surgery is a rare but described phenomenon that often requires operative intervention.
 - Pituitary apoplexy is a clinical syndrome caused by acute hemorrhage or infarction of the pituitary gland.
- ▶ Patients may present with headache, visual symptoms (ptosis, meiosis, ophthalmoplegia), or altered mental status.
- ▶ We present a rare case of pituitary apoplexy following circulatory arrest and implantation of a mechanical aortic valve, requiring both post-operative anticoagulation and an acute neurosurgical resection.



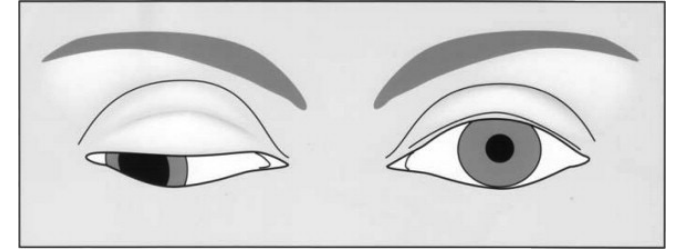
Clinical summary: Pre-operative evaluation and procedure

- ▶ A 54-year-old man with a bicuspid aortic valve with severe aortic stenosis and aortic dilation was recommended for mechanical root and ascending hemiarch replacement.
 - No neurologic symptoms were reported during his preoperative evaluation.
- ▶ The operation was an uncomplicated mechanical root and ascending hemiarch replacement performed under circulatory arrest with cooling to 18°C and retrograde cerebral perfusion (duration 19min).



Clinical summary: Post-operative presentation

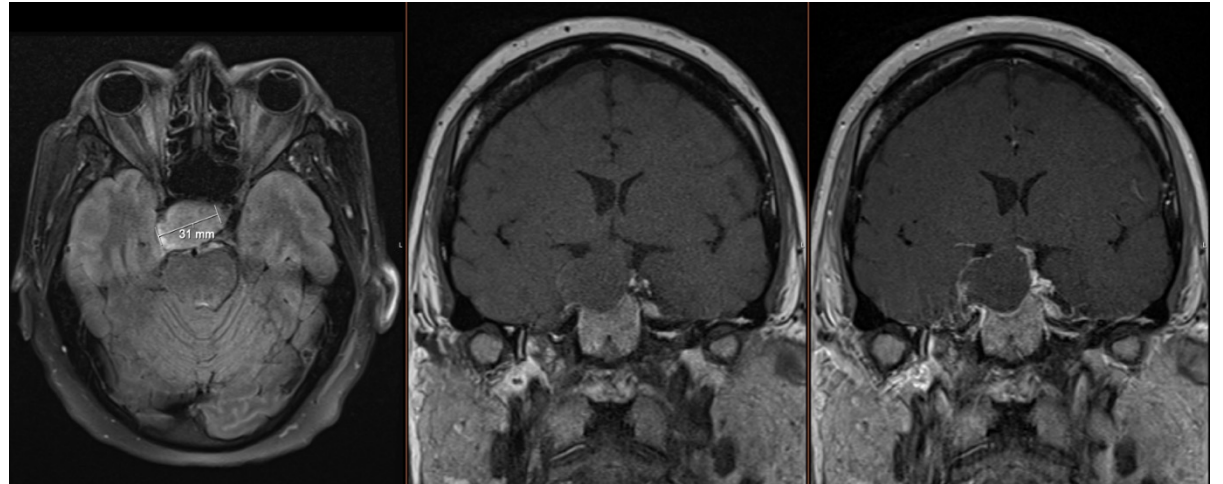
- ▶ The patient was weaned off sedation and then noted to have ophthalmoplegia of the right eye and a fixed, dilated pupil.
- ▶ A stroke alert was called.
 - An emergent non-contrast head CT and CT angiogram of the head and neck did not show evidence of acute ischemic infarct or hemorrhage.
- ▶ A 3.0cm mass was appreciated in the sellar/suprasellar cistern.
- ▶ Subsequent MRI demonstrating a cystic mass compressing the right optic nerve with extension into the right cavernous sinus.



Clinical summary: Post-operative decision-making

- ▶ The patient trialed medical management with steroids and diuresis to treat his cerebral edema.
- ▶ Daily ophthalmic exams revealed progression of visual symptoms.
 - This finding prompted more urgent neurosurgical intervention.
- ▶ CT surgery and Neurosurgery worked together to balance the risks and benefits of anticoagulation for his recent mechanical valve with timing of operative intervention for his worsening intra-pituitary hemorrhage.

Patient's post-operative MRI with 3.0cm mass in sellar/suprasellar cistern



Clinical summary: Post-operative anticoagulation management

- ▶ A heparin drip was initiated on POD4 while continuing to hold aspirin/warfarin.
- ▶ On POD9, he underwent a successful trans-sphenoidal neuro-endoscopic excision.
 - Post-operatively, the patient developed intracranial hemorrhage in the operative bed, so anticoagulation continued to be held.
- ▶ Two days later, he developed a DVT in his left upper extremity, which prompted initiation of a heparin drip.
 - Monitoring scans after heparin initiation demonstrated stability of the hemorrhage.
 - He was ultimately transitioned to warfarin.
- ▶ The patient recovered well and is currently living at home with some residual diplopia.

Conclusions

- ▶ This case supports the idea that systemic anticoagulation can be temporarily held, even in the acute period after mechanical valve replacement, when risk of a thromboembolic event is highest.
- ▶ Thoughtful multidisciplinary conversations are necessary when making decisions about anticoagulation and the optimal time for surgical intervention after intraoperative pituitary apoplexy.
- ▶ In this case, the patient's pituitary mass was successfully resected without major bleeding or thromboembolic complications.

