E-109 CANCER-TYPE SOMATIC MUTATIONS IN SACULAR CEREBRAL ANEURYSMS

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None.

Introduction Saccular Intracranial aneurysms pathogenesis is still unclear. We investigated whether somatic mutations have role in saccular intracranial aneurysm pathogenesis.

Methods We collected aneurysm samples from routine surgeries and collected circles of willis samples as background control group from autopsies. We performed whole exome sequencing of DNA derived from 20 saccular cerebral aneurysms followed by somatic variant calling.

Results Eleven (55%) of the 20 patients had detectable non-synonymous somatic mutations and in total, 48 mutations were detected in the aneurysm samples. The mutations were highly enriched in cancer-related genes and 37 were predictably deleterious. A p.Tyr562Asp somatic mutation was detected in the PDGFRB gene; predictably deleterious. A p.Tyr562Asp somatic mutation was detected in the PDGFRB gene; somatic mutations at the same codon have been reported in fusiform cerebral aneurysms.

Conclusion These results widen the concept on the role of somatic mutations in cerebral aneurysms, indicating their possible role in the more common saccular aneurysm, similarly to the rarer fusiform aneurysm.


E-110 VENTRICULOATRIAL SHUNT FRACTURE WITH ENDOVASCULAR RETRIEVAL: TECHNICAL PEARLS FOR BAILOUT

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Introduction Placement of ventriculoatrial (VA) shunts for management of hydrocephalus is typically reserved for cases in which accessing the peritoneum and the pleura for ventriculo-peritoneal shunt (VPS) is contraindicated. VA shunt complications, such as cardiac arrhythmias, endocarditis, thrombosis and pulmonary hypertension, can be severe. We report a rare presentation of VA shunt malfunction due to a fractured catheter which required endovascular transvenous retrieval. A review of VA shunt complications at our institution and within the literature was performed to determine the prevalence of this type of rare complication. We provide a detailed report of the procedure and endovascular approach for shunt retrieval which required significant technical consideration.

Methods Medical records of patients who underwent VA shunt revision from January 1st, 2020, to February 1st, 2022, were reviewed at our institution. We additionally reviewed the published literature to identify any prior reports and techniques for transvenous retrieval of a migrated catheter. We include a detailed technical report for retrieval via transvenous approach for a migrated catheter.

Results In the last two years, 7 VA shunts have been placed at our institution. Only one case was identified that had a VA shunt disconnection and distal migration into the venous system. This is a possible, yet extremely rare complication that requires interdisciplinary management with neuro-interventional radiology or peripheral interventional radiology. Within this specific case, we obtained right femoral venous access to place a 10 French femoral sheath to advance a 6 French snare for retrieval of the migrated catheter (Figure 1) under C-arm fluoroscopy. The patient then underwent a standard, uncomplicated distal revision. To our knowledge, this is the fifth reported case in which endovascular snaring was utilized for VA shunt retrieval.

Conclusion Disconnection or fracture of ventriculoatrial catheter and migration to the jugular vein, superior vena cava or pulmonary arteries is a rare and potentially catastrophic complication. This case portrays an atypical presentation of VA shunt dysfunction that required an intervention approach with endovascular access through the femoral vein for complete revision, retrieval and replacement. This report may serve as a reference for the vascular neurosurgeon in cases of VA shunt migration into the vascular system.

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