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Five years of Hybrid Operating Theatre for the treatment of complex Neurovascular lesions at a major Sydney Hospital

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Background: This study demonstrates the utility of a hybrid angiogram theatre in the management of complex operative cerebrovascular cases.

Methods: 27 patients over 5 years underwent combined surgical and endovascular procedures in a single theatre session. 13 patients underwent emergency surgery for acute vascular events and 14 patients underwent scheduled elective cases. Of the emergency cases, 3 had ruptured intracranial aneurysms, 3 ruptured AVMs, one a ruptured dural AV fistula, and 6 ECIC bypasses for complex neurological pathologies. The elective cases included 2 AVMs, 2 carotid cutdowns for endovascular treatment of intracranial aneurysm, 9 craniotomies for aneurysm and one EC-IC bypass for aneurysm bypass and trapping. The average age for AVM treatment was 40 years (range 18-60) and 63 (46-79) for aneurysm clipping. Of 11 patients with aneurysms treated operatively, 7 required sub-temporal craniotomies for clipping of large basilar tip aneurysms not amenable for endovascular treatment.

Results: Angiogram post AVM resection demonstrated no residual nidus in all cases. Angiogram post aneurysm clipping (n=11) demonstrated complete obliteration of the aneurysm at time of closure, with no recurrences on delayed imaging out to five years for the earliest cases. 4 of the aneurysm cases underwent multiple on table angiograms with clip adjustment subsequent to these to ensure occlusion of the aneurysm sac and filling of the PCA and SCA vessels despite what was initially felt to be appropriate clip position.

Conclusion: We feel that these cases in particular demonstrate the utility and cost effectiveness of the hybrid theatre in preventing stroke, returns to theatre and post-operative patient morbidity and mortality. The disadvantages of the hybrid theatre include prolonged setup time, longer procedure time with subsequent possibility of infection and venous thrombosis, and a decreased case load.

Speaker Biography

Charles Fish completed a Bachelor of Science in Tasmania, followed by MBBS in Wollongong, Australia. He is currently a third year Neurosurgical Registrar at Royal Prince Alfred, Australia.

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