

23. A 10 year Review of Neuro-Intervention for Acquired Paediatric Neurovascular Conditions

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Purpose

Acquired paediatric vascular abnormalities are a rare subset of paediatric vascular lesions. Given the aggressive, and potentially devastating natural history of these lesions, patients often require detailed investigations, complex multidisciplinary management decisions and high risk interventions.

By using cases from our tertiary referral neurosciences centre, we aim to illustrate the key imaging features of a range of unusual acquired vascular conditions, and the need to maintain a high index of suspicion in the context of apparently normal initial studies- delayed imaging can play an important role in demonstrating the underlying abnormality.

Methods and Materials

Over a 10 year period between 2008 and 2018, we performed 136 diagnostic catheter angiograms in 109 patients under the age of 18, some of whom required repeat vascular studies.

Of these patients, 21 had acquired vascular lesions requiring at least one interventional procedure (eg particle embolisation, thrombectomy or coiling) with curative intent.

Results

We present a variety of acquired vascular pathologies in the paediatric population, in which the role of interventional neuroradiology was integral in both the diagnosis and treatment of often life-threatening conditions.

Cases presented include a traumatic basilar artery dissection with associated thrombus requiring acute thrombectomy, traumatic carotico-cavernous fistula requiring embolisation, coiling of traumatic dissecting aneurysms, treatment of a huge, infected blow-out carotid aneurysm and managing the sequelae of a crossbow injury.

Conclusions

Having an awareness of acquired vascular lesions in the paediatric population allows for prompt and accurate diagnosis, aids appropriate further management, and improves overall patient outcomes.

There are no differences in volume measurement for contusions and pericontusional odema between 3D FLAIR, 2D FLAIR and reformatted 3D FLAIR scans. 2D FLAIR may be considered as a reliable means to image contusions and may confer the added benefit of reduced reporting and imaging times. Further work should focus on differences between sequences in identifying smaller contusions and by anatomic location such as the posterior fossa.