IMAGING CONGENITAL PYRIFORM APERTURE STENOSIS: THE LARGEST CT SERIES TO DATE AND THE POTENTIAL DIAGNOSTIC ROLE OF MRI

Dr S Forbes (1), Mr. K Amonoo-Kuofi (2), Dr C Main (1)
1. Paediatric Radiology Department, University Hospital Southampton, Tremona Road, Southampton, SO16 6YD
2. Ear, Nose and Throat Department, University Hospital Southampton, Tremona Road, Southampton, SO16 6YD

Background:
Congenital nasal pyriform aperture stenosis (CNPAS) is an uncommon but important cause of neonatal airway obstruction. Maxillary/palatal/dental anomalies and other associated midline lesions have been described in 60% of cases [1]. All cases in the limited literature utilise CT where pyriform aperture (PA) width <11mm is considered diagnostic, a measurement derived from a single series with only 6 positive cases [1].

The imaging features of 7 patients with confirmed CNPAS were compared with 50 control subjects (age <24months), identified using the radiology information system. Six patient were imaged with CT and one with MRI.

CT Imaging of CNPAS
1. Mean PA width in patients with CNPAS was 5.4mm versus 14.3mm amongst controls.
2. Average PA width varies by age (Table 1).

Associated Anomalies
Three individuals had abnormal dentition. All had characteristic triangular palates and an inferior palate ridge. Two had non facial associations (Table 1).

MRI Imaging of CNPAS
One patient with confirmed CNPAS was imaged with MRI. This has not previously been reported in the literature.

PA anatomy and palatal morphology is well demonstrated on PD and T2-weighted sequences allowing accurate MRI assessment of PA width.

Conclusions
• Our results closely reflect the limited published literature for CT but we present uniquely their correlates on MRI.
• Bony anatomy can be adequately assessed on MRI, although to date our numbers are limited.
• MRI could be a viable radiation-free alternative to CT for diagnosing CNPAS, and allows for concomitant assessment of intracranial associations, however, a formal comparative study will be required.

References: