Aberrant internal carotid: interest of the CT scan before velopharyngeal surgery in children

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"CT scan is efficient to detect aberrant carotid artery"

CT was performed with a 64-slice multidetector system (SOMATOM AS+, Siemens Healthcare) with a standardized gated or monophasic enhanced procedure (2ml/kg of Xenetix 300) with the following technical parameters: an isotropic helix in an axial slice orientation, tube voltage was adapted to patient weight (80 to 100 Kv), dose modulated protocol, 1mm reconstruction slice thickness.

Objective: To assess the efficiency of the CT scan to detect aberrant internal carotid before velopharyngeal surgery.

Method: It is a retrospective study of the injected CT scan performed on children who required surgery due to their velopharyngeal insufficiency between January 2014 and December 2017.

Result: During this period we did 9 CT scans on 5 girls and 4 boys. The average age at the time of the radiological assessment was 7.8 years old (5-14). No sedation was required. The average time of the CT imaging was 3.5 s. The mean DLP was 65 mGy.cm and the mean CTDI was 3.77 mGy. The cost was 30.78 € per exam. In 7 cases there were no vascular anomaly (6 cleft palate and 1 22q11 microdeletion).

In 2 cases the CT scan revealed a medialization of the internal carotid in the retropharyngeal space. In both cases the patient had a 22q11 syndrome.

Case N°1: Bilateral anomaly

Case N°2: right unilateral anomaly

In our institution, CT scans are more readily available than for MRIs; it’s faster and easier to do for all children. CT scans are efficient to know if we can perform the surgery. Moreover, the cost is lower than an MRI.