

Variational anatomy of the orbitomenigeal foramen

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In addition to the optic canal and the superior orbital fissure, orbits are connected with the cranial cavity via inconstant canals including the orbitomenigeal foramen. Though the orbitomenigeal foramen received considerable attention in the last twenty years, many of its anatomical details relevant for clinical practice still await to be defined.

Almost 1000 skulls and 50 computerized tomographies were examined to determine incidence, number, length and caliber of the orbitomenigeal foramen as well as the topography of their orbital and cranial openings. A retrospective study of angiographies performed on more than 100 children was performed to look for arteries candidate for running through the orbitomenigeal foramen.

Orbitomenigeal foramens were detected in 59.5% of skulls and in 54% of individuals by computerized tomography. Orbits with two to five foramina were found. Canals were classified as M-subtype or A-subtype depending on their cranial opening into the middle or the anterior cranial fossa. Large foramina, with the caliber ranging between 1 and 3 mm, were found in 12.2% of orbitomenigeal foramen-bearing orbits. By computed tomography the average caliber measured 1.2 ± 0.3 mm and 1.5 ± 0.5 mm ($p < 0.005$) at the orbital and cranial openings respectively ($p < 0.005$). Angiographies showed meningolacrimal and meningoophthalmic arteries, meningeal branches of the lacrimal and supraorbital arteries, and some unidentified arteries that could pass through the orbitomenigeal foramina

Orbitomenigeal foramina are a common occurrence. When large they may house important arteries that can be the source of severe bleedings during deep dissection of the lateral wall of the orbit. Orbital surgeons should be aware of their existence.

Keywords

Orbit; orbitomenigeal foramen; angiography; computed tomography.