

## Intraorbital arteries studied in pediatric age by high resolution superselective angiography

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Angiography is a powerful tool to identify intraorbital arteries. However, the incidence by which these vessels can be identified is unknown. Our purpose was to determine such incidence and which angiographic approach is best for the identification of each artery. A retrospective study of 353 angiographic procedures (via ophthalmic artery and/or external carotid artery) carried out on 79 children affected by intraocular retinoblastoma was made to investigate the arterial anatomy in 87 orbits. For each intraorbital artery two parameters were calculated: the angiographic incidence, as the percentage of times a given artery was identified, and the visibility index, as the ratio between the angiographic incidence and the true anatomic incidence. All collaterals of the ophthalmic artery could be spotted. Most of them were identified with a high angiographic incidence; some of them were less easily identified because too thin or because frequently shielded. The visibility index paralleled the angiographic incidence of most arteries. However, the lacrimal and meningolacrimal arteries had a higher visibility index suggesting that their identification was more frequent than the angiographic incidence alone could suggest. Statistical analysis demonstrated that the lacrimal artery and some muscular branches had higher chances to be identified if the angiography of the ophthalmic artery was accompanied by the study of the external carotid system. This work provides an objective measure of how powerful angiography is to identify intraorbital arteries as well as useful references for professionals who need to operate in the orbit.

### Keywords

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Orbit; ophthalmic artery; angiography; angiographic incidence; visibility index.