

Surgery

The complex anatomy of the paraclinoid [internal carotid artery](#) (ICA) makes the surgical management of aneurysms arising from this segment difficult. The key features of successful surgical treatment of these lesions include establishing control of the proximal artery, adequate exposure of the aneurysm neck, and successful obliteration of the aneurysm with minimal manipulation of the [optic nerve](#) ¹⁾.

If a calcified aneurysm is encountered and if the patient has no SAH, the procedure can be terminated or a bypass procedure performed, followed by endovascular balloon occlusion of the ICA ²⁾.

Contralateral approach

Ipsilateral approaches remain the standard technique for clipping paraclinoid aneurysms. Surgeons must however be prepared to deal with bony and neural structures restricting accessibility. The application of a contralateral approach has been proposed claiming that some structures in the region can be better exposed from this side. Yet, only few case series have been published evaluating this approach, and there is a lack of systematic reviews assessing its specific advantages and disadvantages. We performed a structured literature search and identified 19 relevant publications summarizing 138 paraclinoid aneurysms operated via a contralateral approach. Patient's age ranged from 19 to 79 years. Aneurysm size mainly varied between 2 and 10 mm and only three articles reported larger aneurysms. Most aneurysms were located at the origin of the ophthalmic artery, followed by the superior hypophyseal artery and carotid cave. All aneurysm protruded from the medial aspect of the carotid artery. Interestingly, minimal or even no optic nerve mobilization was required during exposure from the contralateral side. Strategies to achieve proximal control of the carotid artery were balloon occlusion and clinoid segment or cervical carotid exposure. Successful aneurysm occlusion was achieved in 135 cases, while 3 ophthalmic aneurysms had to be wrapped only. Complications including visual deterioration, CSF fistula, wound infection, vasospasm, artery dissection, infarction, and anosmia occurred in a low percentage of cases. We conclude that a contralateral approach can be effective and should be considered for clipping carefully selected cases of unruptured aneurysms arising from medial aspects of the above listed vessels ³⁾.

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Batjer HH, Kopitnik TA, Giller CA, Samson DS. Surgery for paraclinoid carotid artery aneurysms. J Neurosurg. 1994;80:650-658.

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Guthikonda M, Diaz FG. Surgical management of paraclinoid carotid aneurysms. Park Ridge, IL: American Association of Neurological Surgeons. 1999:1-12. In: Rengachary S, Wilkins R, eds. Neurosurgical Operative Atlas.

³⁾

Serrano LE, Ayyad A, Archavlis E, Schwandt E, Nimer A, Ringel F, Kantelhardt SR. A literature review concerning contralateral approaches to [paraclinoid internal carotid artery aneurysms](#). Neurosurg Rev. 2018 Dec 6. doi: 10.1007/s10143-018-01063-3. [Epub ahead of print] PubMed PMID: 30519771.

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