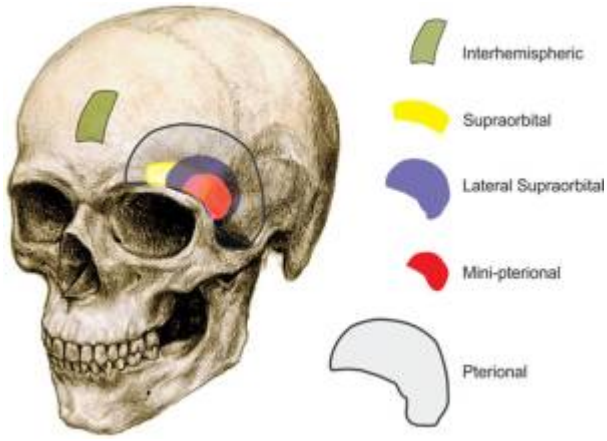
Lateral supraorbital approach indications



The lateral supraorbital approach can provide a safe, rapid, and minimally invasive exposure for parachiasmal meningiomas compared with the pterional approach. Surgeons must consider tumor size, origin, and extent in determining the resectability of the tumor rather than the extent of exposure [1].

Bilateral optic nerve decompression by osteopetrosis via a supraorbital approach may improve or stabilize vision [2].

The lateral supraorbital (LS) and mini-pterional craniotomy have been reported for treating intracranial aneurysms as alternative to the pterional approach.

From an anatomic point of view, both approaches provide similar exposure to the sellar region, suprasellar, and anterior communicating artery areas. The pterional approach provides better exposure of the retrosellar area. The ability to operate in the retrosellar area, is higher with the pterional than with the lateral supraorbital approach [3].

Sellar tumors may be removed via a LSO approach with relatively low morbidity and mortality [4].

The lateral supraorbital approach provides adequate exposure of the lesion and allows safe neurosurgical manipulation, with much shorter operation time and much smaller craniotomy, thereby decreasing surgical morbidity. Thus, the lateral supraorbital approach for clipping of unruptured intracranial aneurysm could be a good alternative to the classic pterional approach [5].

Sellar tumors can be removed via the LSO approach with relatively low morbidity and mortality. Surgical results with this fast and simple approach are similar to those obtained with more extensive, complex, and time-consuming approaches [6].

The lateral supraorbital approach is a minimally invasive approach that provides excellent exposure of the superior, lateral and medial orbit as well as the orbital apex [7].

References

1)
Park HH, Sung KS, Moon JH, Kim EH, Kim SH, Lee KS, Hong CK, Chang JH. Lateral supraorbital versus pterional approach for parachiasmal meningiomas: surgical indications and esthetic benefits. Neurosurg Rev. 2019 Aug 3. doi: 10.1007/s10143-019-01147-8. [Epub ahead of print] PubMed PMID: 31377941.
2)
Al-Mefty O, Fox JL, Al-Rodhan N, et al. Optic Nerve Decompression in Osteopetrosis. J Neurosurg. 1988; 68:80–84
3)
Salma A, Alkandari A, Sammet S, Ammirati M. Lateral supraorbital approach vs pterional approach: an anatomic qualitative and quantitative evaluation. Neurosurgery. 2011 Jun;68(2 Suppl Operative):364-72; discussion 371-2. doi: 10.1227/NEU.0b013e318211721f. PubMed PMID: 21336206.
4)
Yin Y, Chen G, Wang Z. [Clinical evaluations of lateral supraorbital microsurgical approach for sellar tumors]. Zhonghua Yi Xue Za Zhi. 2014 Jul 1;94(25):1956-9. Chinese. PubMed PMID: 25253009.
5)
Cha KC, Hong SC, Kim JS. Comparison between Lateral Supraorbital Approach and Pterional Approach in the Surgical Treatment of Unruptured Intracranial Aneurysms. J Korean Neurosurg Soc. 2012 Jun;51(6):334-7. doi: 10.3340/jkns.2012.51.6.334. Epub 2012 Jun 30. PubMed PMID: 22949961; PubMed Central PMCID: PMC3424172.
6)
Chen G, Wang Z, Zhou D. Lateral supraorbital approach applied to sellar tumors in 23 consecutive patients: the Suzhou experience from China. World J Surg Oncol. 2013 Feb 21;11:41. doi: 10.1186/1477-7819-11-41. PubMed PMID: 23432938; PubMed Central PMCID: PMC3631129.
7)
Adawi MM, Abdelbaky AM. Validity of The Lateral Supraorbital Approach as a Minimally Invasive Corridor for Orbital Lesions. World Neurosurg. 2015 May 6. pii: S1878-8750(15)00491-X. doi: 10.1016/j.wneu.2015.04.058. [Epub ahead of print] PubMed PMID: 25957722.