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Minimally invasive transpalpebral “eyelid” approach to the anterior cranial base: experience in forty eight cases

The concept of minimally invasive approaches in skull base surgery has been evolving during the past two decades. Supra orbital frontal mini-craniotomy with or without involving the orbital rim is one of the most commonly used minimally invasive approaches for the anterior cranial fossa lesions.

We describe our experience with the transpalpebral “eyelid” incision which utilizes the natural upper eyelid crease to obtain access to the anterior cranial fossa through a subfrontal-supraorbital corridor. This approach minimizes the cosmetic problems with the supraciliary or transciliary incisions. The eyelid approach reduce the risk of injury to the frontalis branch of the facial nerve.

Extracranial drilling of the greater sphenoid wing exposes the frontal dura, temporal dura, and peri-orbita “spheno-orbital key-hole”. One piece fronto-orbital craniotomy is performed in all cases with a bone flap about 2.5 cm in height. After the dura is opened a panoramic view of the anterior cranial fossa floor is achieved, extending from the contralateral to the ipsilateral oculomotor nerve.

We are describing the approach and technique in a step-by-step fashion, and discuss the results of our forty eight cases (33 anterior circulation aneurysms, and 15 neoplastic lesions) as well as the advantages of the transpalpebral approach. This is the largest series in the literature utilizing this unique approach with excellent cosmetic outcome in 47/48 patients.

The transpalpebral approach provides minimally invasive dissection in the natural anatomical planes. It allows preservation of the frontalis muscle, avoids injury to VII nerve branches, and results in an excellent cosmetic outcome.

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