

Supraorbital keyhole surgery for optic nerve decompression and dura repair

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摘要

Abstract

Supraorbital keyhole surgery is a limited surgical procedure with reduced traumatic manipulation of tissue and entailing little time in the opening and closing of wounds. We utilized the approach to treat head injury patients complicated with optic nerve compression and cerebrospinal fluid leakage (CSF). Eleven cases of basal skull fracture complicated with either optic nerve compression and/or CSF leakage were surgically treated at our department from February 1995 to June 1999. Six cases had primary optic nerve compression, four had CSF leakage and one case involved both injuries. Supraorbital craniotomy was carried out using a keyhole-sized burr hole plus a small craniotomy. The size of craniotomy approximated $2 \times 3 \text{ cm}^2$. The optic nerve was decompressed via removal of the optic canal roof and anterior clinoid process with high-speed drills. The defect of dura was repaired with two pieces of tensa fascia lata that were attached on both sides of the torn dural defect with tissue glue. Seven cases with optic nerve injury included five cases of total blindness and two cases of light perception before operation. Vision improved in four cases. The CSF leakage was stopped successfully in all four cases without complication. As optic nerve compression and CSF leakage are skull base lesions, the supraorbital keyhole surgery constitutes a suitable approach. The supraorbital keyhole surgery allows for an anterior approach to the skull base. This approach also allows the treatment of both CSF leakage and optic nerve compression. Our results indicate that supraorbital keyhole operation is a safe and effective method for preserving or improving vision and attenuating CSF leakage following injury