Olfaction After Frontobasal Trauma With and Without Surgery

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Introduction

Cerebrospinal fluid (CSF) rhinorrhea, a certain sign of an open frontobasal fracture, represents an absolute indication for surgical repair (Boenninghaus, 1960; Dietz, 1970; Escher, 1973; Kley, 1966; Kuhlendahl, 1966). To avoid an infection of the endocranium the fistula of the dura has to be closed. In addition, the paranasal sinuses have to be cleared up to prevent a rhinogen secondary infection (Pirsig, 1975; Voss, 1936). In principle, two operative techniques may be used for this purpose: The intracranial intradural approach to the base of the skull, used by the neurosurgeon (Fig. 1), and the extracranial rhinosurgical approach through the upper paranasal sinuses (Fig. 2). The intracranial approach has not only the disadvantage of being a major surgical procedure (Burian, 1972), but also does not permit the observation of the CSF-flow into the nose nor paranasal sinuses, particularly in the case of minute fistulae in the sphenoidal area (Kuhlendahl, 1966). This approach, in addition, often entails the risk of damaging the olfactory nerve fibres (Thumfart, 1977). In order to
evaluate the protection of smell by the rhinosurgical technique of frontobasal reconstruction, two groups of patients were compared with regard to results of their olfactory examinations: One group before and after rhinosurgical closure of dural defects, and a second group after frontobasal skull trauma without any surgery.

**Methods and Material**

The osteoplastic-reconstructive technique of the rhinosurgeon leads from a Killian incision in a direct and short way to the skull base behind the frontal sinus and to the roof of the ethmoidal and sphenoidal spaces. If possible, the frontal sinus is re-