Ethmoidal tumor

A series of ethmoidal tumors was resected by an entirely extracranial approach through a lateral rhinotomy incision, with partial maxillectomy and removal of the cribriform plate and dura mater from below.

Thirty-four consecutive patients (32 male, 2 female; mean age 64 years, range 45-78) with malignant tumors of the ethmoid sinus were operated by this technique between July 1998 and February 2002. All had complete tumor resection, including the cribriform plate and the dura mater. Excision was performed en bloc 23 times (68%). Although cerebral involvement was encountered in four cases (T4 IC), this technique was adequate for tumor resection, together with corticectomy when necessary. The method used for tumor resection and rebuilding of the anterior skull base is described in detail.

There were no immediate postoperative deaths. One patient developed pneumococcal meningitis with cerebrospinal fluid leakage as a result of a technical error and required further surgery. Four patients presented a confusion syndrome that regressed during the hospital stay, 2 complained of transient diplopia, and 4 had hematoma of the abdominal wall. Mean follow-up of 10.4 months (1-41 months) is still too short to reach definitive conclusions about oncologic results.

This approach is particularly suitable for removal of tumors in contact with or invading the cribriform plate. Tumor resection is as extensive as with the traditional mixed approach, but does not require the frontal lobes to be drawn aside [1)].

From June 1982 to June 1992, 144 ethmoido-sphenoido-orbital tumors have been referred to the neurosurgical department of Ste Anne Hospital. One hundred five of them were malignant lesions, among which 83 were included into our therapeutic protocol (1) neo-adjuvant chemotherapy (CDDP + 5-FU), (2) combined surgical procedure (subfrontal and transfacial), (3) postoperative radiotherapy. Fifty nine percent of the patients had no response to chemotherapy; 19% had a partial response (reduction of the tumoral volume > 50% and < 100%), 22% had a complete response. One patient had an immediate and transient postoperative rhinorrhea responsible for meningitis (acinetobacter) that was cured after a 3-day treatment. Four patients had postoperative meningitis without any cerebrospinal fluid leakage; they were also cured. Five patients had a local suppuration that was treated by subcutaneous drainage (n = 1) or the removal of the cranial basis graft (n = 4). Oncologic results are presented for only adenocarcinomas (n = 63) because they represent the only population of this series large enough to assure significant statistical figures. The global actuarial survival rate was 53% at 3 years and 42.5% at 5 years. The 5-year actuarial survival rate was 80% for T1 tumors, 60% for T2, 40% for T3, and 25% for T4. Patients with an intracranial extension had a 3-year survival rate of 19%; none survived after 4-year follow-up. Neo-adjuvant chemotherapy seemed to influence the survival: 100% survival rate at 5 and 10 years for the complete responders. We discuss the opportunity of intraorbital exenteration, the indications, and the limits of combined surgery. We emphasize the importance of neo-adjuvant chemotherapy and of combined surgical procedures, even when the patients are complete responders to chemotherapy: complete responders who had only a transfacial approach have a 5-year actuarial survival rate of 80% (instead of 100% when a combined procedure was performed). Those who were not operated primarily recurred within 3 years and then had to be operated. We propose to follow such a combined surgery for all large ethmoidal cancers (T3 and T4) and for small tumors (T1 and T2) developed superiorly and posteriorly. Anterior T1 and T2 tumors should be operated through a single transfacial route [2)].

1)
Faure A, Ferron C, Khalfallah M, Toquet J, Hamel O, Raoul S, Beauvillain de Montreuil C, Robert R. Removal of ethmoidal malignant tumors by the isolated paralateronasal approach with resection of the cribriform plate and the dura mater. Surg Neurol. 2003 Nov;60(5):407-21; discussion 421-2. PubMed PMID: 14572962.
2)
Roux FX, Brasnu D, Devaux B, Chabardes E, Schwaab G, Laccourreye O, Menard M, Janot F, Nguyen S, Bertrand J, et al. Ethmoid sinus carcinomas: results and prognosis after neoadjuvant chemotherapy and combined surgery–a 10-year experience. Surg Neurol. 1994 Aug;42(2):98-104. PubMed PMID: 8091301.