Anterior Skull Base Defect

Successful resection of complex tumors involving the skull base (SB) depends on the ability to reconstruct the resulting defects.

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Case series

2018

Data from patients who underwent endoscopic endonasal ASB reconstruction in a single Institution between 1998 and 2017 were collected. Patients were stratified according to selected risk factors: sex, age, previous surgery, disease treated (cerebro-spinal fluid leaks, benign tumors, malignant tumors), single or multiple defects, defect dimension (<1cm2, 1-2cm2, 2-6 cm2, >6 cm2) and site (olfactory cleft, ethmoidal roof, planum sphenoidalis, posterior wall of frontal sinus), reconstruction technique (overlay graft, multilayer grafts, pedicled flap) and materials used, post-operative radiotherapy, and year of surgery. Statistical significance was assessed using Fisher's exact tests. A univariate logistic regression was implemented to analyze the association between risk factors and failures.

513 cases met the inclusion criteria with a median follow-up of 96 months (range,12-257). There was a 95%(487/513) success rate for initial repair, with 100% for secondary closure after revision surgery. Failures were not significantly related to sex(p=.54), reconstruction technique(p=.28), location of the defect(p=.65), dimension(p=.69), disease(p=.83), and post-operative radiotherapy(p=.83). The year of surgery, considered as a continuous variable, was associated with a statistically significant reduction of failures (Odd-Ratio= 0.89,p.005).

Endoscopic surgery is safe and effective for ASB reconstruction. Refinements in surgical technique and increasing experience have contributed to improving success rates over the years ¹⁾.

2013

From 1995 to 2010 a retrospective review of cases was undertaken. Demographics, histology, surgical management, complications, locoregional control, and survival were analyzed. Results We performed 62 flaps in 57 patients. There was a preponderance of sinonasal malignancies (45%), and most lesions involved the anterior SB (81%). A total of 94% of patients underwent radiotherapy. Reconstruction was undertaken mainly with anterolateral thigh (37%) or radial forearm (34%) flaps. Complications occurred in 17% of patients, and the flap's success rate was 94%.

Free flaps are versatile and highly reliable for reconstructing defects resulting from resections of the SB. They should be considered for SB reconstruction of large three-dimensional defects as well as

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defects involving an irradiated field. Successful reconstruction of the SB can be performed using a small number of highly dependable flaps²⁾.

Holzer et al. report the first case of an intracranial and intradural nasal polyposis occurring in a close topographical relation to a previous, iatrogenic anterior skull base defect. The tumour was resected and the skull base defect was closed transnasally by an interdisciplinary team. The histopathological report confirmed recurrent polyposis³⁾.

1)

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