

Facial Translocation for Extensive Benign Tumors of the Paranasal Sinus and Skull Base

Claudio R. Cernea, MD²; Fernando L. Dias, MD¹; Fernando Walder, MD³; Fernando D. Leonhardt, MD³; Roberto de A. Lima, MD¹; Terence Farias, MD¹; Ullyanov B.T. Mendonça, MD¹; Lenine G. Brandão, MD²; Nivaldo Alonso, MD²; Marcos Q.T. Gomes, MD²

From the Departments of Head and Neck Surgery of the Brazilian National Cancer Institute, University of Sao Paulo, and Federal University of Sao Paulo, Brazil.

ABSTRACT

Objectives: To evaluate the facial translocation (FT) approach in the management of extensive benign tumors of the paranasal sinus and skull base. **Methods:** Multi-institutional retrospective analysis of all patients who underwent craniofacial operations for skull base tumors from 1981 to 2008. Data were collected on demographic distribution, tumor location, histology, details of operation, complications and outcome, focusing choice of facial approach. **Results:** There were 18 patients (male:66.7%; median age: 31.4 years (9 to 64 years)). Tumor locations were the pterygopalatine fossa (38.9%), ethmoid sinus (38.9%), nasal cavity (2.2%) and nasopharynx (22.2%). There was intracranial invasion in 33.4% of patients. Histologic types were juvenile nasofibroma in 44.4%, inverted papilloma in 16.7%, ameloblastoma in 11.1%, and other in 27.8%. 22% of patients underwent a combined open craniofacial approach. Complications occurred in 27.8% of cases. Only one (5.5%) patient had a major complication (intraoperative severe bleeding). One patient (5.5%) recurred at the primary site, and underwent successfully salvaged. Ultimately, all patients were free of disease (median follow-up:25 months) **Conclusion:** Despite the complexity of this operation, FT was a viable approach for this series of aggressive benign tumors of the skull base, with acceptable morbidity and no mortality.

INTRODUCTION

Facial translocation (FT) is a very useful technique for access to extensive skull base tumors. It was described by Janecka et al.¹. The basic principle of this procedure is to laterally mobilize the whole maxilla, pedicled only on the adjacent soft tissues, in order to widely expose the central and lateral skull base. Several authors have reported their experience with this method, usually indicated for advanced or recurrent malignant neoplasms^{2,3}. However, very few series have been reported in the literature dealing exclusively with very advanced benign skull base tumors resected through FT⁴.

The present paper is a multi-institutional review of a large series of skull base tumors, focusing on very advanced benign lesions which were resected with this surgical approach, with special attention to morbidity.

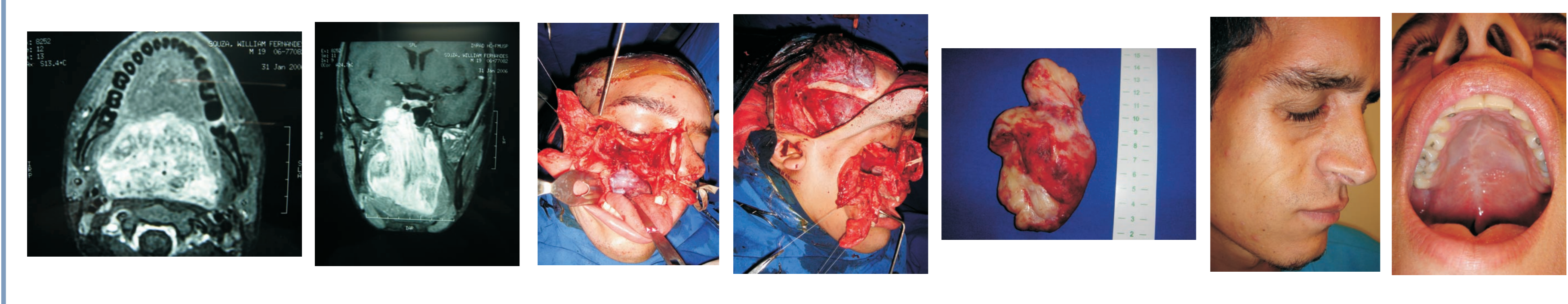


Figure 1. 20yo male patient with gigantic nasoangiofibroma, with mechanical obstruction of upper aerodigestive tract

PATIENTS AND METHODS

The design of this study was a multi-institutional retrospective analysis of all patients who underwent craniofacial operations for skull base tumors from 1981 to 2008 in three tertiary-care Institutions in Brazil (Departments of Head and Neck Surgery of the Brazilian National Cancer Institute, University of Sao Paulo, and Federal University of Sao Paulo). Data were collected on demographic distribution, tumor location, histology, details of operation, complications and outcome. Special attention was devoted to the choice of the surgical approach. All patients with benign skull base tumors submitted to FT with enough chart information were selected and analyzed.

RESULTS

From 1981 to 2008, 549 patients with major skull base lesion were identified in the three Institutions. Eighteen cases (3.3%) had benign tumors excised through FT. Most were male (66.7%), with a median age of 31.4 year-old (9 to 64 year-old). Tumor locations were the pterygopalatine fossa (38.9%), ethmoid sinus (38.9%), nasal cavity (2.2%) and nasopharynx (22.2%); 72.0% of the neoplasms involved more than one location. There was intracranial invasion in 33.4% of patients. Histologic types were juvenile nasofibroma in 44.4%, inverted papilloma in 16.7%, ameloblastoma in 11.1%, and other in 27.8%. 22.2% of the patients underwent a combined open craniofacial approach. Some form of reconstruction was employed in 44.4% of the defects. Complications occurred in 27.8% of cases; the most frequent was palatal fistula (22.2%). Only one (5.5%) patient had a major complication (intraoperative severe bleeding). One patient (5.5%) recurred at the primary site, and underwent successfully salvaged. Ultimately, all patients were free of disease (median follow-up: 25 months). Representative cases are demonstrated on Figures 1 to 3.



Figure 2. 37yo female patient with hemangiopericytoma. Nasal-maxillo translocation

DISCUSSION

Recently, there has been a trend towards less invasive skull base procedures, usually with endoscopic or even robotic techniques^{5,6}. However, some series in the literature emphasize that, in some areas, skull base surgery is performed for very advanced and extensive tumors, both benign and malignant. In these instances, the magnitude of the lesions preclude any attempt to perform less invasive approaches. In fact, we have published our experience with atypical craniofacial incisions that are the only option to adequately access these extensive tumors⁷.

Some authors have reported their experience with FT, usually indicated for extensive malignant skull base neoplasms^{2,3}. However, very few series have been reported in the literature dealing exclusively with very advanced benign skull base tumors resected through FT⁴, usually including very limited experience. To our knowledge, this is one of the largest series of FT indicated only for extensive benign tumors. These 18 patients represent only 3.3% of the total number of major skull base procedures performed within the study time frame in the 3 centers. It is noteworthy that, in spite of the relatively high complication rate (27.8%), no morbidity occurred and no local recurrences were found.

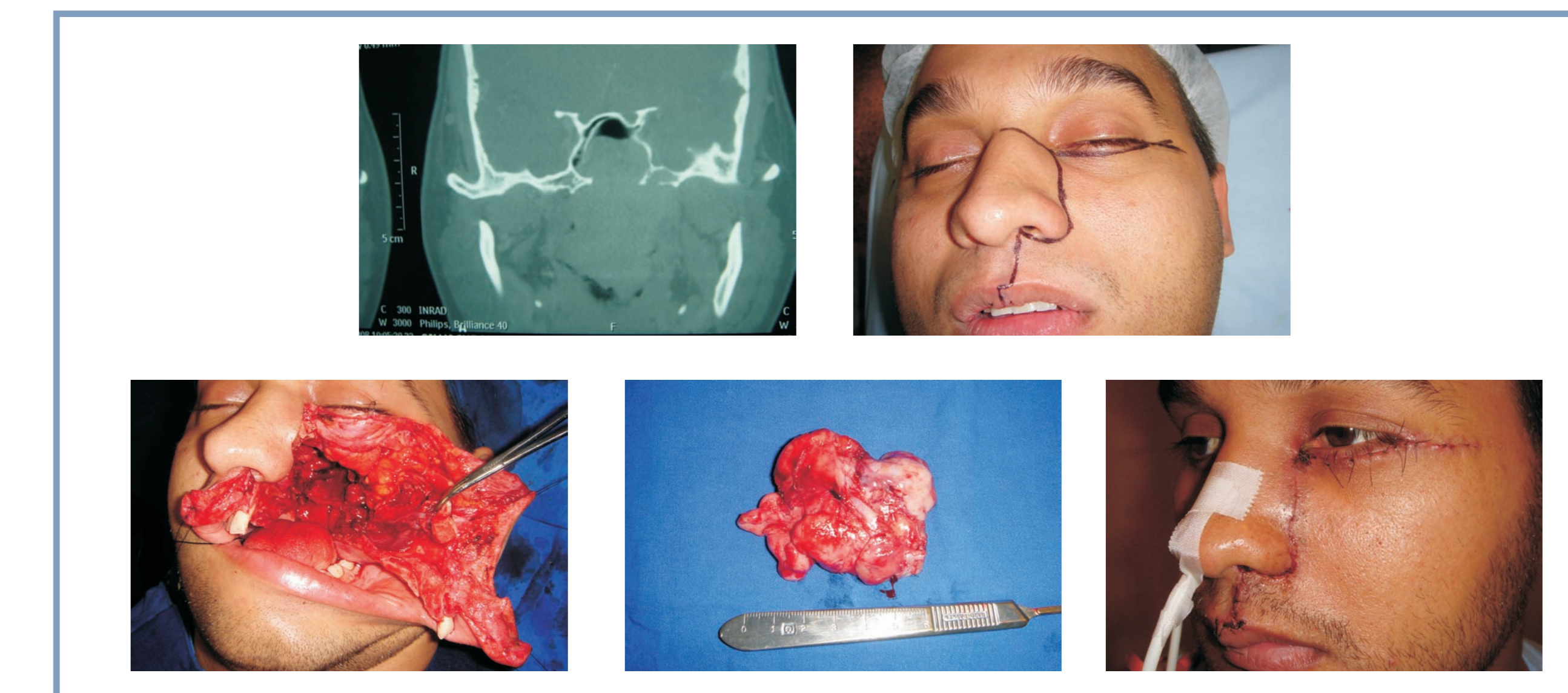


Figure 3. 22yo male patient with large nasoangiofibroma

CONCLUSIONS

Despite the complexity of this operation, FT was a viable approach for this series of aggressive benign tumors of the skull base, with acceptable morbidity and no mortality.

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Contact

Claudio R. Cernea, MD
Department of Head and Neck Surgery
University of Sao Paulo Medical School
Email: cerneamd@uol.com.br
Phone: 55-11-32850058

