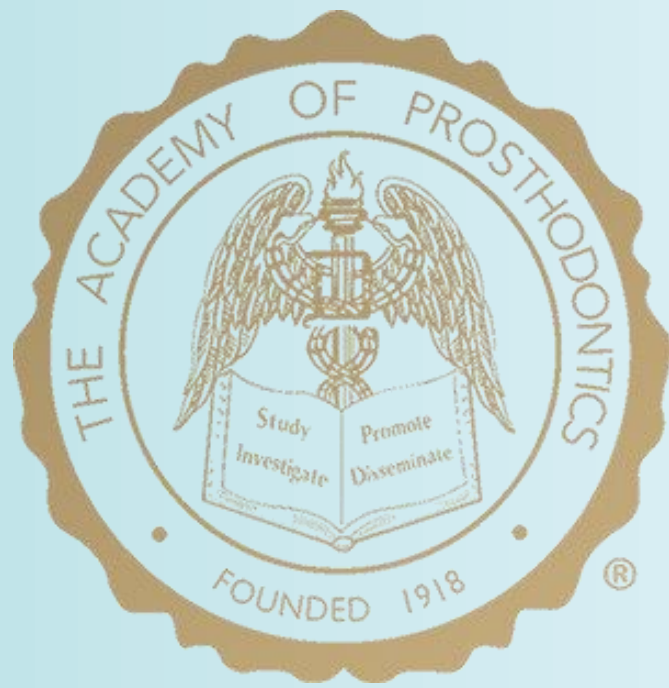




Multi-stage Management of Maxillary Reconstruction Across Growth

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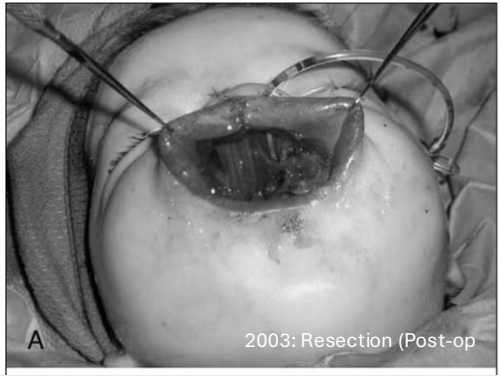
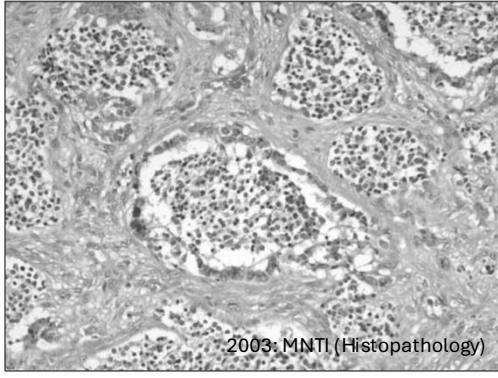
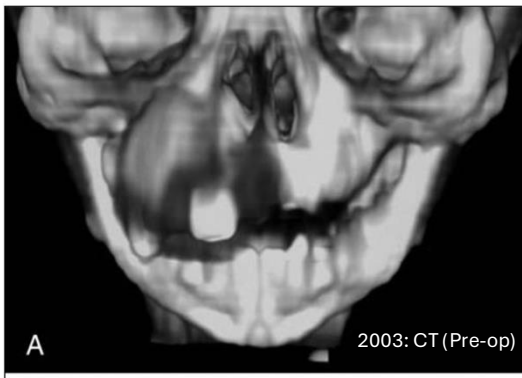


Overview/ Abstract: This case report describes a 23-year multidisciplinary rehabilitation of a patient following maxillary tumor resection during childhood, ultimately culminating in implant-supported prosthetic rehabilitation in a complex grafted maxilla. Throughout growth and development, the patient experienced maxillary deficiency, altered midfacial growth, occlusal instability, facial asymmetry, and psychosocial challenges related to missing dentition and appearance.

2 mo.



- CC: Rapidly growing Melanotic Neuroectodermal Tumor of Infancy (MNTI) with submucous cleft → Facial asymmetry + vital structures
- Resection = Modified Weber- Ferguson approach with nasal floor, septum and 2/3 alveolar ridge followed by nasal stent and palatal appliance
- Post-operative palatal fistula → mild velopharyngeal insufficiency



Tumor Resection

3 – 5 y.



- Follow-up every 3 months for 1st year
- MRI every year
- 3-year follow-up
- No signs of recurrence
- Published in 2008

S Hamilton, D MacRae, S Agrawal, D Matic. Melanotic neuroectodermal tumour of infancy. Can J Plast Surg 2008;16(1):41-44.

Melanotic neuroectodermal tumour of infancy is an extremely rare neoplasm arising in newborns and young children, typically involving the face or cranium. A case arising from the maxilla, requiring extensive resection with a near-total maxillectomy, is presented. A thorough review of the literature on this unusual tumour is provided, with emphasis on prognostic factors and appropriate treatment.

Key Words: Maxillectomy; Melanotic; MNTI; Pediatric; Pigmented

Tumeur mélanotique neuroectodermique de l'enfance

La tumeur mélanotique neuroectodermique de l'enfance, qui touche surtout la face et le crâne, est extrêmement rare chez les nouveau-nés et les jeunes enfants. Il sera question, dans l'article, d'un cas de tumeur du maxillaire, qui a nécessité une résection étendue, voire une maxillectomie quasi totale. Un examen exhaustif de la documentation sur ce type peu fréquent de tumeur, plus particulièrement sur les facteurs pronostiques et le traitement approprié, complètera l'étude du sujet.

ORIGINAL ARTICLE

Melanotic neuroectodermal tumour of infancy

Scott Hamilton MD¹, Duncan MacRae MD¹, Sumit Agrawal MD², Damir Matic MD³



Follow-up

7 - 8 y.

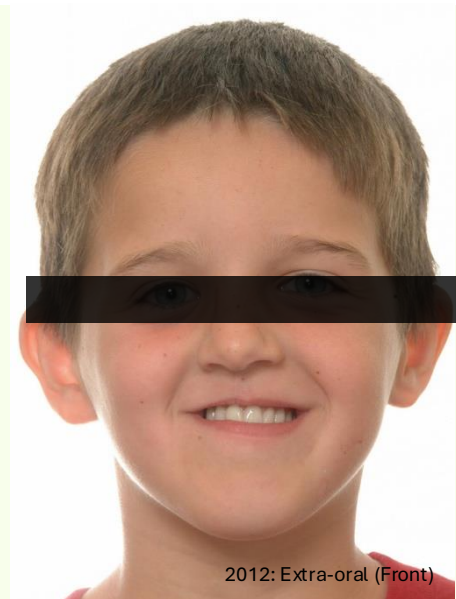


- Progressive Mx hypoplasia and malocclusion + altered midfacial development
- First dental consult with team at HBKRH
- Pediatric dental care
- Preliminary consult with OMFS, Orthodontics and Speech Pathologist
- Counselling and psycho-social management



First Dental Consult

9 – 11 y.



- Transitional overdenture #1
- Intaglio surface surveyed for a favorable path of insertion
- Space maintenance
- Periodic relines to accommodate growth
- Exaggeration of Curve of Spee → frequent occlusal adjustments made



Transitional Denture #1

13 – 14 y.



- Overdenture #2 with metal occlusal stops
- Growth spurt
- Pre-surgical orthodontic therapy with TADs



Denture #2 | Growth | Ortho

17 - 18 y.

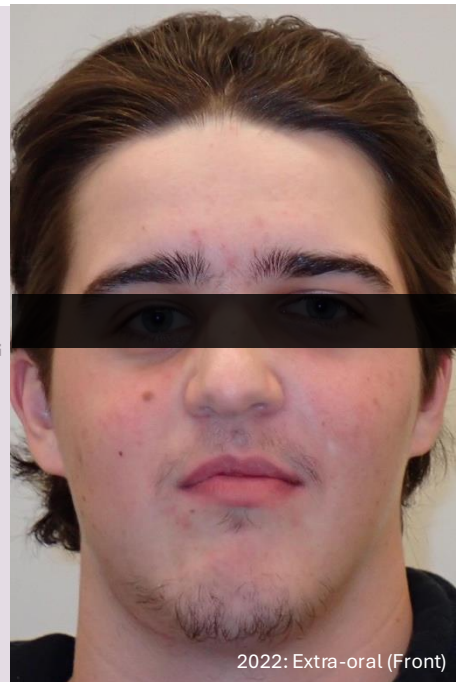


- Skeletal maturity confirmed with annual cephalograms
- Overdenture #3: Re-establish vertical and horizontal dimension + radiographic guide for prosthetically driven implant plan
- Le Forte 3 + Free Fibular Flap (FFF) reconstruction, microvascular anastomosis, rigid reconstruction plate fixation

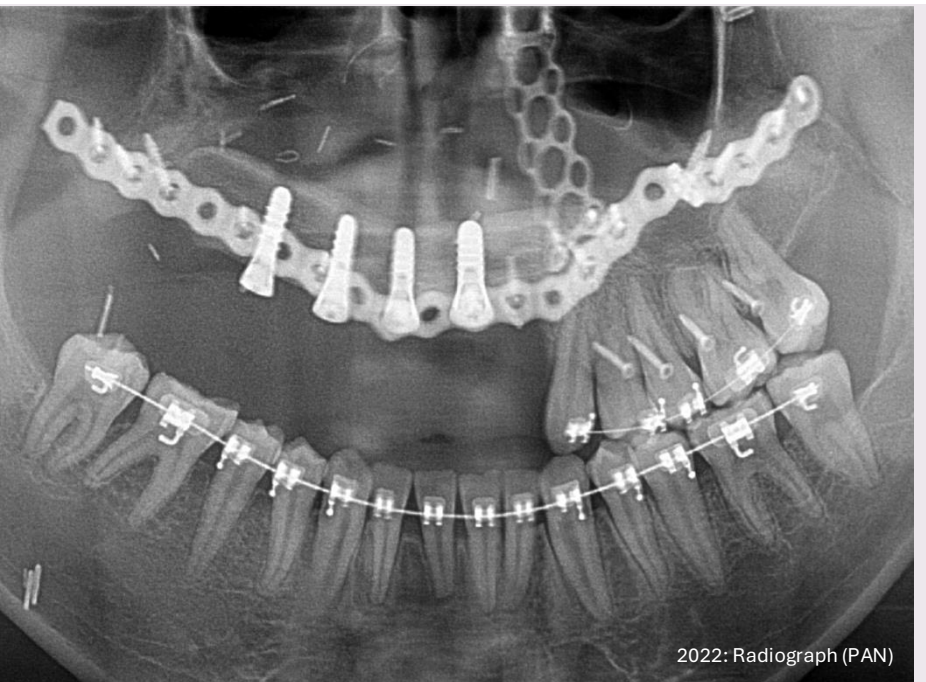
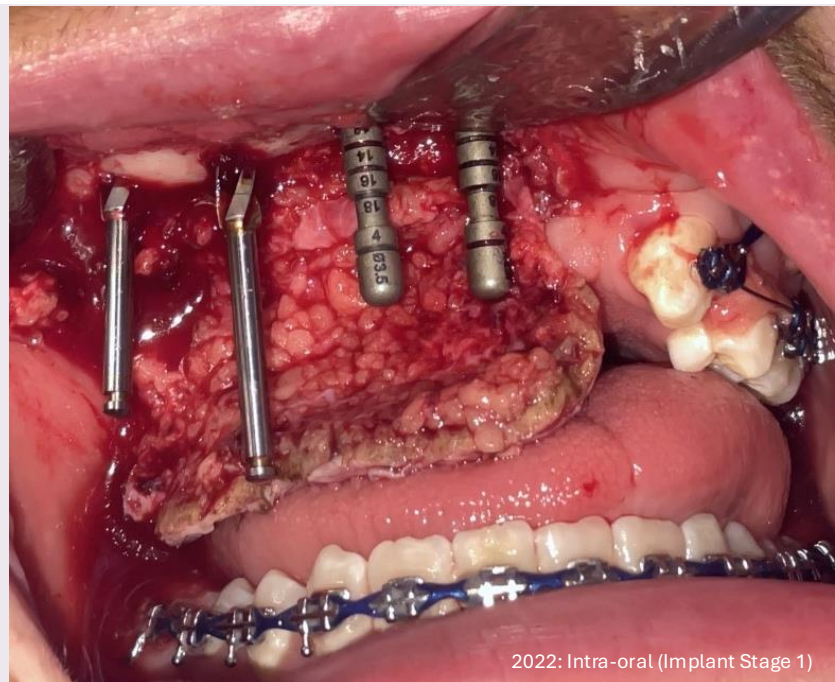


Denture #3 | Skeletal Maturity | FFP

20– 21 y.

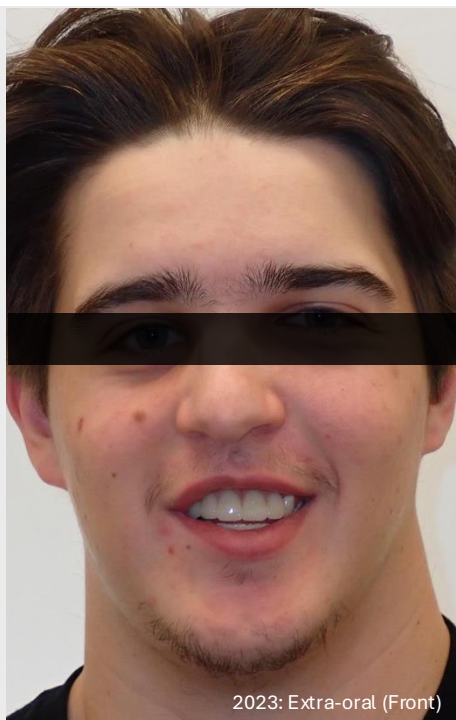


- Debulking: Excision of adipose tissue to thin the free flap + vestibuloplasty
- Prosthetically driven digital implant plan → 4x Straumann TL 4.1 x 10 mm implants with primary stability
- Thick fibular graft + inadequate KT → suboptimal emergence profiles

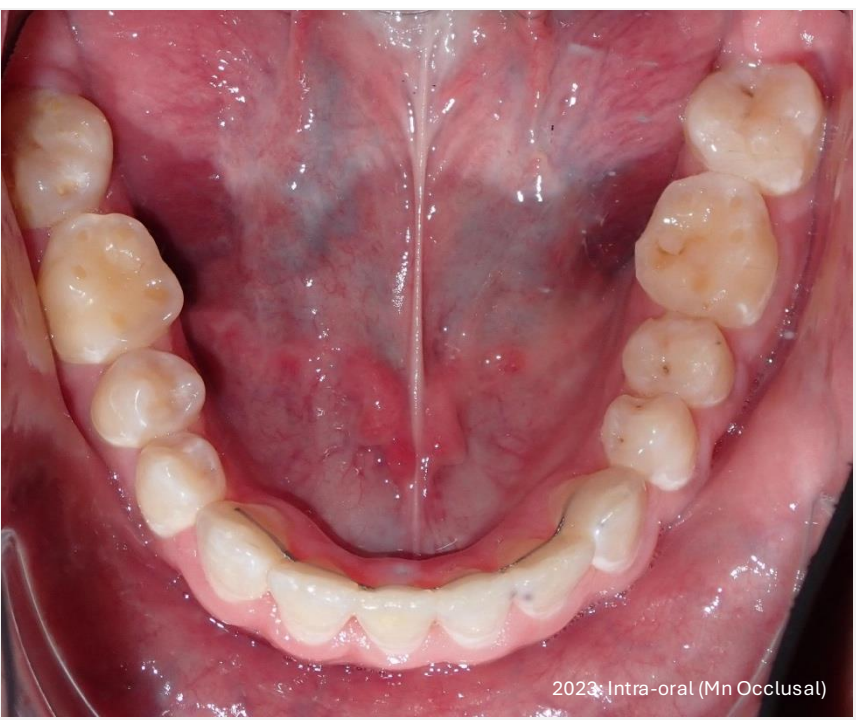


Dental Implants

21 – 22 y.



- Orthodontics complete
- Implant at #15 in prosthetically non-restorable position → buried
- FP3 screw retained, segmented PFZ on non engaging Ti-Base X-X-#13-X-#11 | #21- X
- Optimization of pontics and tissue for hygiene



Implant Supported Prosthesis

22 – 23 y.



- Soft, reactive fibromatous growth around implants #13, #11 and #21: Gingivectomy → recurrence
 - Microbial testing → Biofilm DNA (OraVital™) → *F. nucleatum* + red complex
- Management Strategy:**
- Targeted local anti-microbial formulations to minimize pathogenic bacterial load
 - Resection + silver nitrate cauterization



Complication Management

Summary: This case highlights the biological, mechanical, and psychosocial complexities associated with implant rehabilitation in growing patients with reconstructed maxillae and demonstrates the importance of long-term multidisciplinary planning and adaptive treatment strategies.

Acknowledgements: Dr. Marco Caminiti (OMFS), Dr. Sina Hashemi (OMFS), Dr. David Goldstein (ENT), Dr. James Noble (Orthodontics) at Holland Bloorview Kids Rehabilitation Hospital (HBKRH), Toronto; supported by The Ontario Cleft Lip and Palate and Craniofacial Dental Program (OCLP/CP) | Dr. Hendrik Doering (Periodontics) at City Square Dental Group, Toronto

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