Dental Rehabilitation and Rumination Syndrome: A Case Study

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INTRODUCTION

Rumination syndrome is the repeated non-purposeful, effortless regurgitation of stomach contents after recently ingesting food. The material is either re-chewed and swallowed or expectorated. Until recently, the syndrome's prevalence has gone widely underappreciated, often being misdiagnosed as gastroesophageal reflux disease or bulimia nervosa. Counter to widespread opinion, rumination syndrome is not exclusive to those with cognitive disabilities or children but can afflict patients of any age and health status. Little research has been conducted on the long-term effects of rumination syndrome on the dentition and dental restorative material. Restoring and maintaining the health of the oral cavity poses a challenge when treating patients with this condition, especially when rumination syndrome is a component of a patient's complex medical history. In this case report, the dental rehabilitation, and its obstacles, of a patient in his early twenties with rumination syndrome, Phelan-McDermid syndrome (PMS), and severe protein calorie malnutrition is examined.

CASE REPORT

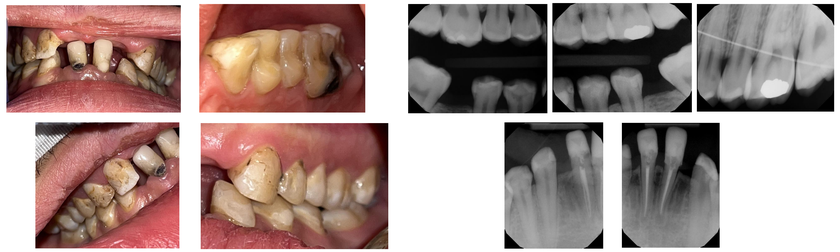
A 21 year old male presented to the University Hospitals Rainbow Babies and Children's Hospital in May 2023 for his yearly recall visit under general anesthesia. Patient has an extensive past medical history consisting of rumination syndrome, Phelan-McDermid syndrome, anxiety, Autism, GERD, IgA Deficiency, eosinophilic esophagitis, transient tic disorder, joint pain, and severe protein calorie malnutrition, putting him at a weight below 40 kg. Patient's medications include polyethylene glycol, lansoprazole, and vitamin D3 supplements. He is allergic to gluten, lactose, garlic, and penicillin. His diet consists of pureed foods by mouth; patient's family refuses G-Tube placement. We have seen patient for previous oral rehabilitation under anesthesia, starting in 2014. Some years, we would see patient multiple times. Each session, the dental treatment needs of the patient become increasingly extensive, beginning with few composites, then eventually requiring replacement of these fillings, root canal treatment, and extraction of multiple teeth (see *Summary of Treatment Rendered*). The patient's guardian was concerned about preventing more extractions in the future.

During the initial clinical and radiographic examination in May 2023, the findings included generalized recurrent decay, generalized chronic periodontitis, moderate generalized erosion, and impacted third molars.

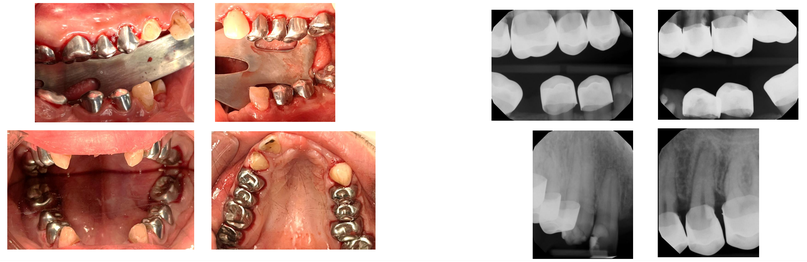
It was proposed to the guardian that as many teeth as possible should be treated with full coverage restorations in a multi-session surgical process, in an attempt to save the remaining dentition. In addition to May 2023, patient was scheduled for two other surgical dates of June 2023 and December 2023.

CLINICAL AND RADIOGRAPHIC PRESENTATION

- **Initial Presentation May 2023**



- **Final Presentation December 2023**



SUMMARY OF TREATMENT RENDERED

Surgery Date	Treatment Completed
January 2014	Sealants; Composites 3,5,12,14,19
August 2015	Composites 6,7,11,14,22,24,30
October 2016	Composites 3,4,5,6,7,26,27,28,29,30,31
February 2017	Root canal therapy 23,24,25,26; Composites 10,11,13,18,20; Resin Crowns 23,24,25,26
February 2018	Composites 8,10,22,27,29,30
June 2018	Extraction 10
December 2018	Composites 19, 30
January 2020	Composites 9, 11, 22; Resin Crowns 23,24,25,26; Extraction 19, 30
June 2020	Composites 6, 7, 11, 15, 18, 21, 22, 24, 25, 26, 27, 31; Extraction 8,9,23,26
May 2023	Stainless Steel Crown 2,3,4,5,28,29,31
June 2023	Stainless Steel Crowns 12,13,14,15,18,20,21; Extraction 24,25
December 2023	Resin Crown 11; Extraction 6,7,13; Third molar removal

DISCUSSION

Rumination syndrome occurs more frequently in patients with Phelan-McDermid syndrome (PMS) than the general population. PMS is caused by *SHANK3* haploinsufficiency and characterized by intellectual disability, autism, hypotonia, epilepsy, gastrointestinal disorders, congenital heart defects, and urogenital defects. Dental manifestations include bruxism, erosion, decay, periodontal disease, oral and tooth trauma, delayed eruption, and malocclusion.

Over the period of eight months, three sessions of oral rehabilitation under general anesthesia were completed. At each surgical session, various challenges were encountered. The posterior teeth were treated first by placing stainless steel crowns (SCCs). SSCs were chosen due to literature demonstrating that they are more reliable long-term in special needs patients over time. Unfortunately, at the second session a month later, patient fractured the crowns of #24 and #25 to the gum line, necessitating these to be extracted. At the third session, anterior resin crowns were completed. During this session, it was noted that the bone levels on the mesial and distal of #13 decreased, and external resorption was noted along with an increase in the periodontal ligament space. #13 was extracted due to this, along with #6 and #7 due to extensive recurrent caries and poor root canal therapy prognosis.

In the future when treating patients with rumination syndrome, the family's treatment expectations should be guarded. Full coverage treatment options, such as SCCs and resin crowns, should be considered in order to reduce future tooth retreatments. Patient has since been placed on a six month recall regiment in order to complete prophylaxis and evaluate response of teeth and periodontium to the full-coverage restorations.

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