

Prosthetic Management of Florid Cemento-Osseous Dysplasia: Case Report

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Abstract

Cemento-osseous dysplasia is a non-neoplastic condition in which a normal bone architecture is replaced with cemento-osseous tissue. It is a benign fibro-osseous lesion of the jaws associated to root apices and containing amorphous calcifications which would correspond to cementum. They are classified, according to their extent and radiological appearance, into three main groups: peri-apical, Florida and focal cementitious dysplasia. Moreover, two forms can be described for Florida cemento-osseous dysplasia (FCOD): symptomatic, which is the most frequent, and asymptomatic. The treatment differs according to the form. Indeed, in case of symptomatic lesions, surgical management can cause the loss of interrupting substance. It must be completed by a prosthetic rehabilitation that allows the patient to resume his mandibular functions, especially mastication. In our work and through a clinical case, we will highlight the steps of the prosthetic rehabilitation of a loss of non-interruptive mandibular substance following the removal of a bone sequester caused by cemento-osseous dysplasia.

Keywords: Florid cemento-osseous dysplasia, Loss of non-interruptive substance, removable prosthesis, semi-flexible resin.

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I. INTRODUCTION

Cemento-osseous dysplasia is a non-neoplastic condition in which a normal bone architecture is replaced with cemento-osseous tissue. It is a benign fibro-osseous lesion of the jaws associated to root apices and containing amorphous calcifications which would correspond to cementum [1].

They are classified, according to their extent and radiological appearance, into three main groups: peri-apical, Florida and focal cementitious dysplasia. Moreover, two forms can be described for Florida cemento-osseous dysplasia (FCOD): symptomatic, which is the most frequent, and asymptomatic. Surgical management can cause the loss of interrupting or non-interrupting substance. It must be completed by a prosthetic rehabilitation that allows the patient to resume his mandibular functions especially mastication.

In our work, through a clinical case, we will present the steps of the prosthetic rehabilitation of a loss of non-interruptive mandibular substance following the removal of a bone sequester caused by cemento-osseous dysplasia.

II. OBSERVATION

Patient IA, 58 years old, hypertensive, sent by the department of medicine and oral surgery to the consultation of maxillofacial prosthesis of the Clinic of Dental Medicine of Monastir, for a prosthetic rehabilitation.

The patient underwent a surgical excision of a cemento-osseous dysplasia 6 months ago involving the right mandibular alveolar ridge from the 45 to the anterior edge of the rising branch.

Exobuccal examination

It showed facial asymmetry and subluxation of the right side TMJ. Cervical lymphadenopathy was not detected. The opening/closing path is straight, and the mouth opening is of sufficient amplitude.

1. Endobuccal examination

a. In the maxilla

Dento-parodontal examination

The residual teeth are 21,22,27,16 and 17. These teeth are alive. Egression of the 17.

Examination of osteo-mucous surfaces

The examination of the osteo-mucous support surface shows a moderately deep palate and rather high and wide rounded crests with undercuts at the vestibular slope of the crest on the right side, covered by a thick and adherent fibro mucous membrane.

b. In the mandible

Dento-parodontal examination

Residual teeth are 42,43,44,32,33,34,35, 36 and 37.

All remaining teeth are alive. Except for the first right mandibular molar, which is mobile and not alive?

The 42 and 32 have a mesial version. The space between these two teeth is very small. The 37 has degree 2 mobility.

Examination of osteo-mucous surfaces

The left alveolar ridge is rounded and of sufficient height covered with a thick, adhering fibro mucous membrane.

On the right side, there is a complete cicatrization of the surgical site. The alveolar ridge is very resorbed and covered with a thick and adherent fibro mucosa with the presence of areas of undercut.

2. Occlusion examination

The vertical dimension of occlusion (VDO) and maximum intercuspitation position (MIP) are not retained. Our only reference will be the centric relation (CR) which is a static position and it is independent of tooth contact. It is indeed a bone-to-bone relation. The condyle must occupy the highest, symmetrical, centred, non-restrained backward position in the glenoid cavities at a correct VDO. This position is stable, repetitive and does not cause muscle spasm [2].

3. Radiological examination

The residual maxillary teeth 21,22,27,16 and 17 have a CR/RR >1. The 23 is in the root tip state. At the mandible, the 42, 43, 32 33 34 and 36 have an RC/RR >1. The 44 and 35 have an RC/RR=1. In addition, 37 have an apical lesion. The right alveolar crest has a loss of non-interruptive substance



Fig-1: Panoramic radiographic

The prosthetic decision was to make a removable resin partial prosthesis semi-flexible to compensate the loss of mandibular substance and replace missing teeth.

A Muco-static primary impression was made with low viscosity irreversible hydrocolloid (alginate) using perforated stock tray, the size of which was carefully determined.

A rectification were made with pink wax against the right mandibular edentulous crest (against the loss of substance) to obtain a uniform thickness of the impression material.

On these casts a custom impression trays were made of autopolymerising acrylic resins, which will serve as a support for the anatomo-functional impression.

The custom impression trays meticulously adjusted in the mouth. After validation of the peripheral seal using Kerr® thermoplastic impression compound. Upper and lower anatomo-functional secondary impressions were taken with medium-viscosity polysulfide. These impressions allow on the one hand, to record physiological movements and delineate the action limits of muscles and ligaments in relation to the edges of the prosthesis. On the other hand, they make it possible to model without deforming the support area using the plastic characters of the impression material

and to appreciate the differences in compressibility between mucous tissue and desmodontaux.

The casting of the secondary impression was made of yellow plater. On the secondary casts obtained (fig3), we fabricate record bases of autopolymerizing acrylic resin and wax bite rims (fig4). The recording of maxillomandibular relation must do with centric relation at the proper VDO (fig5). Finally, the models are mounted on articulators.

When the clinician and the patient have approved the teeth try in, the denture is ready to be processed. After polymerization, the dentures were polished and inserted in the mouth (fig7). Oral hygiene and wearing recommendations were given to the patient, and post insertion follow up were scheduled.

III. DISCUSSION

Cemento-osseous dysplasia Floride (CODF) is a relatively common pathology of idiopathic aetiology. It is a non-neoplastic affection in which cemento-osseous tissue replaces normal bone [1].

In addition, we describe two forms for Florida cemento-osseous dysplasia (FCOD): symptomatic, which is the most common and asymptomatic form.

Clinically, it is most often discovered by chance during a routine radiographic examination for asymptomatic forms. We note that the teeth related to the lesions are usually alive. Nevertheless, infectious complications may occur following the exposure of the lesion to the oral environment (extraction, biopsy, endodontic treatment, traumatic prosthesis ...). Thus, the asymptomatic form becomes symptomatic and manifests itself via pain, suppuration, fistula and then sequestration [3].

In fact, FCOD can take diverse radiological appearances according to its stage of development (1)(4). Furthermore, the diagnosis is usually radiological Langlais *et al.* describe the following five characteristics:

1. Osteoporotic: localized zone slightly osteolytic at the root apex of vital teeth.
2. Osteolytic: characterized by the development of radiolucent zones at the root apexes of vital teeth, representing a lytic bone replaced by a fibro vascular connective tissue.
3. Cementoblastic: showing the development of a radiopaque component inside radiolucent zones representing a lysis of trabecular bone, a fibrovascular connective tissue, a proliferation of cementum, and a small central mass of cementum.
4. Maturation: stage characterized by cementum masses which can reach 15 cm, surrounded by a radiolucent zone ranging 1-3 mm in width or in direct apposition with normal alveolar bone.

5. Florid: demonstrating the coalescence of individual mature cementum masses of 1.5 cm and more, to form a more or less continuous and irregular radiopaque strip extending through the alveolar bone of the jaws.

The treatment differs according to the form. Indeed, In case of asymptomatic lesions, discovered during a routine examination, biopsy is not indicated and the patient should be subject to a periodic radiological and clinical follow-up (every two or three years) for a possible behavioural change of the lesions [1, 5]. However, in the case of symptomatic FCOD, we indicate radical surgical treatment [5]. These removals cause varying degrees of loss of substance depending on the size of the lesion and tissue invasion.

In addition, there are different classifications of mandibular substance loss noted by BENOIT in 1974: partial substance loss, which does not interrupt bone continuity and interrupting substance loss, which is defined as a permanent continuity of bone tissue in the mandible.

On the other hand, the management of mandibular substance loss must strive to restore mandibular functions (chewing, swallowing and phonation), aesthetics as well as social integration. This rehabilitation can be either surgical or prosthetic. Although certain factors may guide the therapeutic indication, the decision must always be made on a case-by-case basis, always with the aim of providing the best quality of life for the patient.

The prosthetic decision for a removable denture is based on the dento-pondontal factor of the remaining teeth. Since our patient has residual teeth with an unfavourable dento-parondontal prognosis, hence the indication of acrylic removable partial denture.

We will not use poly methyl methacrylate (PMM) resin but rather the semi-flexible QDENT resin, which is an acrylic resin and not polyvinyl like that of flexible resins. This property meets the principle of biocompatibility (biological integration) of acrylic removable partial denture.

In addition, it has a certain degree of flexibility that allows the creation of aesthetic clasp. This aesthetic clasp is capable of bypassing through their retentive arm the maximum curvature of the support teeth to reach the undercut area.

In addition, for those patients who have undergone a surgical removal, the presence of the undercut area is common; this flexibility will allow to easily bypassing these areas.

This flexibility maintains nevertheless a rigid base conforming to the principle of rigidity of the acrylic removable partial denture. In addition, this resin is lighter and more comfortable which allows us to compensate for the loss of substance with an important thickness of the base without causing discomfort to the patients. An especially important advantage is the possibility of rebasing, repair, and addition of teeth after extraction of the other teeth due to the state of the residual teeth.

Beside this conventional prosthetic rehabilitation, implant-supported prostheses can be indicated. However, this therapeutic possibility requires a prior reconstitution of the loss of substance (bone grafting), to allow the implants to be placed [6].

Nevertheless, our patient refused any further surgery after the removal of the FCOD and she even refused the extraction of the 17, which is unrecoverable. That is why we decided to do a conventional prosthetic rehabilitation.

IV. CONCLUSION

Cémento-osseuse dysplasia Florida, is part of the spectrum of cemento-osseous lesions that are benign tumors (1). It has the most provider etiology of substance loss, whether interrupting or not. For losses of non-interrupting substances, the management can be a prosthetic rehabilitation alone or by combination of surgical reconstitution and prosthetic rehabilitation.



Fig-2: Maxillary and mandibular secondary impression



Fig-3: Maxillary and mandibular secondary casts



Fig-4: Record bases and wax bite rim



Fig-5: Maxillomandibular relation



Fig-6: Try in



Fig-7: Semi flexible resin prosthesis



Fig-8: Denture insertion

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