



Periprosthetic Surgical Preparation of Total Edentulous at CHU-CNOS De Bamako

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Abstract

Oral health and general health are intimately linked and dependent in humans. The complete disappearance of the teeth leads to the loss of proprioceptive control systems, modification of the entire tissue system, and therefore great psychological fragility. Pre-prosthetic surgery consists of restoring the osteo mucosal tissues to allow the placement of a prosthesis.

The Objective: Was to assess the need for pre-surgical prosthetic preparation of the total edentulous at the CHU-CNOS in Bamako.

Method and Materials: This was a descriptive prospective study spanning a period of 08 months (from January 1 to August 31, 2018). Patients admitted to the removable prosthesis department for a consultation diagnosed with edentulousness constituted the study population.

We carried out an exhaustive recruitment of the total edentulous people received in the department for the completed removable prosthesis who agreed to participate in the study. Data were collected using an individual survey sheet and analyzed with SPSS version 20.0 software.

Result: A total of 50 patients were registered including 14 men or 28% and 36 women or 72%. The sex ratio was 0.38 in favor of women. The 60 to 69 age group was the most represented with 19% and the average age was 56 years. The demand for prosthetic restoration for aesthetic and functional purposes represented the reasons for consultation in 46%, 44% of cases and pain in 10% of cases the most expressed concern by patients. Oral hygiene was 64% average, 20% good and 16% poor. Tooth extraction represented 70% of cases, without surgery 20% of cases and osteotomy 10% of cases as a pre-surgical prosthetic treatment. The ridge was poorly resorbed at 40%, moderately resorbed at 30%, highly resorbed at 20% and the negative ridge at 10%, 50% of patients did not wear a prosthesis, 34% of patients wore partial removable prostheses and 16% wore full removable dentures. Of our patients 66% had normal brakes, 22% had short brakes and 12% had wide brakes.

Conclusion: This study made it possible to highlight the real needs for pre-surgical prosthetic preparation. Among these needs, multiple tooth extraction remains the most common pre-prosthetic surgery.

Keywords: Preparation; Pre-prosthesis; Surgery; Edentulousness; CHU CNOS

Introduction

In humans, oral health and general health are intimately linked and dependent. The total disappearance of the teeth leads to the loss of proprioceptive control systems, the modification of the en-

tire tissue system (bone and mucous), masticatory or even general muscular de co-ordination, the alteration of phonetic function, the loss of family and social image and therefore a great psychological fragility [1].

Thus, it is observed that edentulousness is a public health problem, linked to oral pathologies and the aging of the world's population.

Therefore, adequate prosthetic rehabilitation is necessary for the restoration of aesthetics and function.

This rehabilitation is linked to a rigorous treatment plan.

In this plan, surgical pre-prosthetic preparation occupies a prominent place.

This pre-prosthetic surgery consists of restoring the osteomucosal tissues to allow the placement of a prosthesis. The anatomical criteria that make it possible to comfortably support a removable dental prosthesis, complete or partial, are mucous and bony. The mucous support must be of good quality and sufficiently extensive to distribute the pressure per unit area as much as possible during chewing efforts [2].

The bone support must be regular, and its relief sufficiently marked to ensure adequate retention and stability. It may be necessary to resort to surgery to restore satisfactory anatomical conditions.

Depending on the abnormalities encountered, the surgical procedure is located on:

- Mucous membranes modified by plastics.
- The basilar and alveolar bone, by interventions intended to regulate the contours, or to increase the relief, and finally to modify the interracial relationships.

In France, in 2003, MORIN A., *et al.* in a study carried out on a sample of 375 patients received for edentulous, reported 3.6% of total edentulous [3].

A study carried out in Denmark in 2006 shows that tooth loss correlated with the age of ageing accounted for 43.11% [4].

In Senegal, in 2002, Khady. K in his doctoral thesis in dental surgery reported on 405 patients received for prosthesis, 10 patients or 2% needed a complete prosthesis and 31 patients or 7.61% needed a total prosthesis including 23 in the maxilla and 8 in the mandible [5].

In Guinea in 2009 the National Directorate of Statistics and Public Health had found that 60.10% of the rural population aged 35 to 75 had a partial or total edentulate [6].

Materials and Methods

- This was a prospective, descriptive study that covered a period of 08 months, (from 1 January 2018 to 31 August 2018).
- All patients received at the removable prosthesis service for a consultation in whom a diagnosis of edentulousness has been made, constituted our target population.
- The study population consisted of people who had been admitted to the removable prosthesis department at the CHU-CNOS and who had agreed to participate in our study.
- All patients with a Uni or bimaxillary total edentulism, in whom there was a need for surgical pre-prosthetic preparation and who agreed to participate in the study were included in this study.
- All patients who did not have a solid or bimaxillary total edentulism were excluded from this study.

Qualitative variables

Attendance at an oral health service, gender, profession, reasons for consultation.

Quantitative variables

Dental mobility, edentulous dental abrasions, dental prosthesis, age, simplified oral hygiene index (IHOS), alveolar crest, state of the mucous membranes.

Results

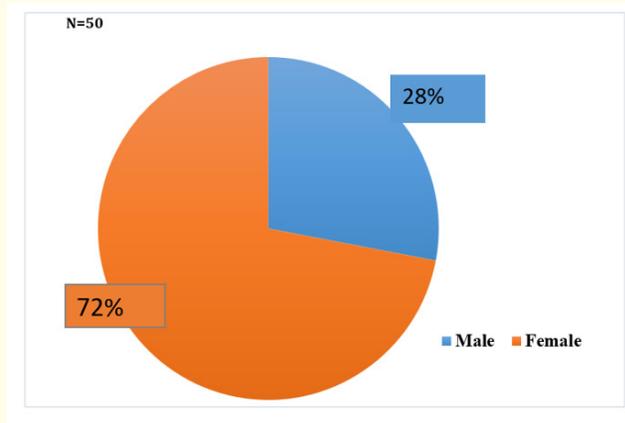


Figure 1: Distribution of patients by sex. Sex-ratio= 0.38.

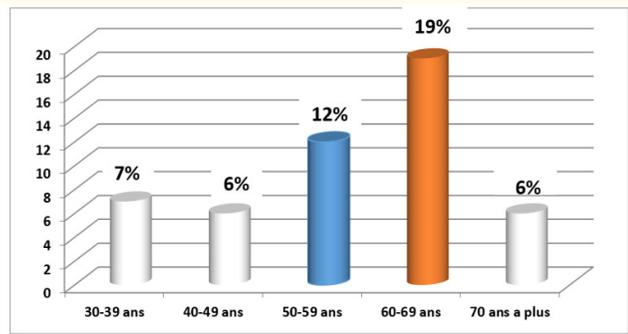


Figure 2: Distribution of patients according to age group.

The main reason for consultation was 46% functional, aesthetic 44%, and dental pain 10%. Oral hygiene was average in 64% of cases, good in 20% of cases and poor in 16% of cases. The pre-prosthetic treatment was extraction (70%), without surgery (20%) and osteotomy (10%). The peak was poorly absorbed in 40% of cases, moderately resorbed in 30% of cases, very resorbed in 20% of cases and the negative peak in 10% of cases. The prosthesis was absent in 50% of patients, partial removable in 34% and total removable in 16%. The localization of edentulous was maxillary plus mandibular in 40%, maxillary in 38% and mandibular in 22% of cases. The comorbidities found were: digestive pathology (46%), high blood pressure (34%), without pathology at 18% and diabetes (2%). The brakes were normal in 66%, short in 22% and wide in 12% of patients. The prescription was mostly antibiotics plus analgesic plus mouthwash in 62.5% of cases, analgesic plus mouthwash in 25% of cases, analgesic alone in 12.5% of cases.

Discussion

In our study, the female sex was the most represented with 72% and 28% for the male sex, the sex ratio was 0.38 in favor of women. The female predominance reported in our study is reproduced in most national and international series. This could be explained by the fact that women are much more concerned about aesthetics and especially the smile than men. These results are superior to those of Sidibé. I who found 60.6% in her study carried out in Mali for the female sex of cases with a sex ratio = 0.65 [7].

During our study, the demand for aesthetic, functional prosthetic restoration represented the patterns in 46%, 44% of cases and pain in 10% of cases the most expressed concern by patients.

We could explain this by the fact that most of our patients had a need both aesthetically and functionally that motivated the consultation. This result is lower than that of NIANG P and AL who had found in their study a pattern both functional and aesthetic in 81.4% of cases [8].

Oral hygiene was average in 64%, good in 20%, bad in 16% of cases in our patients. In his study in Mali, an average hygiene of 38.89% of cases.

Surgical pre-prosthetic treatment

In our study tooth extraction accounted for 70%, without surgery 20% and osteotomy in 10% of cases as surgical pre-prosthetic treatment.

This could be explained by the high number of advanced caries in these patients, with a deficiency in oral hygiene, and accessibility to dental care.

Our results are lower than those of NIANG P and AL who found in their study a pre-prosthetic surgery rate of 47.4% with multiple tooth extraction at 89% [8]. Compared to the ridges, we found in our study that the crest was little resorbed at 40%, moderately resorbed at 30%, very resorbed at 20% and the negative peak at 10%. These results are much lower than those of BELAID L, which reported in its study done in Algeria in 2017, that among the patients recruited, 80% had moderately absorbed peaks against 20% of negative peaks [9].

In our study 50% of our patients did not wear a prosthesis while 34% of patients wore partial removable prostheses and 16% wore total removable prostheses.

This could be explained by the low level of information and education of our respondents in relation to the wearing of prostheses.

Our results are slightly lower than those of CAMARA S. who found 52.25% of cases of partial assistant prosthesis in his study in MALI [11] and 40% of our patients had a total edentulous followed by 22% to the mandible.

The dental extractions still commonly performed and the difficulty of accessing conservative care in our services can reflect these results.

Our results are superior to those reported by Khady. KA (Senegal, 2002), which had found 31 patients or 7.61% of total edentulous including 23 in the maxilla and 8 in the mandible [11].

In our study the localization of edentulous was maxillary plus mandibular at 40%, maxillary at 38% and mandibular at 22%.

Our results are superior to those reported by Khady. KA (Senegal, 2002), which found 31 patients or 7.61% of total edentulous including 23 in the maxilla and 8 in the mandible [11].

General condition

- Compared to the general condition 46% of patients had a disorder of the digestive system at 46%, high blood pressure at 34%, not manifesting pathology at 18% and 2% diabetes.
- Chewing being the first stage of digestion which once disturbed can have repercussions on the digestive system that could explain this relationship between edentulous and gastric disorders.
- Our results are comparable to those of Kamara P I in her doctoral thesis in chir-dent reported 31.8% of cardiovascular diseases; 22.7% of diabetes and 15.9% of gastric disorders [8].
- In our study 66% of our patients had normal brakes, 22% have short brakes and 12% have wide frenulum's.
- This could explain why we did not have to do a Frenectomy because they could unload the prosthesis.
- The only real indication of Frenectomy should be reserved for the median labial frenulum with insertion on the top of the ridge and making visible the edge of the prosthesis with a smile.
- This therapy should always be carried out with reserve and caution because the perfectly registered flanges and brakes increase the length and effectiveness of the seal thus contributing to the stability and retention of the prosthesis [12]. The prescription was mostly antibiotics plus analgesic plus mouthwash at 62.5%, analgesic plus mouthwash at 25%, analgesic at 12.5%. This high rate of the combination of these three molecules is due to the intensity of postoperative pain, the risk of infection, and the proliferation of bacterial flora encountered in some patients during the consultation.

Conclusion

- This study allowed us to highlight the real needs for surgical pre-prosthetic preparation.
- Among these needs, multiple tooth extraction remains the most common pre-prosthetic surgical procedure.

- This predominance implies that the practitioner has a good command of a less invasive surgery, an essential condition for preserving the maximum amount of tissue necessary for the realization of a complete removable prosthesis that meets the aesthetic and functional needs of the patient.
- The management of a total edentulous must be multidisciplinary.
- The study will serve as a blueprint for other cases and contribute to improving patients' health and quality of life.

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