

Oral Pain in Elderly Tunisian Patients: A Cross-Sectional Study

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Abstract

Through this study we aim firstly, to understand the correlation between pain, intensity of pain and different clinical Data. Secondly, to highlight the accurate etiological diagnosis and be able to take the adequate decision for pain management. This study was carried out on 200 edentulous patients who came to the department of complete denture of dental clinic at Monastir Tunisia from february to june 2019. All the patients were examined and assessed by one prosthodontist under the supervision of a professor. A questionnaire was used to record information which was taken directly from the patient when they attend the dental clinic. The patient consent were taken verbally. The questionnaire included 19 questions divided in 3 heading: Medical history, exploration of pain and its intensity and Management strategies. The statistical analysis were done with an SPSS's logiciel version 22.0. The results are presented in form of tables and graphics. Moreover, in this study the most common chief complaint was pain 63% of the sample. This result corroborate with other studies in literature. Besides, a statistically significant relationship was observed between pain and patient's satisfaction with their prosthesis ($P=0.044<0,05$). However, no significant difference was found between pain and other different clinical Data (age, gender, general condition ...) ($P>0.05$). Neither between intensity of pain and different clinical data ($P<0.05$). This result came in argument with results of other worldwide researches. Finally, we came to the conclusion that management strategy of pain must follow a comprehensive, multidisciplinary and systemic approach.

Keywords: Complete edentulous patients, oral pain, intensity of pain, complaints, patients' satisfaction with their prosthesis, complete denture wearer.

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I. INTRODUCTION

According to the official definition of the International Association for the Study of Pain (IASP), Pain is " An unpleasant sensory and emotional experience associated with, or resembling that associated with, actual or potential tissue damage." (IASP, 16 July 2021) [32].

Moreover, The pain is mainly based on the patient's feelings, which makes it difficult to quantify and qualify. This features further complicates its study. However, it is the subject of several studies, both fundamental and clinical.

Thompson has called the edentulism the "end stage of oral disease" [10], and those edentulous adults

may present several complaints either related to their prosthesis or not.

Therefore, through this study we aim firstly, to understand the correlation between pain, intensity of pain and clinical Data. Secondly, to make the accurate etiological diagnosis and take the adequate decision for pain management.

II. PATIENTS AND METHODS

This cross-sectional study was carried out on 200 edentulous patients who came to the department of the dental clinic at Monastir Tunisia from February to June 2019. All patients were examined and assessed clinically by one prosthodontist under the supervision of a professor. Nevertheless, the management of these patients was made by a student under the instructions of

the resident and the professor. A questionnaire was used to collect the information, which was taken directly from the patient when they attend the dental clinic; the patient consent was taken verbally. In fact, the questionnaire included 19 questions divided in 3 headings: Medical history, Exploration of pain and its intensity and Management strategies.

The statistical analyses was done with an SPSS's software version 22,0. The results are presented in the form of tables and graphics.

Inclusion criteria

1. Adult patients, either single or bimaxillary edentulous, of any age, gender, and systemic condition
2. Patients who accept to participate in the study

None inclusion criteria

1. Patients who could not accurately describe their complaints and patients with disability
2. Patients who performed their denture in another hospital or private practice

III. RESULTS

1. Descriptive results

The male percentage was more than female 59% and 41% respectively (fig1). Patients of age group above 60 years were more than patients of the age group of up to 60 years, 94% and 6% respectively (fig2). The percentage of patients with an altered state of health was higher than patients with good health statements 94% and 6% respectively (fig3). 78% of patients were satisfied by their prosthesis the day of insertion and 22% were not satisfied (fig4). The percentage of new prosthesis wearer was higher than old prosthesis wearers (fig5). Ninety one percent of the patient had a bimaxillary denture, 7% had single complete denture and only 3% had unimaxillary stabilised complete denture (fig 6).

The pain was the most common complaint of most of the patients with 63% (fig7). 36% of patients describe pain during deglutition, 37% had pain during mastication, 21% had pain at prosthesis insertion and 7% describe pain at prosthesis disinsertion (fig 8).

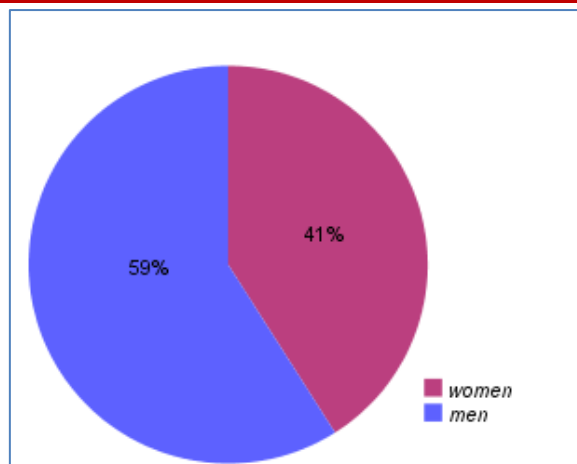


Fig-1: Patients' distribution according to the gender

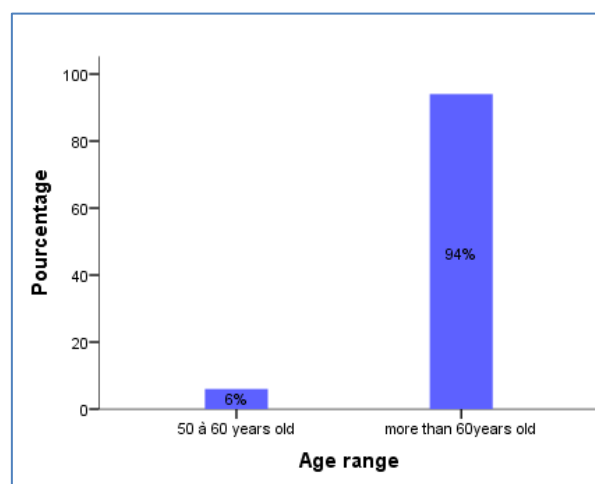


Fig-2: Patients' distribution according to the age range

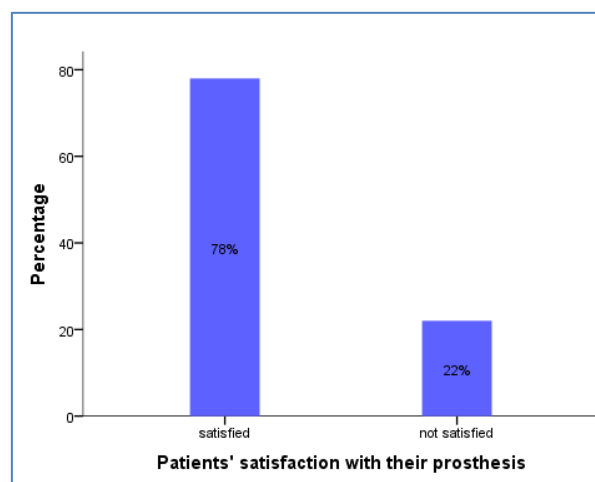


Fig-3: Patients' distribution according to their satisfaction the day of prosthesis' insertion

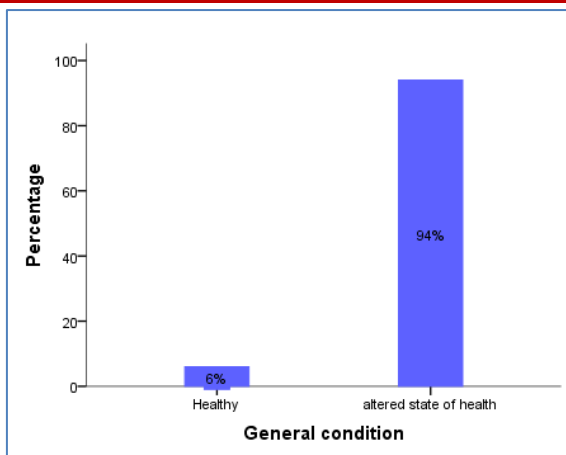


Fig-4: Patients' distribution according to the general condition

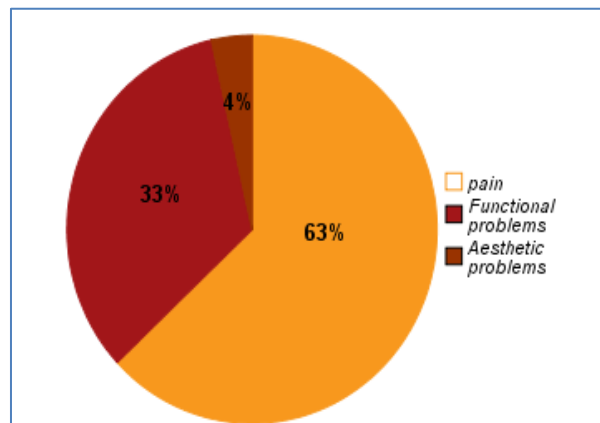


Fig-7: Distribution of patient according to the chief complaint

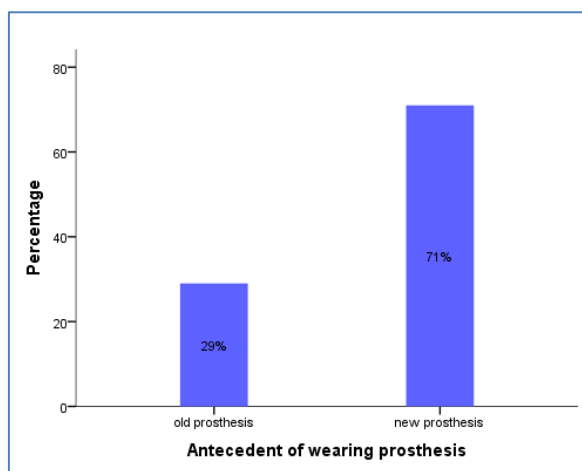


Fig-5: Patients' distribution according to the antecedent of wearing prosthesis

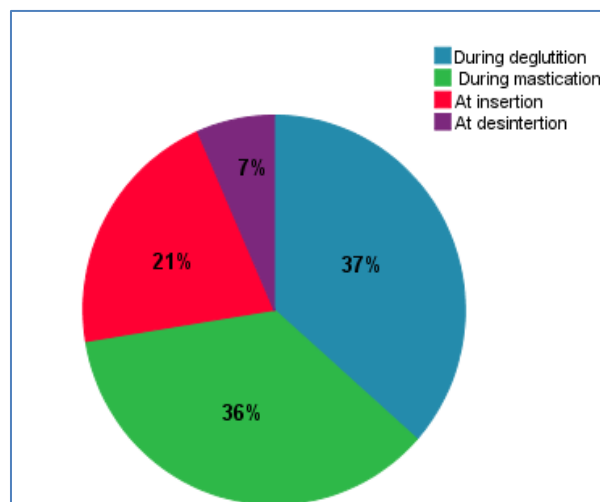


Fig-8: Patients' distribution according to the pain emergence

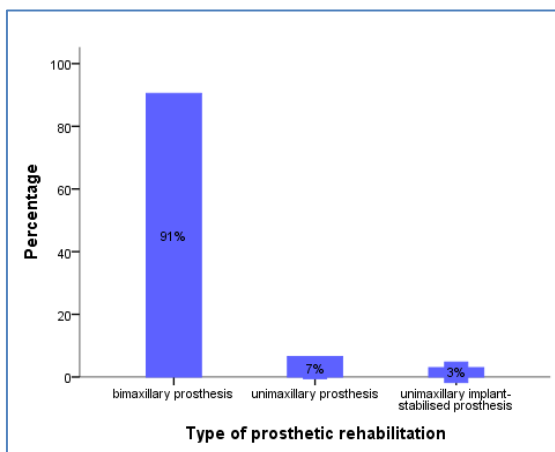


Fig-6: Patients' distribution according to the type of prosthetic rehabilitation

2. Analytic results

In this present study, no significant differences were found between Pain as chief complaint and different clinical parameters (gender, age, general condition, patient's attitude, smoking, antecedent of wearing prosthesis, type of prosthetic rehabilitation, prosthetic hygiene), $p > 0.05$. Besides a statistical correlation between Pain and patients' satisfaction with their prosthesis on the day of insertion (Table 1).

Table-1: Correlation between pain as chief complaint and different clinical parameters

Parameters	Chief complaint : Pain		p value
Gender %	Female	40,6	0,73
	Male	59,4	
Age %	50-60	5,6	0,62
	>60	94,9	
General condition %	Good health statement	32,5	0,91
	Altered state of helth	67,7	
Patient's attitude	Relaxed	80	0,22
	Trustful	7,5	
	Mistrustful	12,5	
Smoking	Yes	42,5	0,29
	Non	57,5	
Antecedent of wearing prosthesis %	old prosthesis wearers	30	0,59
	new prosthesis wearers	70	
Type of prosthetic rehabilitation %	Bimaxillary total prosthesis	91,9	0,6
	unimaxillary total prosthesis	5,6	
	unimaxillary implant stabilized prosthesis	2,5	
Patients' satisfaction with their prosthesis %	Satisfied	80,6	0,04*
	not satisfied	19,4	
Prosthetic hygiene	Sufficient	47,2	0,65
	Mediocre	46,5	
	Not sufficient	6,3	

In the other hand, concerning the severity of pain, in this current study, No significant differences

were found between different clinical parameters and severity of pain ($P>0.05$) (Table 2).

Table-2: Correlation between pain severity and different clinical parameters

Parameters		severity of pain				p-value
		None	Mild	Moderate	severe	
Gender %	Female	36,3	39,5	52,6	50	0,37
	Male	63,7	60,5	47,4	50	
age %	50-60	7,5	5,3	5,3	0	0,847
	>60	92,5	94,7	94,7	100	
General condition %	Good health statement	38,8	32,4	24,3	16,7	0,363
	Altered state of health	61,3	67,6	75,7	83,3	
patient's attitude	relaxed	80	81,6	78,9	50	0,37
	trustful	15	3,9	7,9	0	
	Mistrustful	5	14,5	13,2	50	
smoking	yes	36,3	50	31,6	33,3	0,185
	non	63,7	50	68,4	66,7	
antecedent of wearing prosthesis %	old prosthesis wearers	25	32,9	31,6	16,7	0,626
	new prosthesis wearars	75	67,1	68,4	83,3	
Type of prosthetic rehabilitation %	Bimaxillary total prosthesis	88,8	90,8	92,1	100	0,834
	unimaxillary total prosthesis	6,3	7,9	5,3	0	
	unimaxillaryi implant stabilized prosthesis	5	1,3	2,6	0	
patients' satisfaction with their prosthesis	Satisfied	80	77,6	81,6	33,3	0,059
	not satisfied	20	22,4	18,4	66,7	
Prosthetic hygiene	Sufficient	55	42,7	44,7	50	48,2
	mediocre	35	50,7	55,3	50	45,2
	not sufficient	10	6,7	0	0	6,5

IV. DISCUSSION

Discussion of the results

The results of this current study showed that the majority of patients (63% of the sample) had as a major chief complaint : pain. These findings are similar to a previous study published by Brunello *et al.* (1998), 75% of the sample (100 patients) have pain and discomfort as a chief complaints. Moreover, Our results are in agreement with Jimmy Patel *et al.* (2017) Study where 45.15% of the sample (100 patients) consulted for pain.

In addition, the result of our study was confirmed by the study of BUSHRA Jabeen *et al.* (2018) in Pakistan which is a cross-sectional study done on 117 patients, and 75% of patients consulted for pain.

Furthermore, the findings of this study are in agreement with Dr. HAWA AHMED SALIH *et al.* study (2016), done on a sample of 200 patients. Unlike AREEJ Ahmed's study (2010) done in Iraq on 40 patients who showed that most of the patients consulted for functional problems related to the adaptation of their prosthesis. Which is the second chief complaint in our study (33% of the simple).

Tableau-3: A Summary table of the literature's study

	Findings of this study : Common chief complaint is Pain	Common chief complaint is functional problems
Brunello DL <i>et al.</i> Study (1998)	+	-
AREEJ.S <i>et al.</i> Study (2010)	-	+
Jimmy Patel <i>et al.</i> Study 2017	+	-
BUSHRA Jabeen <i>et al.</i> study 2018	+	-
HAWA Ahmed Salih <i>et al.</i> study 2016	+	-

(+): corroborate the results of the current study

(-):do not corroborate the results of the current study

In the present study, the percentage of patients who described pain during swallowing (deglutition), i.e., static occlusion, was the highest 37% of the sample. Followed by the rate of patients who described during mastication 36% of the sample. Then we find, the pain described at the insertion of the prosthesis with a percentage 27% of the sample. And finally, the pain described during the removal of the prosthesis with the lowest percentage 7%.

Moreover, the reported pain during deglutition is mainly related to static occlusion because, for complete rehabilitation, deglutition coincides with the centric relationship at the correct vertical dimension. Hence, these pain that appears in a centered relationship can be explained by premature contacts responsible for local overload and compression [25, 19].

Another point is that, the occlusal concept used for total edentulous rehabilitation is balanced occlusion “which has simultaneous contacts on the arcades of all occlusal surfaces of all teeth on both sides, regardless of the mandibular position”. Therefore, the pain reported during mastication is reflects problems related to dynamic occlusion in laterality and propulsion [25, 26].

In this study, the rate of men who consulted for pain is greater than that of women 95 (59.4%) and 65 (40.6%) respectively. Also, Patients of age group above 60 years are more important than those of age range between 50 and 60 years 151 (94.4%) and 9 (5.6%) respectively. Moreover, the rate of patients with disorders 106 (67%) is higher than those in good general condition 51 (32.5%).

Otherwise, there is no statistically significant relationship between pain and gender, age, or general condition which is in agreement with the studies of Brunello in 1998 [7], Jimmy Patel *et al.* 2017 [22], and Dr. Hewa Ahmed Salih *et al.* 2016. Contrary to what was found in the Powter G’s study [23] and Cleaton-Jones P 1980.

On the other hand, The majority of patients who have consulted for pain have bimaxillary complete prostheses (147) (91.9%) followed by the rate of patients who have a single complete denture [9] (5.6%), then patients who have a unimaxillary implant stabilized prosthesis [4] (2. 5%). This can be explained by the fact that our target patients are those who consult in the department of a complete removable denture, at a public dental clinic which influences the socio-economic conditions of the patients.

Furthermore, the rate of patients who complained of pain and who are new prosthesis wearers 112 (70%) is higher than those who are old prosthesis wearers 48 (30%).

This result may be explained by the fact that prostheses are made on a rigid and hard plaster cast which requires a time of adaptation and integration after the mouth insertion owing to the difference in the degree of depression of the osseo-mucous support membranes. Also, according to Powter G *et al.* 2018 study [23], this result can be related to the fact that patients who have been wearing prostheses for a longer period of time may have acquired “prosthesis” reflex arcs and be able to accept them more easily.

About, the severity of pain, in this current study no significant differences were found between it and the different clinical parameters. Unfortunately, in the literature, we didn't find a study which is interested to this parameter.

1. RECOMMENDATIONS

In this current study, a statistical correlation between pain as a chief complaint and patients' satisfaction on the day of prosthesis insertion was found. Thus, must try to act on the latter by [5, 9, 12]:

- Assure a relationship of trust between the patient and the dentist.

- In cases where the prognosis is unfavorable, explain it to the patient at the first consultation to avoid disappointment on the day of prosthesis' insertion.
- Improving the quality of treatment options available to patients such as implant-supported prostheses because they upgrade the quality of life of patients; however, it should be emphasized that this remains patient-dependent; dependent practitioner but also dependent on the prosthetic technician.

Finally, The diagram below summarizes the therapeutic alternatives to be adopted if the patient describe pain: [11, 13, 10, 16]:

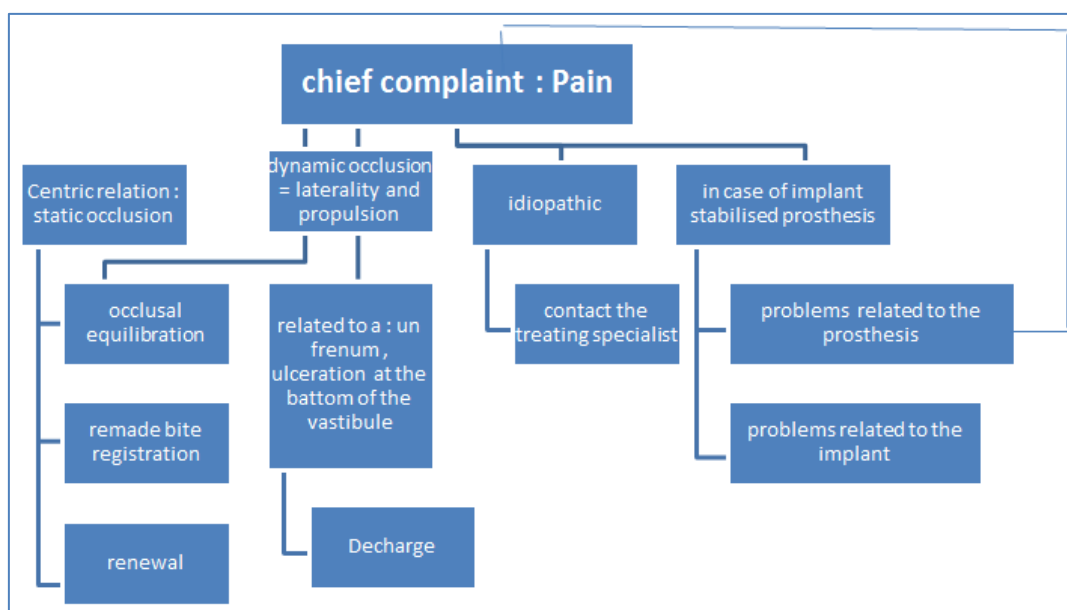


Fig-9: Different strategies of pain management for edentulous patient

V. CONCLUSION

Limitations of this study includes: first, the Lack of other studies that consider pain intensity as a parameter to study pain. In addition, most studies were about the post-insertion complaint and not particularly about pain. Second, this study is mono-centric, so it is done in the departement of complete removable prostheses which influenced our sample; we find more patients with bimaxillary complete prostheses and fewer patients with implant stabilized prostheses. Thirdly, One of the objectives of this study was to study pain in a complete edentulous patient, whether it be paired, that is, pain related to the wearing of the prosthesis or not (pain related to systemic diseases, etc.). But given the mono-centric nature, a pre-selection of patients oriented to our service is carried out; therefore the results obtained are more or less precise. Finally, the assessment of pain is different from one patient to another and depends on the tolerance threshold of each individual and therefore remains subjective in the absence of a concrete manifestation such as ulceration; sedation of pain, after interventions.

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