CLINICAL CASE

"MULTIDISCIPLINARY TREATMENT OF A PATIENT WITH GENERALISED ADVANCED PERIODONTITIS"

Leticia Caneiro, Santiago Mareque, Pilar Batalla, Juan Blanc, Cristina Carral Freire.
Universidad Santiago de Compostela, School of Dentistry, Department of Periodontology

▪ *INTRODUCTION*

Periodontal disease is highly prevalent among the adult population in Spain. Between 85 and 94% of those over the age of 35 years have some gum-related problem, and between 16 and 30% have periodontitis, being considered severe in 5-11% of the adult population (Oral Health Survey in Spain 2010).

Periodontal diseases are a group of multi-bacterial infectious diseases caused by mainly gram-negative, anaerobic bacteria that colonise the subgingival area (Moore & Moore, 1994).

The aim of periodontal treatment is to control this infection. Therefore, subgingival debridement is performed, oral hygiene instructions are given and coadjuvant oral antiseptics are used to lower the levels of plaque and bleeding, and also to decrease probing depths and increase attachment levels, which in turn will cause a reduction in pathogenic bacterial load (Lindhe et al., 1984).

But periodontal patients also sometimes have a set of traits, which may include proinclination of the anterior maxillary teeth, interincisor diastemata, rotations or supereruptions, that could alter the occlusal pattern and worsen the prognosis for teeth as well as the patient's aesthetics. In order to solve these problems, multidisciplinary treatment is needed.

Adult patients who come into the clinic not only have periodontal disease, but also have missing teeth that complicate orthodontic anchoring. The use of dental implants has been described in the literature to make orthodontic treatment possible in these patients (Huang et al., 2005).

The ability for osseointegrated implants to remain stable under occlusal stress has been assessed in several different experimental studies (Turley et al., 1988; Roberts et al., 1984; Higuchi & Slack, 1991); said studies concluded that a fixed intraoral anchorage is possible through the osseointegration process.

The following case involves a patient with generalised advanced chronic periodontitis, who has been treated with basic periodontal treatment and a coadjuvant (Perio-Aid® Tratamiento), followed by implant treatment for orthodontic anchorage and by orthodontic and restorative treatment.

- ***ANAMNESIS***

Sixty year old woman.

- ***REASON FOR CONSULTATION***

"I am in pain, my gums bleed and I want to replace my missing teeth".

- ***UPDATED MEDICAL HISTORY***

High blood pressure controlled with oral medication (Kalpress® 320mg, 1tab/24 hours), classified as an ASA II patient.

Family Background

No reported family background of systemic disease or of periodontal disease.

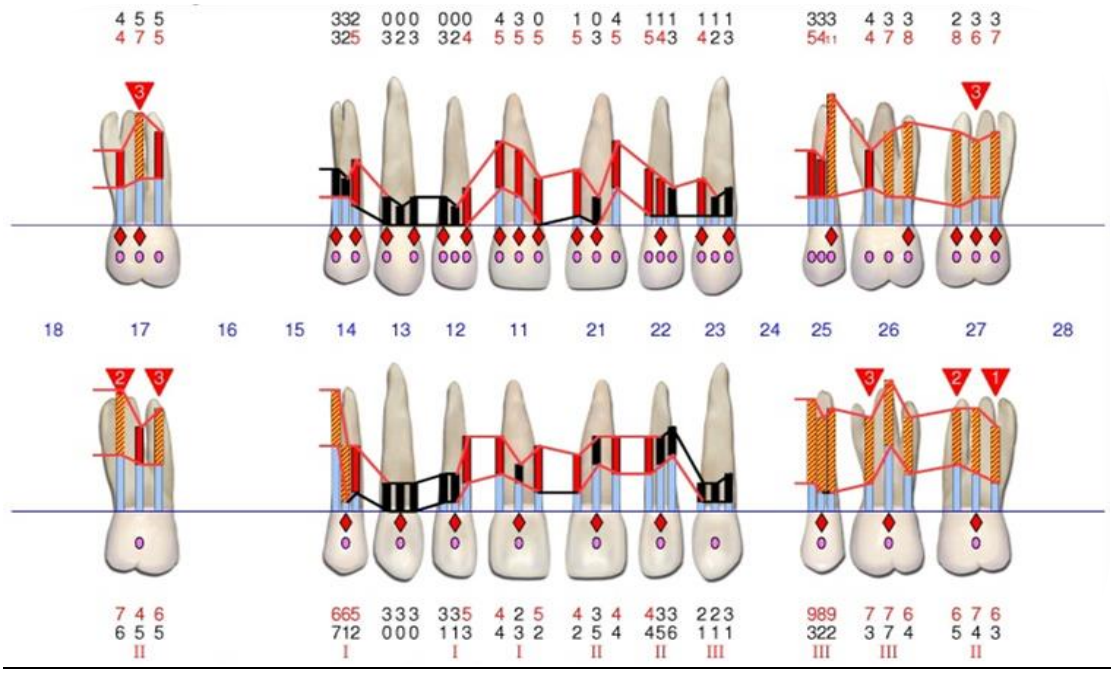
- ***CLINICAL EXAMINATION***

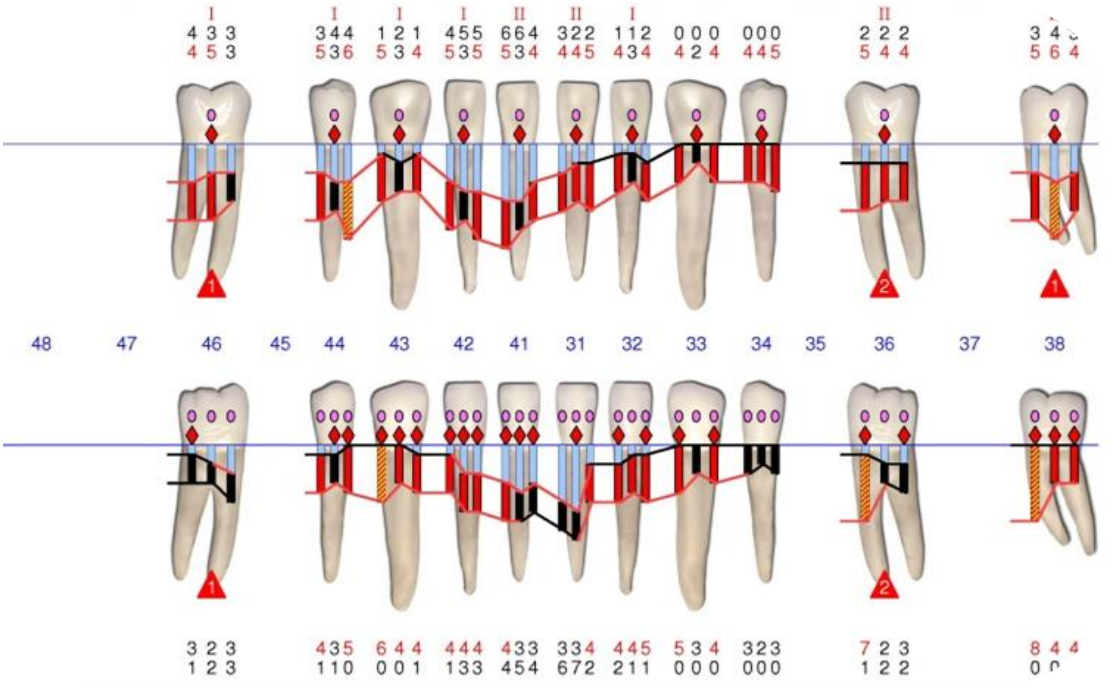
Intraoral Examination

Generalised gingival inflammation was observed in the intraoral examination, with an accumulation of plaque and calculus, as well as missing teeth, dental malpositions and diastemata.

Periodontal Examination

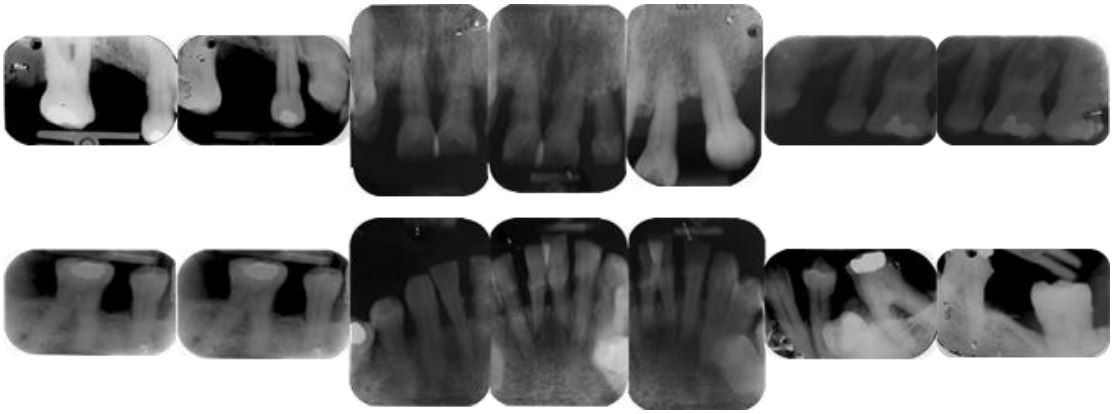
The periodontal exam of the patient revealed generalised deep pockets (>6mm), with furcal affectation, with a plaque index of 98% and with a bleeding index of 71%.





Radiographic Examination

Generalised advanced bone loss is observed in the radiographic examination, with furcal affectations in sextants 01, 03 and 04.



Microbiological Evaluation

Microbiological samples were taken from the deepest pocket in each quadrant, and total counts of 6.4 x 10^6 were obtained, of which 46.39% corresponds to *P. gingivalis* and 10.31% to *P. micra*.

Laboratorio de Investigación						CLAVE	1315
Siglas:	P.ANDRADE CASTRO						
Año nacimiento:	1949				Fumador:	NO	
Clínica:	MASTER SANTIAGO						
Fecha de toma:	25-nov-09				Último antibiótico:		2-3AÑOS
Causa de toma:						(cuál; hace cuánto)	
Salud general:	BIEN						
Medicamentos:	CALPRÉS 320						
Otros comentarios:							
Momento toma:	PRE-RAR	(pre-RAR, post-RAR, post-QCO, MTO, control)					
	1	2	3	4		recuentos	%flora
Localización	17V	27MV	36MV	43DL	total anaerobios	6402000	
Profundidad bolsa	7	8	5	4	*A. actinomyc.*	0	0,00%
Recesión	4	3		1	*P.gingivalis*	2970000	46,39%
Sangrado	SI	SI	SI	SI	*P.intermedia*	1980	0,03%
Placa	SI	SI	SI	SI	*T.forsythensis*	66000	1,03%
Supuración	NO	NO	NO	NO	*P.micros*	660000	10,31%
Movilidad	1	II	NO	NO	*C.rectus*	0	0,00%
					F.nucleatum	19800	0,31%
					Capnocytophaga	0	0,00%
Comentario resultados (solo laboratorio)					*E.corrodens*	13200	0,21%
					Eubacterium sp.	0	0,00%

- ***DIAGNOSIS***

The patient was diagnosed with generalised advanced chronic periodontitis, as per the 1999 classification (Armitage, 1999).

- ***TREATMENT PLAN***

Phase I. Systemic Phase

Monitoring of high blood pressure.

Phase II. Initial Phase

Extraction of teeth with very poor prognosis (25 and 26).

Oral hygiene instructions based on the Bass Technique (VITIS® Medio Access) and personalised interproximal hygiene for each interdental space (Interprox®).

Scaling and root planing with local anaesthesia in two sessions of approximately 60 minutes each.

Adjuvant treatment with a mouthrinse containing 0.12% chlorhexidine and 0.05% cetylpyridinium chloride (Perio-Aid® Tratamiento) for 30 seconds, two times per day, for 15 days.

<u>Re-examination</u>

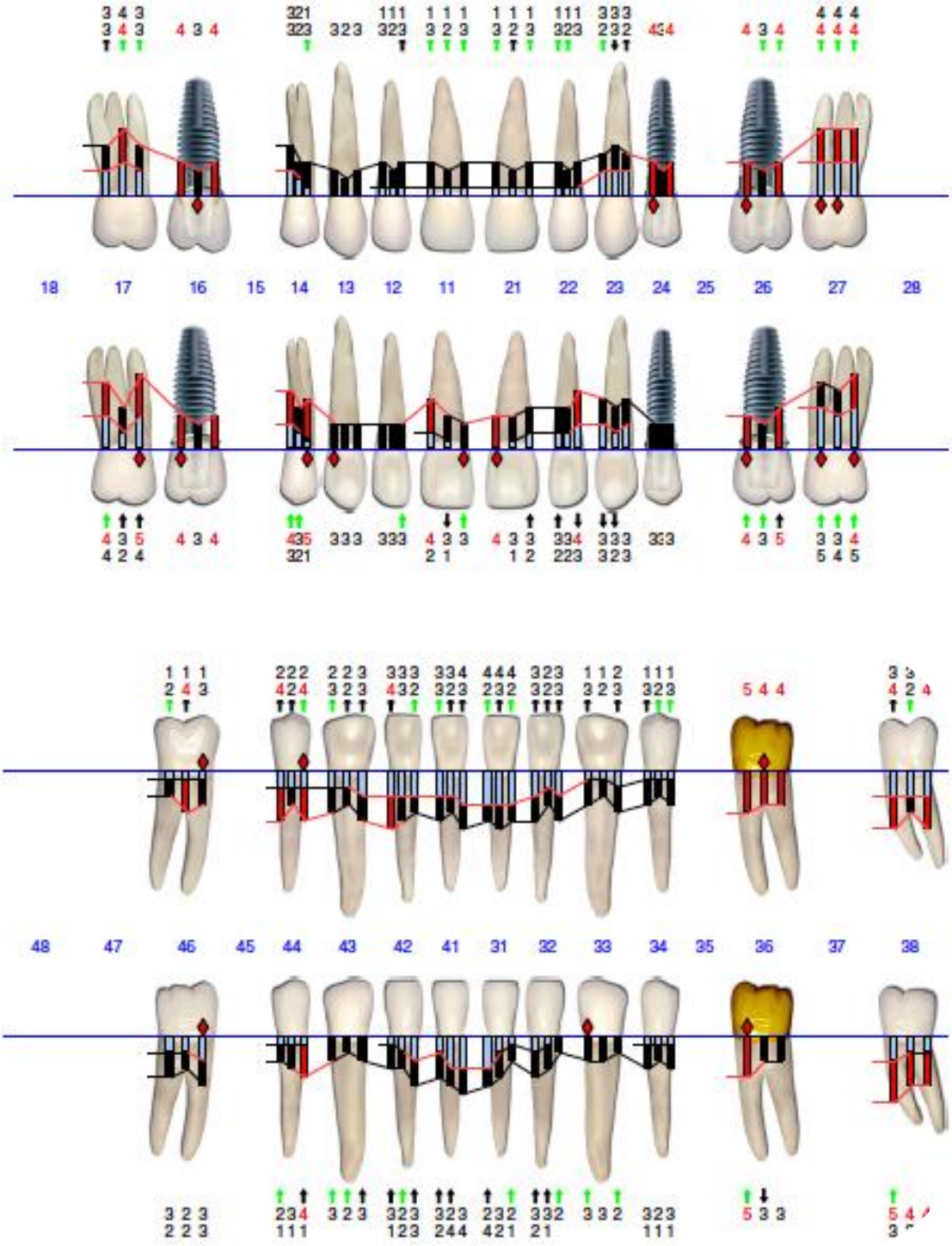
Conducted 8 weeks after treatment; we observed a reduction in probing depths and in plaque and calculus levels.

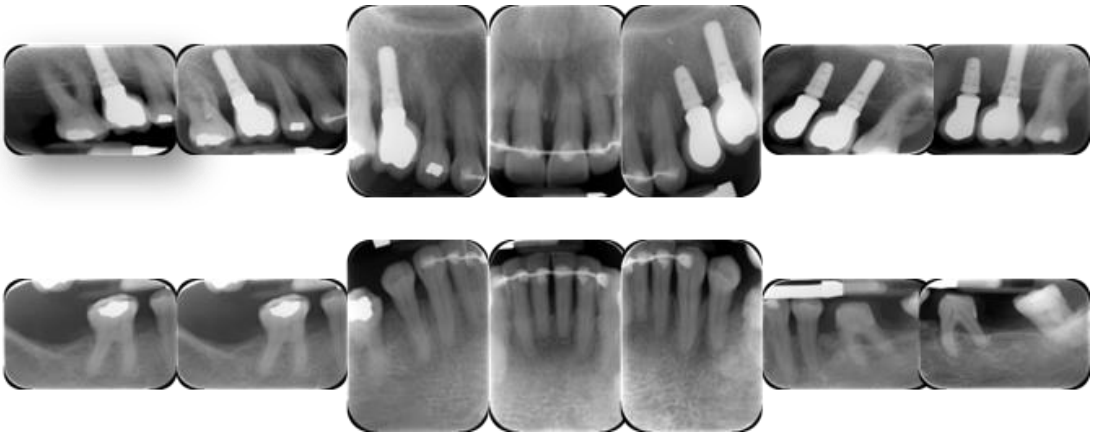
Phase III. Corrective-Restorative Phase

Extraction of 35.

Surgical implant placement in sites 16 and 26 for orthodontic anchorage.

Orthodontic treatment lasting 18 months.



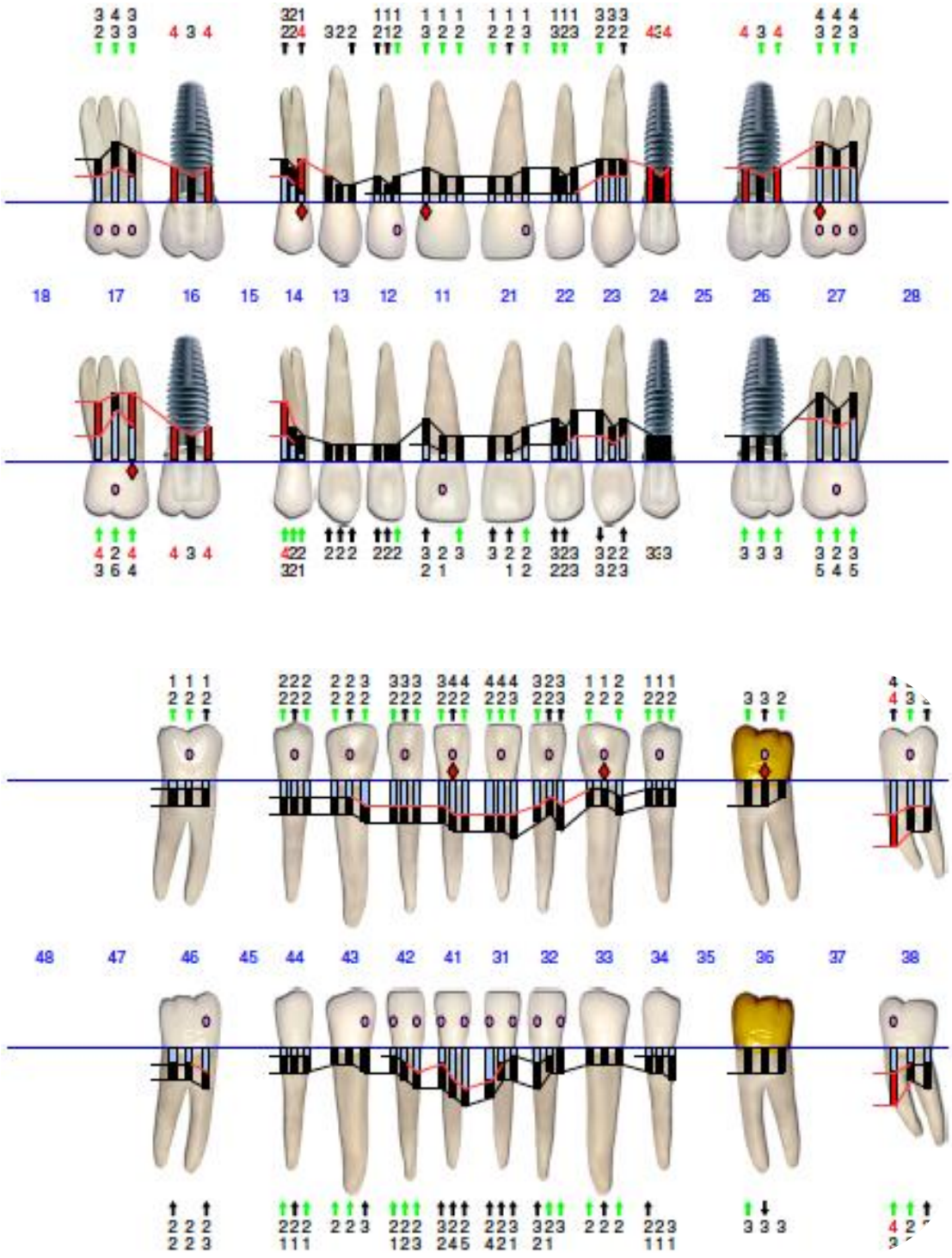


Surgical implant placement in site 25.

Definitive restoration treatment.

Phase IV. Maintenance Phase

During the orthodontic treatment, maintenance was performed every 2-3 months. Once orthodontic treatment was completed, maintenance was performed every 3-4 months.


18 17 16 15 14 13 12 11 21 22 23 24 25 26 27 28
48 47 46 45 44 43 42 41 31 32 33 34 35 36 37 38

- ***DISCUSSION***

In this case, we were able to observe how multidisciplinary management of patients with periodontal disease can improve not only periodontal parameters, but also a patient's functioning and aesthetics.

Basic treatment of periodontal diseases may typically be divided into four phases: systemic, hygienic, corrective and maintenance, or supportive periodontal therapy.

Scaling and root planing is the procedure used for reducing probing depth and for increasing attachment levels, while reducing bacterial load (Mombelli et al., 1994).

Furthermore, it has also been proven that treatment may not yield the expected results if adequate supportive periodontal therapy is not performed (Pihlstrom, 2001).

We also know that occlusal trauma favours periodontal disease progression, and its absence is therefore essential during the orthodontic treatment of periodontal patients (Harrel & Nunn, 2001).

- ***REFERENCES***

Armitage GC. (1999) Development of a classification system for periodontal diseases and conditions. Annals of Periodontology, 4(1):1-6.

Lindhe J, Westfelt E, Nyman S, Socransky SS, Haffajee AD. (1984) Long-term effect of surgical/non-surgical treatment of periodontal disease. Journal of Clinical Periodontology, 11(7):448-58.

Harrel SK, Nunn ME. (2001) The effect of occlusal discrepancies on periodontitis. II. Relationship of occlusal treatment to the progression of periodontal disease. Journal of Periodontology, 72(4):495-505.

Higuchi KW, Slack JM. (1991) The use of titanium fixtures for intraoral anchorage to facilitate orthodontic tooth movement. International Journal of Oral Maxillofacial Implants, 6(3): 338-344.

Huang L-H, Shotwell JL, Wang H-L. (2005) Dental implants for orthodontic anchorage. Amerian Journal of Orthodontics and Dentofacial Ortopedics, 127 (6): 713-722.

Mombelli A, Gmür R, Gobbi C, Lang NP. (1994) *Actinobacillus actinomycetemcomitans* in adult periodontitis. I. Topographic distribution before and after treatment. Journal of Periodontology, 65(9):820-6.

Moore WE, Moore LV. (1994) The bacteria of periodontal diseases. Periodontology 2000, 5:66-77.

Pihlstrom BL. (2001) Periodontal risk assessment, diagnosis and treatment planning. Periodontology 2000, 25:37-58.

Turley PK, Kean C, Schur J, Stefanac J, Gray J, Hennes J, Poon LC. (1988) Orthodontic force application to titanium endosseous implants. Angle Orthodontics, 58(2):151-62.