

GENERALIZED AGGRESSIVE PERIODONTITIS IN A 51-YEAR-OLD. A CASE REPORT

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ABSTRACT:

With its localized and generalized forms, aggressive periodontitis is a progressing disease which affects especially young patients in good health. The periodontal pathogens most associated to cases of aggressive periodontitis are *Aggregatibacter actinomycetemcomitans* and *Porphyromonas gingivalis*. We present to you a more unusual case of a 51-year-old man suffering from an aggressive periodontitis, with all the clinical, radiographic and bacteriologic findings. The therapy phase included scaling and root planning followed by a combination of Amoxicillin and Metronidazole 500mg of each, every 8 hours, for 7 days. The therapeutic outcomes were very favorable.

Keywords: *aggressive periodontitis, periodontal therapy, Real-Time PCR*

1. INTRODUCTION

Aggressive periodontitis is a microbial disease characterized by an early onset, rapid rate of periodontal destruction, predictable attachment loss patterns, genetic predisposition and a specific microbial subgingival profile.

The "aggressive periodontitis" was first introduced to us in 1999 by Gary Armitage in his "Development of a Classification System for Periodontal Diseases and Conditions"[1]. At that time, he replaced the terms "Adult Periodontitis" and "Early-Onset Periodontitis"

with "Chronic Periodontitis" and "Aggressive Periodontitis". Later on in 2000, the American Academy of Periodontology focuses its attention on the clinical characteristics and therapeutic goals and consideration concerning the aggressive periodontitis [2].

An up to date case definition for this type of disease was presented by Albandar in 2014 [3]. He concludes that the key characteristics for the aggressive periodontitis are:

- Early onset (usually before the age of 25 years).

- The pattern of attachment loss and alveolar bone loss includes multiple teeth, bilateral, with a starting point at the proximal surfaces of the permanent first molars and/or incisors. From a radiographic point of view, this translates to “mirror” left to right vertical bone defects in most of the cases.
- The presence of a smaller amount of local etiologic factors such as dental plaque, calculus and caries.
- The rate of progression of the periodontal destruction is presumed to be high, even 4 times higher than that of a chronic periodontitis.
- The patients are healthy, without any systemic disease.
- The familial pattern suggests a genetic predisposition.
- The localized form (LAP) affects the first molars, incisors and a maximum of 2 other teeth. For the generalized periodontitis (GAP) the attachment loss affects 3 or more teeth others than first molars and incisors.

The severity of each case of aggressive periodontitis can be determined by examining

2. CASE REPORT

This is the case of a 51 year old male from Iași, Romania, who sought a dental consult. The patient medical history was unremarkable, he was a non-smoker, but mentioned that his father had a case of severe periodontitis with the loss of all his teeth around the age of 50. The patient had no complains about his periodontal status, his only concern was a dental caries located on a maxillary molar.

We detected no abnormalities while conducting the extra oral examination. The intra oral examination revealed the absence of teeth 1.5, 3.6, 3.7, which were extracted during the

the clinical attachment loss (CAL): slight (mild) – CAL 1 to 2 mm, moderate – CAL 3 to 4 mm and severe (advanced) – CAL ≥ 5 mm[4].

The periodontal therapy for the aggressive periodontitis, similar to that for the chronic periodontitis, includes:

- Oral hygiene instruction for improving the patient’s plaque control.
- Mechanical disorganization of dental biofilm by supra- and subgingival scaling and root planning.
- Adjunctive antimicrobial therapy.
- Control of local etiologic factors.
- Occlusal therapy and periodontal surgery – if necessary.
- Periodontal maintenance. [2]

The prevalence of aggressive periodontitis is rather low and the most affected populations are the Africans. It is believed that its prevalence ranges between 0.1% among the Caucasians in North and Central Europe to a 2.6% for the Black people in North America and 1-5% for the African populations [5].

adolescence years due to deep carious lesions. The patient’s oral hygiene was good and there were small amounts of plaque and calculus.

The signs of inflammation were minimal: a slight reddish color modification on the labial aspect of 4.2 (Figures 1-3) and bleeding on probing localized on the lateral teeth.

We made a full mouth periodontal charting which showed generalized clinical attachment loss: gingival recessions and periodontal pocket, especially deeper in the upper and lower molars (Figure 4-5).

The clinical attachment loss ranged between 1 mm to 7mm (teeth 1.7, 4.7) and 5 (1.6, 2.6, 2.7,

4.6, 4.7) of the molars presented a class 1 furcation involvement.



Figure 1: Intraoral clinical situation



Figure 2: Intraoral clinical situation



Figures 3: Intraoral clinical situation

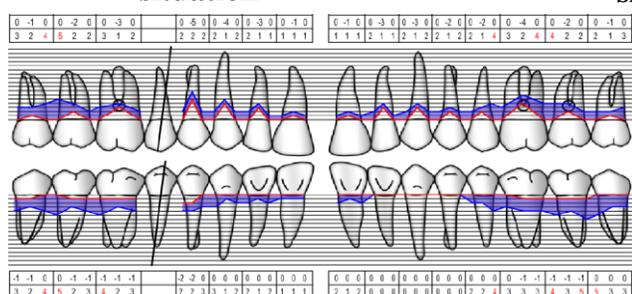


Figure 4: Maxilar periodontal chart

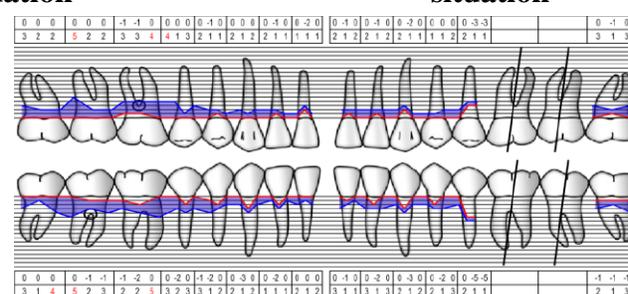


Figure 5: Mandibular periodontal chart

An orthopantomography (OPG) was performed and it confirmed the generalized alveolar bone loss (Figure 6). All the routine blood examinations for this patient were within normal limits, except for the total cholesterol which was 233mg/dl, but had no clinical signification.

Furthermore, we subjected the patient to a Real-Time PCR test (PET Plus by MIP Pharma) in order to determine his microbial subgingival

profile. The results of this test were very conclusive with the diagnostic of aggressive periodontitis: large quantities of all the important periodontal pathogens, including *Aggregatibacter actinomycetemcomitans* and *Pophyromonas gingivalis* (Figure 7).

At this moment in time we had the final diagnostic for this patient: a moderate to severe generalized aggressive periodontitis.

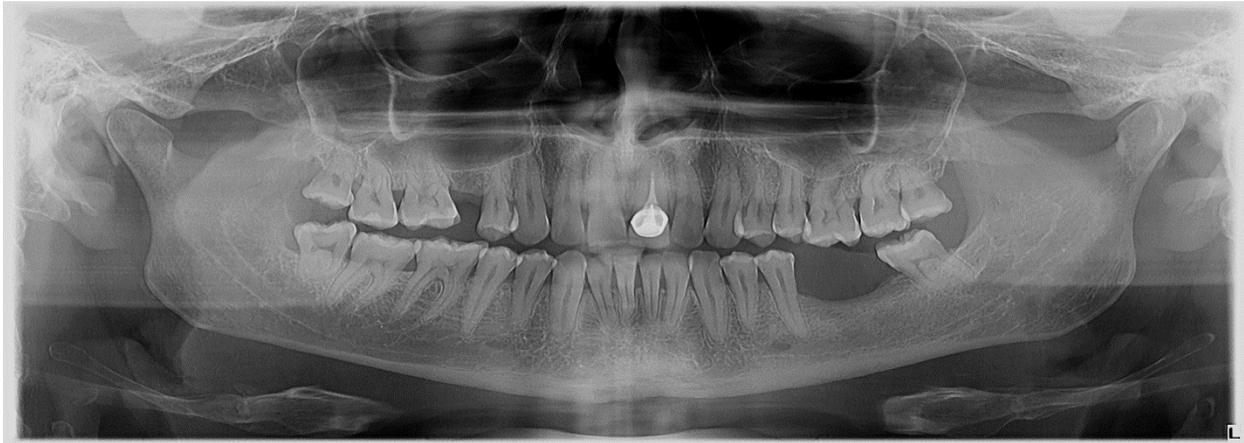


Figure 6: Patient's OPG – generalized bone loss

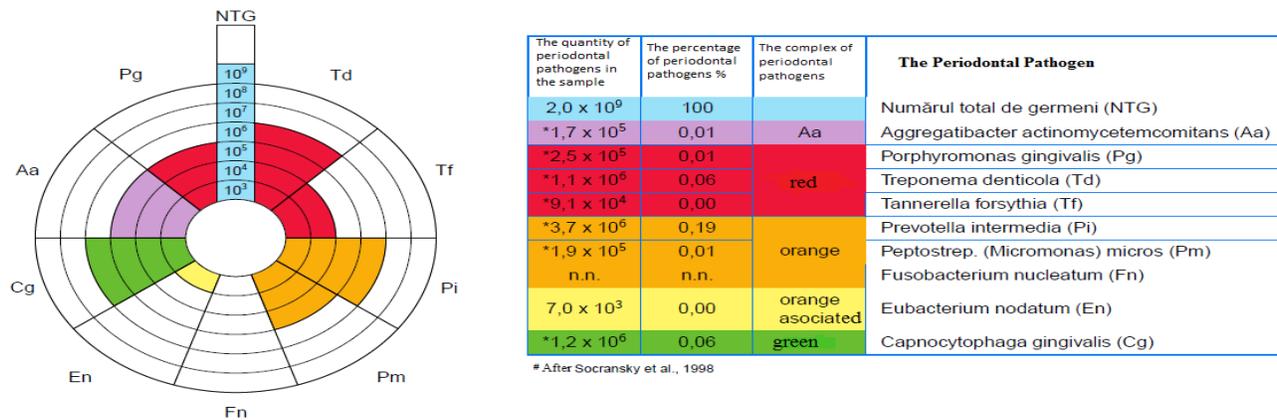


Figure 7: The result of the PET Plus test

The periodontal therapy phase began with oral hygiene instruction and motivation for improving the patient's plaque control. Chlorhexidine mouth wash (0,1% chlorhexidine and 0,5% clorbutanol) was prescribed for a period of 14 days. We performed a conventional supra- and subgingival scaling and root planning, one dental arch per week, within this 14 days period.

On the last day of mechanical periodontal therapy, the patient began the systemic antibiotics: Amoxicillin and Metronidazole, 500mg of each, every 8 hours, for 7 days, following the Afssaps (Agence française de sécurité sanitaire des produits de santé) guidelines from 2011 [6].

The healing process was typical and the patient came in 2 months later for a periodontal reevaluation. At this time we observed a considerable reduction of bleeding on probing (only 2 sites left with BOP) and that the probing depth was within normal limits. The patient is now on a maintenance therapy period and has been advised to undergo a root coverage periodontal surgical therapy.

3. DISCUSSIONS

For all aggressive periodontitis cases, generalized or localized, the early diagnostic is very important. Although it usually affects young patients before the age of 25, its onset may be later in life [2]. The patient in this case report did not present pathological dental mobility, dental malpositions due to attachment and bone loss and the periodontal therapy phase did not include teeth extractions how we would expect for this type of disease. This may be correlated to a later onset of the aggressive periodontitis, unlike the early onset cases were the younger the patient, the more severe the periodontitis may develop [3].

Following the current guidelines for systemic antibiotic prescriptions, we should always consider the use of antibiotics as they are recommended as an addition to the mechanical periodontal treatment (scaling and root planning) [6].

Another reason would be that aggressive periodontitis usually involve several periodontal pathogens which have the ability to invade and penetrate the periodontal epithelium and connective tissue [7].

The use of Real Time PCR test is very useful in knowing the exact subgingival microbial profile and choosing the correct antibiotic or antibiotic combination.

The combination therapy Amoxicillin and Metronidazole following the scaling and root planning is, till this day, the most efficient in improving patients' clinical status and suppressing the periodontal pathogens [8-11].

4. CONCLUSIONS

We can find older patients suffering from aggressive periodontitis. For them we should always consider the possibility of determining the exact subgingival microbial profile by Real Time PCR testing. This extra step can help us make a clearer diagnostic and have a better use of systemic antibiotics. The gold standard for the periodontal therapy remains the scaling and root planning, followed by the antibiotherapy and a lifelong periodontal maintenance.

BIBLIOGRAPHIC REFERENCES

1. Armitage GC. Development of a Classification System for Periodontal Diseases and Conditions. *Ann Periodontol.* 1999;4(1):1-6.
2. Parameter on Aggressive Periodontitis. *J Periodontol.* 2000;71(5-s):867-9.
3. Albandar JM. Aggressive periodontitis: case definition and diagnostic criteria. *Periodontol 2000.* 2014;65(1):13-26.
4. American Academy of Periodontology Task Force Report on the Update to the 1999 Classification of Periodontal Diseases and Conditions*. *J Periodontol.* 2015;86(7):835-8.
5. Susin C, Haas AN, Albandar JM. Epidemiology and demographics of aggressive periodontitis. *Periodontol 2000.* 2014;65(1):27-45.
6. Lesclous P. Prescription des antibiotiques en pratique bucco-dentaire. Recommandations de bonne pratique : Afssaps 2011. *Rev Stomatol Chir Maxillofac Chir Orale.* 2013;114(2):116-8.
7. Position Paper : Systemic Antibiotics in Periodontics. *J Periodontol.* 2004;75(11):1553-65.
8. Winkel EG, Winkelhoff AJV, Timmerman MF, Velden UVD, Weijden GAVD. Amoxicillin plus metronidazole in the treatment of adult periodontitis patients. A double-blind placebo-controlled study. *J Clin Periodontol.* 2001;28(4):296-305.
9. Sigusch B, Beier M, Klinger G, Pfister W, Glockmann E. A 2-Step Non-Surgical Procedure and Systemic Antibiotics in the Treatment of Rapidly Progressive Periodontitis. *J Periodontol.* 2001;72(3):275-83.

10. Berglundh T, Krok L, Liljenberg B, Westfelt E, Serino G, Lindhe J. The use of metronidazole and amoxicillin in the treatment of advanced periodontal disease. A prospective, controlled clinical trial. *J Clin Periodontol.* 1998;25(5):354–62.
11. vanWinkelhoff AJ, Tjihof CJ, Graaff JD. Microbiological and Clinical Results of Metronidazole Plus Amoxicillin Therapy in Actinobacillus actinomycetemcomitans - Associated Periodontitis*. *J Periodontol.* 1992;63(1):52–7.