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Case Report

Generalized Aggressive Periodontitis in High-Risk Pregnancy: Case Report

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Abstract

Objectives: To present a brief literature review and a case report involving an extreme involvement of periodontitis in patients with gestational risk, addressing clinical signs, inducing factors, treatment, and monitoring results.

Case Report: Patient TPF, 30 years old, female, leucoderma, carrier type I diabetes, pregnant with thirty-three-week gestational age, parturient for the second time, and not obese hypertensive, resident in the city of Joinville, home with 2nd degree full instruction. Admitted to the Emergency of a particular hospital in Joinville, in September 2013, with suspected ruptured membranes. After evaluation of the obstetrician assistant, dental clinic evaluation was requested due to the advanced stage of periodontitis.

Final considerations: After diagnosed periodontitis generally to reverse the situation, the trader should pay attention to the needs of the patient and the etiology of the disease. The planning stages of treatment based on a careful clinical examination, current and past medical history it is necessary to obtain success in treatment, as well as cooperation and self-care of patients with their oral hygiene. The periodontal infection in pregnant women may be a risk factor for the birth of premature infants with low birth weight.

Keywords: Periodontitis; High-Risk Pregnancy; Oral Hygiene

Introduction

The association between obstetric complications and periodontal disease is a finding that is increasingly described and confirmed in the literature [1]. It imposes higher rates of premature birth (ranging from 3 to 7.5 times more) [1,2] and low birth weight [1,3], leaving women at higher risk compared to alcohol and smoking [1].

Inflammatory periodontal tissues produce large amounts of proinflammatory cytokines, mainly tumor necrosis factor α (TNF-α), interleukin 1β (IL-1β), interleukin 6 (IL-6) and prostaglandin E2 (PGE2) and may induce several effects on its users. Periodontitis can interfere systematically in the normal course of gestation through endotoxins, proinflammatory cytokines and oxidative stress at the mother/fetus interface. This increase in oxidative stress is cytotoxic to the maternal vascular endothelium and may play a decisive role in the pathogenesis of preeclampsia, which causes premature births, characterized as a specific multisystem gestational disorder, evidenced by arterial hypertension (usually above 140/90 mmHg), edema and proteinuria [4].

Periodontal disease during pregnancy significantly increases the risk of developing preeclampsia, a major cause of perinatal injury, affecting 5 to 20% of all pregnancies [3,5]. It is estimated that, every year, 15 million children are born premature (before 37 full weeks of gestation), and this number is on the rise [4].

The gingiva, the periodontal ligament, the root cementum and the alveolar bone are tissues involved in the support and protection of the teeth, being classified according to their functions. The periodontium is divided into periodontal of support and protection. The protection periodontium is formed by the keratinized mucosa, gingival sulcus, junctional epithelium and conjunctive insertion, which is part of the masticatory mucosa that protects the alveolar process, surrounding the cervical portion of the teeth, while the supporting periodontium is composed of cementum, ligament periodontal and bone [6].

Periodontitis is an infectious-inflammatory disease that affects the supporting tissues that hold the teeth. It is characterized by loss of insertion of the periodontal ligament and destruction of ad-

jacent bone tissues. The evolution of this process leads to loss of teeth due to bacterial action, accumulation of tartar and inflammation of the support structures, resulting in deep periodontal pockets and, consequently, tooth mobility [7].

It should also be noted that the pregnant woman, in several situations, presents hyperemesis gravidarum, providing an oral acid medium, making it difficult or impossible to clean adequately, aggravating the clinical picture [8].

Thus, it is imperative to know the association, the evaluation and management of periodontal disease in pregnant women, especially at high risk, by all health professionals, since the connection between insufficient oral health, and important obstetric complications [1].

Case Report

Patient T.P.F., 30 years old, female, leukoderma, with type I diabetes, pregnant, parturient for the second time, hypertensive and not obese, resident of the city in Joinville, housewife, finished high school as an educational background. Admitted in the obstetric emergency of a private hospital in the city of Joinville, in September 2013, thirty-three weeks of gestational age, with suspected premature aminorexes. After obstetrician evaluation, a clinical dental evaluation was requested based on the advanced periodontitis.

The extraoral and intraoral examination of soft tissues showed absence of elements 15, 14, 12, 11, 21, 22, 25, 27, 28, 38, 36, 35, 33, 43, 46 and 47; residual roots of elements 18 and 16; endo-periodontal lesions of elements 23, 24, 26, 37 and 47; and furcation lesions in elements 17, 26 and 37. Regarding dental history, the patient did not regularly visit the dental surgeon - from 3 to 3 years in average. The patient reported a strong halitosis and discomfort in all elements. His oral hygiene was ineffective and infrequent. As for behavioral habits, she was a non-smoker, non-alcoholic and did not practice physical exercise.

A panoramic radiography was requested as a complementary exam (Figure 1).

In addition to the data obtained in the clinical examination, the indices of visible plaque, bleeding of gingival margin and retentive plaque, odontogram and periogram indices were performed. For this purpose, a periodontal probe was used, which was based on 8% methylene blue, without dyes. It presented an extreme level of visible plaque and a high index of bleeding gingival margin, associated with retentive plaque factors, with predominance of supragingival and subgingival calculus, mainly in the lower anterior region, as observed in figure 2. In this way, the presence of generalized aggressive periodontitis was diagnosed.

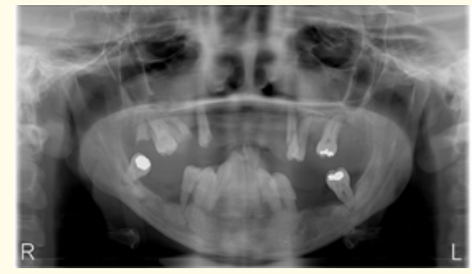

Figure 1: *Panoramic Radiography.*

Figure 2: *Clinical condition during 1st evaluation.*

A frequent brushing and flossing are not synonymous of cleaning, nor does it by itself prevent tooth loss. More important than frequency is the effectiveness of oral cleansing [9]. The delivery was performed prematurely, with a gestational age of 33 weeks, under epidural anesthesia and the procedure did not obtain significant clinical intercurrences. The newborn presented weight 2,400 grams, length of 38 cm, Apgar score of 7 and 9 (1st and 5th minute), and it was a male. Twenty days later, the patient returned to the surgical center for the removal of all compromised dental elements (Figure 3-6), staying in observation and later, sent home after anesthetic recovery.

Figure 3: *Preparation for surgical procedure.*

Figure 4: *Oral condition before surgery.*

Figure 5: *Oral condition after surgery.*

Figure 6: *Extrate dental elements.*

Discussion

Periodontal Disease (PD) is the second most common oral disease in the world. It is the result of an interactive process between dental biofilm (plaque) and periodontal tissues through cellular and vascular responses [10].

The installation and progression of PD involves a set of immunopathological and inflammatory events, with the participation of local, systemic, environmental and genetic modifying factors [11]. In addition to identifying a risk of premature delivery of 3.47 times higher in pregnant women with periodontal infection, the risk of low birth weight babies increased 2.93 times.

Considering premature aminorexes (rupture of the pouch without uterine contractions) the risk rises to 2.48 times [1,2]. Gestation is considered to be at term when it is between 37 completed weeks and less than 42 completed weeks, with low birth weight infants weighing less than 2,500 grams at birth [11,12]. In the case presented, gestational age of the patient was 33 weeks and the newborn presented 2,400 grams at birth, corroborating with low weight indices.

The birth of premature and/or underweight babies is a serious problem, even in developed countries, since they represent 6 - 9% of all births. The classic risk factors do not explain all the occurrences of underweight babies, and their causes are often unknown [13].

Periodontitis is a very common condition, especially in older patients, presenting as clinical characteristics: halitosis, purulent secretion and bleeding around the teeth, calculus, swelling, hyperemia and gingival retraction. Inflammatory and immunological reactions to plaque represent the predominant characteristics of periodontitis [14].

The inflammatory reaction is visible, microscopically and clinically in the affected periodontium and represents the host reaction to the plaque microbiota and its products. Epidemiological studies have shown that although a reduction in height of the periodontium with advancing age is frequent, a relatively small number of individuals in each age group has advanced periodontal destruction, that is, high-risk groups. Moreover, even in the individual, the severity of periodontal tissue damage frequently varies from tooth to tooth and from one dental surface to another, depending on individual hygiene care [14,15].

Thus, while many teeth of the same individual may exhibit advanced loss of connective tissue and alveolar bone insertion, other teeth or dental surfaces may not be affected and present a normal periodontium. Therefore, a patient who is susceptible and presents periodontal disease does not suffer from a homogeneous condition. Each affected site represents an individualized or specific microenvironment [15].

Regarding periodontitis, both prevention and treatment are related to underlying causes such as removal of irritating factors: poorly adapted, rough, with or without excess restorations, presence of plaque, calculations, among others [14].

Recent studies have reported indices between 25 and 50% of causes of premature and low birth weight and concluded that the etiological factors are not totally enlightening. There is an increase

in evidence indicative of the relation of periodontitis to these repercussions [1], as observed in the clinical case in question. In the gestational period, severe hormonal changes occur, which may increase the risk of developing periodontal disease and compromise fetal health [1].

This fact demonstrated the need to interdisciplinary action in health care. The accelerated production on prostaglandin E2 (PGE2) is a proposed theory to explain the relationship between periodontitis and premature delivery, In normal pregnancy, the production of PGE2 in the amnion gradually increases with the course of pregnancy. However, when the level of this substance reaches a certain level, labor is induced [1]. Analyzing the amniotic fluid of pregnant women with periodontitis, several bacterial products have been identified, such as lipopolysaccharides and gram-negative bacteria enzymes, which stimulate the secretion of proinflammatory cytokines, such as tumor necrosis factor α (TNF-α), interleukin-1β (IL-1β), interleukin-6 (IL-6) and PGE2 increased the risk of premature birth and low birth weight fetuses [1,2,4].

In this perspective, the existence of the relationship between periodontal disease in pregnant women as a risk factor for the birth of low birth weight babies and the birth of premature infants becomes relevant [16,17].

Conclusion

The dental surgeon has an essential role in oral health education, motivating patient's self-care, preventing the installation of gingivitis and its progression.

It is of fundamental importance that women of reproductive age, especially pregnant women, perform adequate oral hygiene, regularly visiting dentists.

Periodontitis is a bacterial disease that can lead to eventual complications if not treated seriously and has a causal factor in obstetric adversities.

More studies are needed to fully understand the mechanisms of this association, presenting significant results with efficient therapies and providing relevant outcomes [3].

There is a need to expand preventive measures for pregnant women in harmony with the gynecological and dental professions.

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Conflict of Interest

The author declares no conflict of interest.

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