CASE OF ALOPECIA AREATA ORIGINATED FROM DENTAL FOCUS

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SUMMARY:
For many years the oral infection, especially periodontitis, is considered as a potential contributing factor to a variety of clinically important systemic diseases.
Alopecia areata (AA) is an autoimmune disease with unclear etiology and pathogenesis, rarely associated with dental foci. This disease has a strong psychological impact on the patient, because it presents with hair loss and can affect any hair-bearing area, but usually involves the face and scalp, where esthetic considerations play an important role in self perception.
In this article is presented a case of alopecia areata resulting from dental foci that was effectively resolved by eliminating a focalized dental infection via dental extraction.
In this sense, patients with AA should be subjected to careful exploration of the oral cavity in search of possible dental infections. Close collaboration between dentist, dermatologist, endocrinologist and other medical specialists in the interdisciplinary approach of diagnosis and treatment is needed.

Key words: Alopecia areata, Dental focus, Dental focal infection, Periodontitis

INTRODUCTION:
Focal infection
In 1891 W Miller published his Theory of Focal Infection that postulates a myriad of diseases caused by bacteria, fungi, viruses or their toxins that arise endogenously from a focus of infection.
A focal infection is a confined area that contains pathogenic microorganisms, can occur anywhere in the body and usually causes no clinical manifestations. It leads to localized or generalized infection caused by the dissemination of microorganisms or toxic products from a focus of infection. [1]

Primary foci can arise from the tonsils, adenoids, sinuses and oral cavity with less common from the prostate, appendix, gallbladder and kidney.

Secondary foci are the direct result of infections from other foci through contiguous tissues, or at a distance through the blood stream or lymph channels resulting in development of arthritis, neuritis, myalgias, nephritis, osteomyelitis, endocarditis, brain abscesses, prosthetic joint infections, skin abscesses, pneumonia, asthma, anemia, alopecia, gastritis, pancreatitis, colitis, diabetes, emphysema, goiter, thyroiditis, Hodgkin’s disease, fever of unknown origin, stupidity and ‘nervous diseases of all kinds’. Currently, diseases postulated to be caused by microorganisms include cancer, sarcoidosis, multiple sclerosis, amyotrophic lateral sclerosis, autism, Guillain–Barre´ syndrome, pediatric autoimmune neuropsychiatric disorders associated with streptococcal infections. [2, 3, 4, 5]

Oral primary foci have traditionally been ascribed to pyorrhea alveolaris (periodontitis), alveolar abscesses and cellulitis, pulpless teeth, apical periodontitis, general oral sepsis and endodontically treated teeth with viridans group streptococci (VGS) being the principal metastatic microbial culprits. [2, 3, 6]

Nowadays oral focus is most commonly connected with chronic periodontitis and systemic diseases. In July 1998, the American Academy of Periodontology stated that infections in the mouth may play an important role in disorders involving other parts of the body. At present it is generally agreed on that oral status is connected with systemic health, since poor oral health may occur concomitantly with more serious underlying diseases and/or it may predispose to other systemic diseases. [1, 4, 7, 8, 9, 10, 11]

In Chronic periodontitis periodontal pathogens, which are gram negative predominantly, and their toxins, such as cytolytic enzymes and lypopolisaccharide may access the blood stream through the compromised and/or ulcerated epithelium of the periodontal pocket. Within the inflamed gingival tissue are produced inflammatory mediators as tumor necrosis factor-alpha (TNF-α), interleukin (IL)-1α, prostaglandin E2 (PGE2), and α-interferon which can access the blood stream and contribute to the global inflammatory burden. Thus, the systemic exposure to periodontal pathogens, their toxins, and periodontal derived/elicted inflammatory mediators may determine pathologic consequences in different organ or systems. [12, 13, 14, 15]

Three mechanisms by which periodontal infection may influence systemic health have been described: 1. metastatic infection caused by translocation of Gram-negative bacteria from the periodontal pocket to the bloodstream; 2. metastatic injury, such as vascular lesions from the effects of circulating microbial toxins and pro-inflammatory mediators; 3. metastatic inflammation due to the immunological response to the periodontal pathogens and their toxins. [3, 16, 17]

On the basis of epidemiological studies the association between chronic periodontitis, and cardiovascular disease, respiratory diseases, diabetes, osteoporosis, chronic kidney disease, rheumatoid arthritis, Alzheimer’s disease, Alopecia areata, Alopecia totalis and other diseases have been proposed. [4]
Alopecia

Hippocrates first used the term alopecia but the characteristics of the hair loss disease were first described by Cornelius Celsus in 30 A.D. with two forms: first - complete baldness occurring in people of all ages; second he called “ophiasis”, which literally translates as “snake”, due to the winding way the bald region spread across the skin only seen in children. Alopecia areata is sometimes known as “area celsi” in tribute to Cornelius Celsus.

The actual term “alopecia areata” was first used by Sauvages in his “Nosologica Medica”, published in 1760 in Lyons, France.

From the 1800’s onwards there was debate about the cause of alopecia areata and two main hypotheses were put forward: one based on parasitic infection (Gruby 1843, Radcliffe-Crocker 1903); the other based on a nervous disorder (Von Barensrung 1858).

One of the more unusual variations on the neuropathic origin of alopecia areata was put forward by Jacquet (1902) who suggested alopecia areata was initiated by sources of nerve irritation such as defective and diseased teeth. Jacquet’s hypothesis was apparently confirmed by others (Decelle 1909).

With the start of the 20th century alopecia areata was associated with disorders of the endocrine glands (Sabouraud 1913), particularly the thyroid, due to a hormone dysfunction and toxic agents and syphilis which often manifested itself by sudden, rapid loss of hair in well defined patches, just like alopecia areata (Ormsby 1948, Roxburgh 1950), before progressing to development of lesions and sores. [18, 19, 20]

Alopecia areata (AA) is an autoimmune disease with unclear etiology and pathogenesis which presents with hair loss and can affect any hair-bearing area. Attacks of alopecia are often associated with other autoimmune conditions such as lupus and allergies. In about 20% of cases, the patient is related to someone who has or has had the disease. [21]

It often presents as well demarcated patches of alopecia on skin of overtly normal appearance.

Usually starts out as smooth, small, round or oval patches of baldness that rapidly form on one side of the head. The edges of the patches are usually studded with “exclamation point hairs.” Erythema of the skin can be present early on. [22, 23]

Alopecia areata appears as one or two bald patches on one side of the head, and also causes thinning all over the scalp. In the areas of baldness, the hairs are very short, broken, and narrow. Alopecia areata has a variable course. In some cases, the bald patches regrow within a few months or a year, but sometimes, extensive patchiness develops. Extensive alopecia has a poor prognosis. There is about a 25% recurrence rate.

ILCSs are the preferred method of treatment. Newer topical and systemic agents (eg, biologics) have been tried, but the outcomes have been unattractive. Various therapeutic agents have been described for the treatment of alopecia areata (AA), but none are curative or preventive. [23, 24, 25]

CASE REPORT:

A 55-year-old female presented at the Oral surgery department, Medical University, Plovdiv, referred from a dermatologist for focal infection diagnostic in association with limited hair loss.

The patient was referred from dermatologist for focal diagnosis in connection with restricted hair loss on the parietal area.

Complaints of the patient were tooth roots that interfered with eating and caused bad breath.

In late February 2012 during a visit to the hairdresser was first noticed hair loss of two restricted areas of the parietal area of the head. Patient related the onset of the hair loss with stress.

A month later the patient was referred from her GP to the dermatologist and to the gynecologist, but from hormone and blood tests results no cause of alopecia was found.

Dermatologist diagnosed Alopecia areata (AA) and prescribed treatment with Revalid (1 Capsula containing: 100 mg methionine, 50 mg cysteine, 50 mg calcium pantothenate, 1.5 mg tiamin hydrochlorid, 10 mg piridoksin hidrohlorid (vitamin B6), 20 mg of parabens, 50 mg extract of millet, 50 g wheat germ extract, 50 mg of brewer’s yeast, 2 mg of iron, zinc and 2 mg 0.5 mg copper) and special shampoo.

In May 2014 the dermatologist added to the treatment vitamins and retinol. After few month condition of the patient deteriorate and Dermatologist referred her to dentist for focal infection tests.

The past medical history includes 2 prior hair losses in her youth which patient connected with stress. Because of this history she postponed the dental visit for 2 months.

The patient was otherwise fit and healthy not taking any medication.

She was a non-smoker did not use alcohol.

There was no family history with similar findings.

The general physical examination revealed a moderately built patient with satisfactory vital signs. Extraoral examination revealed alopecic area on parietal area of the head with dimensions 10 x 9 cm, smooth, and well demarcated.

Picture 1.
Right submandibular lymph nodes with soft consistency were palpable on the extra-oral examination.

Intraorally no pathological findings on the oral mucosa were found. Artificial crowns were found on the teeth 16, 15, 25, 26. Bridge on abutment teeth 43-47 and teeth roots 27, 48, 34 which were decayed on probing, pain free on palpation and percussion.

Laboratory tests were undertaken to confirm the definite diagnosis.

Panoramic radiograph revealed root canal treatment on teeth 15, 25, 27, 34, 43, 47.

Periapical lesions were observed on teeth 34, 43, 47, 48.

Local reactivity test - Electro skin testing of Gelen was performed.

Due to skin reaction for active focuses were suspected teeth 43, 47 and 48. Teeth 15, 27 and 34 were defined as potential focuses.

A test for bimetallism was found negative.

Teeth 27, 34, 43, 47, 48 were extracted.

Tooth 15 is due to root canal treatment.

Healing process was normal without any complications.

A week after the teeth was extracted the patient reported cessation of the hair loss. Month after treatment there were new hair grow observed.

3 months after dental treatment new hair growth was observed.
DISCUSSION:

Myriads of less or more serious local and systematic diseases are believed to originate from dental focal infection. Some of them are associated with serious disability of the patient, while others affect the appearance and additionally have a serious psychological impact. A case of oral focal infection is discussed.

ALOECA ARECTA (AA) usually appears on the head and face and has a great impact on the appearance and psyche of the afflicted individual. In many cases of AA the etiology factor is difficult to be revealed, and usually the standard treatment doesn’t lead to desired healing process.

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