ANDREWS PUSTULAR BACTERID CAUSED BY SENSITISATION TO HEAVY METALS IN DENTAL WORKS IN A PATIENT WITH SUSPECTED SYSTEMIC LUPUS ERYTHEMATOSUS CASE PRESENTATION

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Abstract: *Pustularr bacterid or palmar-plantar Andrews is precipitated by acute infections and is frequently discussed their relationship with psoriasis. Our case report has a clinical monotonous evolution, and healing of lesions occurred only after removal of all dental work containing palladium and mercury, which supports the intervention mechanisms of allergic sensibilization to heavy metals in the pathogenesis of the disease.*

Cuvinte cheie: *pustuloza palmo-plantară acută, evoluţie, patogeneză*

Rezumat: *Pustular bacterid Andrews sau pustuloza palmo-plantară acută este precipitată frecvent de infecţii şi este discutată relaţia ei cu psoriazisul. Cazul prezentat a avut o evoluţie trenantă, iar vindecarea leziunilor s-a produs numai după îndepărtarea tuturor lucrărilor dentare care conţineau paladiu şi mercur, fapt care susţine intervenţia mecanismelor de sensibilizare alergică faţă de metale grele în patogeneza bolii.*

CASE PRESENTATION

This is the case of a 40 year old patient, CG, under observation and ambulatory treatment in February 2007.

For two years prior to his medical appointment, the patient suffered from discrete and transitory arthralgies and swelling of his knee-joints and tibio-tarsals as well as pruriginous exanthematous lesions of the soles and palms; these were treated localIy and with corticotherapy, with no improvement as a result.

Further examinations, undertaken between 15.1.2007-30.1.2007 showed the following:

- The lymphocyte transformation test from blood heparinized to metals was positive to palladium (stimulation index 3.9) and to mercury (stimulation index 3.5). Stimulation index of over 3 shows cellular sensitivization, as it presupposes the existence of T lymphocytes, specific to an allergen activated in a quantity three times larger than normal. The test showed the existence of cellular sensitivisation in a type IV immunological reaction to palladium and to inorganic mercury. No sensitivisation to other metals tested was noticed (chromiun, cobalt, silver, tin, copper, gold, nickel, cadmium, ethyl-mercury, molybdenum, platinum). To avoid exposure to palladium, one has to consider gold jewellery, which frequently contains palladium. There is also the possibility of the presence of palladium in materials and jewellery used in piercing.
- Of heavy metals, increased concentrations of mercury (9.7 micrograms/l against an accepted value of under 2.7 micrograms/l) tin (8.7 micrograms/l against an accepted value of under 2 micrograms/l) and silver (14.2 micrograms/l against an accepted value of under 1.5 micrograms/l) were detected in the saliva; all these metals are part of dental fillings (amalgam).
- Anti-RNP-U1, anti-SM, anti-SS-A (Ro), anti SS-B (La), anti-Scl-70 and anti PM-1 antibodies were negative. Free T-4, cortisolemia (in serum), ferritin, ACTH and histaminemia (plasmatic) were normal. Folic acid had a suboptimal level (3.30mg/ml as against a normal level of over 6,80mg/ml). Vitamin B12 concentration was at the lower end of normal values (211mg/ml).
- The antistreptolysinic titre was normal, as was the level of the rheumatoid factor and TSH. Of immunoglobulins, IgA showed a slight increase (569mg/dl). Allergic sensitivisation tests were negative. Total IgE was in titre of 1841.2 UI/ml.
- HLA-B27 antigen was negative.
- The electrophoresis of serumal proteins was normal, as was proteinemia (7.49g/dl). The profile of antinuclear antibodies revealed the existence in slightly positive titre of double catenary anti-DNA antibodies (55.6 UI/ml, as against normal values of under 35-55 UI/ml). Furthermore, it presented a low level of intraerythrocitic magnesium (2.09 mmol/l, against normal values of 2.25-2.80 mmol/l) and an elevated titre of antistaphylolysinic antibodies (16 UI/ml against acceptable values of under 2 UI/ml). The number of leukocytes, hematocrit and leukocytic tin were normal.
- The presence of Helicobacter pylori was detected in the stool. The stool flora showed slightly elevated concentrations of beta-hemolytic streptococci (10^5 KbE/g, as against a maximum of 10^4 KbE/g) but still liminal.
- The pH of the stool was 7. The intestinal enviromental balance was of 0 points (no deviation from what is considered normal content).
- The antibiogram done on the vesicular fluid collected from the calcanean area showed the pressence of massive amounts of Staphylococcus aureus, sensitive to erythromiycin, fusidinic acid, lincomycin, nicene, cotrimoxazole, ofloxacin, sisomycin, nitrofuratoin, cerfalexin, cefadroxil, cefamandol, gentamycin,

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chloramphenicol, doxicyclin and resistent to tetracyclin, amoxilycin, ampicilin, polimixin, kanamycin, clindamycin, sulphate of neomycin, colistin, framitecin, paromomycin.

- Bichemical test detected a slight mixed dislipidemia (triglyceridemia 170 mg/dl, colesterolemia 212 mg/dl).
- Of the tested toxins there was found in the blood an increased concentration of p,p'-DDE (2.64 mg/l as against an accepted value of under 0.01 mg/l).
- The activity of glutation-S-transferase was slightly decreased (it was situated in the grey zone) 67.8% was against a normal value of over 70%.
- Tests of chemoluminiscence showed an increased production of free radicals in whole blood (524,064 / 600 sec. as against normal values of 200,000-350,000 / 600 sec.), but not in plasma. Antioxidative activity was low in plasma (2.6 inhibitory units, as against normal values of 4.6 inhibitory units). The redox potential was low, both in whole blood (-74.7 mV, as against acceptable values of -100 up to -120 mV) and in plasma (54.7 as against acceptable values -80 up to -100mV), a finding that indicated the presence of a strong oxidative stress.
- Diagnosis: Following the above investigations, the following diagnosis was established:
- Andrews Pustular bacterid. Gastritis with Helicobacter pylori. Under observation for systemic Lupus erythematosus. Hipomagnesimia. Deficit of folic acid. Increased titre of antistaphylolysinic antibodies. Oxidative stress (increased free radicals).
- Apical dental foci (34,36) Horizontal atrophy. Metallic heterogenity, locally and distantly.

Treatment

Externally

- Cleaning of teguments with pure urea (5%)
- Application of 5% ichthiol exicans paste on the hands
- Application of Tretinom 0,02% antihyperkeratosic ointment to the soles. Standard solution for relief from scratching.

Internally

- Gelovital (1g) 3x2 capsules/day for long term treatment Canotaben 1 x 1 capsules, 2 months
- Mg^{+} Vitamin E lxl capsules/2 months
- Subnitrate of bismuth 0,5 micrograms, 2xl capsules/day for 3 weeks
- Folic acid 5 mg 2xl tablets/day, 1 month
- Grunaf (1g) 2xl tablets/day, 10 days
- Taverpil lxl tablets/day, as needed
- Fyi 3x2 tablets/day

Dental treatment

- removal of bacterian plaque
- ablation of crown (tooth 3.6) of gaudent
- replacement of amalgam fillings with composite materials (teeth 4.7, 4.5, 1.7, 2.5, 2.7, 3.5, 3.7)
- all prosthetic replacements were done in ceramics, on Titanium support as well as two crown-radicular restaurations in Titanium
- apical resection tooth 3.4, premolarisation tooth 3.6

Recommended control tests: doble catenary anti-DNA antibodies, anti DNA ss antibodies two months after discharge. Treatment was adapted according to results obtained and the condition of the skin. Duration of naturopathic treatment was approximately one year.

Outcome: clinically it is favourable; patient repeats anti DNA antibodies test two months after being discharged. Result: 289,908 (201-300 weakly positive).

Disscution: Andrews Pustular Bacterid or acute palmo-plantar pustulosis is frequently triggered by infections; its association with psoriasis is also mentioned. In contrast to psoriasis pustulosa palmaris and plantaris, Andrews bactericid becomes manifest as isolated pustules with an erythematous rim, which do not destroy the ridged skin. Furthermore, there are no psoriatic stigmata (1). It is generally accepted that the prognosis is good and there are no indications for agressive therapy. However, the present case had a lenghthy evolution and the palmo-plantar lesions only healed after the patient's dental work, containing palladium and mercury, was removed. This argues for the involvement of allergic sensitisation mechanisms to heavy metals in the pathogenesis of the disease. Local dermatological and naturopathic treatment also had a certain role.

The discovery of the presence of double catenary anti-DNA antibodies is an important element in establishing the diagnosis of systemic lupus erythematosus, for these are highly specific signs for this disease. However, the pacient failed to satisfy, simultaneously or successively the minimal criteria necessary for a diagnosis of systemic lupus erythematosus. Only long term monitoring will allow us to establish a definit diagnosis as to the presence of this collagenous involvement. Of the accepted factors in systemic lupus erythematosus there are immunological and certain environmental factors. Environmental factors, acting on a genetic and hormonal background, predisposed to this disease, may upset the balance between immunity and tolerance with the appearance of autoimmune phenomena, materialised in the production of a wide range antibodies (2). We mentioned the fact that, although the literature mentions cases of systemic lupus erythematosus with the involvement of the oral cavity (desquamative gingival lesions), our patient failed to present such lesions.

Erythematous, atrophic and hyperkeratosic lesions of the oral cavity were also mentioned in cases of discoid lupus erythematosus (4). The asymptomatic evolution of this patient for over 15 months is proof that removing heavy metals from the oral cavity had a definitely benign effect on the patient.

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