

Premature alveolysis in top class athletes : proposals for prevention

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In 1976, during a comparative study of the bucco-dental state in subjects aged between 18 and 30 years through clinical examinations and panoramic X-rays, *Lamendin and Davidoci* discovered a level of premature alveolysis (mild and characteristic) significantly higher amongst top class athletes than amongst the rank and file. Unable to find any correlation between age, sex or sport practised, they concluded that a specificity could be linked to a high-performance group.

Following up their researches, the results in 1978 showed a level of alveolysis three times higher than normal. A study programme devoted to research into the etiology of these alveolyses was then drawn up.

The objective was to find out whether specific complementary factors existed amongst high-performance athletes which could be uncovered by the frequency of their recurrence. A list of possible hypotheses was then drawn up.

The subjects examined were divided into three risk groups (although comparable in age group) of 100 control subjects, 384 standard athletes, and 275 top class athletes, on whom were carried out :

- medical examinations (in particular on the digestive system) ;
- clinical bucco-dental examinations and panoramic X-rays to show up the phenomenon ;
- laboratory tests: urine (Ca, P, pH), blood (Ca, Na, K, Mg, urea, uric acid, glycemia) ;

- and finally, Cattel tests were carried out on 173 athletes of whom 45 were top **class** sportsmen, to show up degrees of anxiety.

It should be noted that no immunological or hormonal tests were carried out.

The results obtained amongst ordinary athletes were not developed as these appeared very closely comparable to those of the control group. On the other hand, only cases which showed bony resorption above 3 mm in relation to the amelocemental junctions, and confirmed by clinical examinations, were counted.

In regard to the notion of « premature », the authors referred to the classical average norms, which were confirmed by their examinations of a control group in identical investigative conditions. Furthermore, the hypothesis of premature juvenile alveolysis was discounted as the symptoms do not correspond with those observed.

Following a study of the pathogenesis and anatomopathology of alveolysis, the following etiological hypotheses specific to top class athletes were developed :

Hypothesis linked to a relationship with the intake of medication :

In fact, certain drugs used by athletes can lead to hyposalemia at buccal level. In particular, analgesics, amphetamines, ephedrine, appe-

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tite depressants, diuretics and psychotropes. Other drugs may produce hyperuricemia, e.g. corticoids, androgens, strychnine, vitamins B1 and B12. salicytes, auto-blood-transfusions.

Hypothesis linked to a relationship with the level of uric acid in the blood :

An athlete can acquire this hyperuricemia during the course of sports practice either through medication, as we have seen, or :

- an excessive extrinsic supply (in particular red meat and lipids) ;
- a deficient extrinsic supply (due to lack of water) ;
- through modifications in renal elimination (significant muscular effort can lead to a tubular disfunction).

Hypothesis linked to a relation with psychosomatic factors :

Competition can produce psychic conditions of apprehension and fear of losing in an athlete which have repercussions on the neuro-vegetative system and on the function of the different endocrine glands. Each athlete reacts differently to this state of stress, either by :

- a local reaction or vasoconstriction or bruxism ;
- an overall reaction (digestive problems) ;
- harmful personal habits (e.g. nibbling, taking medication, smoking).

Hypothesis linked to a relationship with an alimentary regime rich in glucides without the adaptation of buccal hygiene :

An athlete needs lots of energy for his sport. This is principally provided by his food. For immediate use, the diet will be rich in carbohy-

drates. To store energy, the diet will be rich in lipids. It is for this reason that the disjointed « Scandanavian » diet is much used. This diet has two phases : a lipo-protein (with L. 70 % : P. 20 % ;G. 10 % and a carbohydrate (with G: 76 % ;P. 17 % ;L. 7 %) .

Apart from dental problems linked to this exaggerated intake of sugar, the athlete may run the risk of diabetes.

Proposals for prevention have been made and their application involves the entire sporting environment. In particular, there is a need for odonto-stomatologists in medical teams and for greater information on the problems of dental hygiene, auto-medication and smoking.

Although no definitive conclusion can be drawn from these results at this stage in the programme of research, it does appear likely that these aspects of top class sports practice do have an influence on the etiology of these alveolyses, all the more so in view of the frequent occurrence of several etiological factors in the same subject.

On the other hand, this study has led to the emergence of other researches, particularly in regard to :

- smoking and sport ;
- anxiety amongst to class athletes ;
- the notion of the internal and external in sports practice ;
- modifications in vascularisation at periodontal level by thermo-couple methods ;
- and comparative epidemiological re-searches.

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