NEWS IN THE ETIOPATHOGENIC EROSIVE ARTHRITIS ILLNESS

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Abstract: *The arthrosis is a degenerative affection without systematic symptoms characterized by the degeneration of the articular cartilage and of the articular capsule with secondary modification of the subcondral cartilage bone and of the whole articulation which affects especially the articulation which are under great pressure due either to the excessive load of a normal articular surface or the normal load of the articular surface modified by different risk factors. From the anatomo-pathological point of view the arthrosis are morphopatologically characterized by degenerative regressive lesions of the hialin articular cartilage involving the subcondral synovial and the soft tissues.*

Cuvinte cheie: *artoza, mofopatologie, cartilaj articular*

Rezumat: *Artroza este o afectiune degenerativă, fară simptome sistemice, caracterizata prin degenerarea cartilajului articular si a capsulei articulare, cu modificari secundare ale osului subcondral si a intregii articulatii, ce afecteaza cu preponderenta articulatiile supuse la presiuni mari date fie de incarcarea excesiva a unei suprafețe articulare normale, fie de incarcarea normala a unei suprafete articulare modificată de diferiti factori de risc. Din punct de vedere anatomo-patologic artrozele se caracterizează morfopatologic prin leziuni regresive degenerative ale cartilajului hialin articular, cu interesarea osului subcondral, sinovialei și țesuturilor moi.*

SCIENTIFIC ARTICLE OF BIBLIOGRAPHIC SYNTHESIS

The arthrosis is the most frequent articular illness which does not limit the hope for life but affects the quality of life because of the temporary incapacity of work that is created and loads the social economical costs. In conclusion, though many of the pathological and pathogenical aspects were elucidated, more studies are necessary which will improve the success of the pathogenical therapy.

Eroziv ostearthrosis

It is a form of primary (incipient) osteoarthrisis which is marked by strong inflammation witn erozive anomalies and some cases of bony anchylose. The illness appears especially in women at menopause and can be heredetarian. It's typically bilaterally and symmetrically and appears between distal phalanges. Patients can rarely have erozive osteoarthrisis at the first metacarpian bone on the foot. The erosions are localized centrally through X rays versus the rheumatoid arthrisis which is marginal. The osteophytes are present. The tumefaction of the soft tissue and the bones fusion will limitates the articulary movements.(2)

Pathogenical aspects in cases of arthrosis

From the anatomopathological point of view the arthrosis (degenerative rheumatism osteoarthritis or deformed arthritis) are characterized from the morfopathological point of view as degenerative regressive injuries of the articular hyaline cartilage in view of the subchondral bone, synovial and soft tissues. In cases of arthrosis the methabolism depressed, the process of degradation surpasses the biosinthesis It results a thin cartilage which loses its homogeneity and becomes fragile and result ulcerations and fissures .The progress of the etiological conditions makes the fissures more accentuated and the volume of the articular cartilage to diminish. The breaking of the cartilage is also possible in the articular cavity in small fragments. After that a proliferative reaction of the cartilage, the osteophytes follow the pathological process.(5) The usage of the cartilage leads to the denudation of the subjacent bone which becomes the home of a sclerosis process. This bone condensation is more obvious in the points of the maximal mechanical effort. In the area that is not sollicitated osteoporosis appears. During the arthrosis process the articulation surface becomes gradually deformed and non homogeneous and thus it exposes the synovial tissues to mechanical lesions followed by fibrosis progressive hyalinization which has as effect of the diminishing of the vascularizationo f the synovial.(3)

Pathogenesis

The normal articular surface of the synovial joint consists of hyaline cartilage made of chondrocytes surrounded by extracellular matrix (womb) which includes different macromolecules the most important being proteoglycanes and collagen. The cartilage protects the subchondral bone by the distribution of the mechanical load keeping the limited contact and the reduction of the joint friction.(1) A variety of factors especially age lead to the primary arthritis development although the primary and secondary arthritis are not separable as a pathological bases. Most researchers think that the degenerative alternations begin in the articular cartilage as a result of the excessive mechanical load of the healthy bone pr a normal load of a sick articulation. The external forces speeds up the catabolical effects of the condrocite and interrupt the cartilaginous matrix (womb).The enzymatic destruction increases the degradation of the cartilage associated with the diminishing of the proteglycanes and the synthesis of the collagen. The modification of the proteglycanes makes the cartilage less resistant to the compressive forces of the

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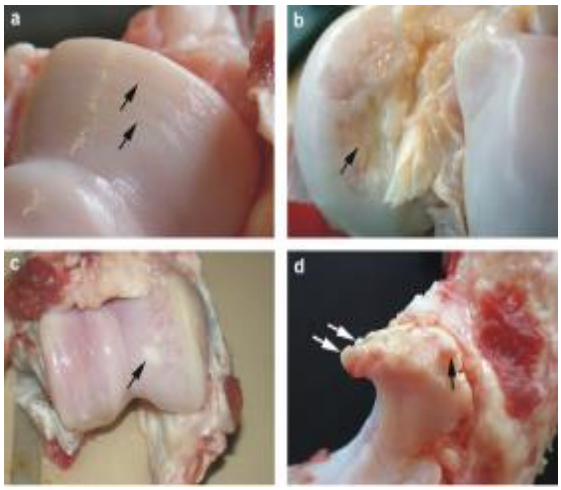
articulation and more susceptible to stress. The traumatized subchondral bone suffers the cystical degeneration through the secondary bone necrosis of the chronical impact or the intrusion of the synovial liquid. In the zones without pressures of the articular edges the vascularization of the marrow of the bone the metaplasia of the bone of the synovial conjuctiv tissue and the bonification of the cartilage protrusion lead to the formation of osteophit. Their fragmentation or that of the cartilage leads to the formation of the intra-articular stranger corps.(7)

Figure no. 1. Macroscopical joint lesions. a: Cartilage erosion (arrows) on the medial humeral condyle. b: Cartilage ulceration (arrow) on the medial femoral condyle. c: Cartilage repair (arrow) of the medial femoral condyle d: Marginal osteophytes (arrows) on processus anconeus of ulna.



The main mechanism involved in the process of arthrosis is:

A. The degradation of the cartilage process by the actions of the enzyms which acts prevalently in a proteolitic way on the consistents proteolitic and collagen. The proteolitic enzyms are of chondrocytes origin polymorphonuclear (catepsine and elastase) and from synovial membrane cells (collagenase and metalloproteinase).The degradation of the cartilagein cases of arthrosis is a very complicated and incompletetly determined yet.The main role in the degradation of the cartilage matrix it has the condrocyte which it is the disturbation of the balance between the anabolic and catabolic activity with the consecutive depletion of the proteoglicans and the weakening of the fibrilar trama (Freeman□′s theory- the methabolism of the proteoglicans is more intense than that of the collagen, so their resistantance is less at the similar usage cycles the outcome being the proteoglicans depletion) (4,6)

B. The biochemical degradation of the articular cartilage irrespective of the causes and the ways of occurances involves modification of its mechanical properties and especially determines the diminish of the amortization action to what the subcondral bone is forced to.This happens in the areas that are forced the consequences being suffered by the subcondral bone which will evoluate towards a condensation and sklerosis process its result being the increase of its resistance, but not its elasticity. The subchondral cartilage will be between the subchondral bone of a big hardness and the mechanical solicitation the situation that accelerates the destruction of the cartilage in the interested areas determining the diminishing of the ability of the distribution of the forces the increases of the neighbouring cartilage load and the progression of the process in the initial unimportant areas.(4,6)

C.The biochemical alterations of articular cartilage, regardless of cause and manner of occurrence, involves modification of its mechanical properties - in particular to diminish the mechanical damping action of the subchondral bone.This occurs in areas subject to requests, with consequences on bone subchondral will evolve towards a process of condensation and sclerosis, resulting in increased resistance to damage its elasticity. Articular cartilage between bone subchondral will be increased hardness and mechanical stress, which is accelerating cartilage destruction in the areas concerned, resulting in slowing the ability to distribute applications, with increasing loads and progression of cartilage adjacent to the original process is non even in areas.

D. The contribution of the inflammatory reaction of the sinovial

The weathering of the articular cartilage involves the pouring in the articular cavity of fragments and cellular remainings which cause an inflamatory reaction of the synovial memebrane. The sinovite contributes on its turn to the arthrosis process evolution through the proteolytic enzymes and mediators (catabolines) which relight the inflamatory and degenarative processes of articulation.(3)

E. The regrresive process of the articular cartilage have their oponent attempt of repair through the so called condroplatic modulation of the condrocyte. The repair attempt of the degenerate cartilage in case of the increased articular stress is frequently a failure. In this case there is an articular lesion progress to a complete structural desorganization and the postponing of the articulation′s functions interested in the arthrosis.

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