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Subcondral Geoda – Case Report: Occupational Medicine Approach

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Abstract: ***Subchondral cyst or geode is lytic lesion in the periarticular surface and usually they are associated with many artropathies and synovial-based processes. Nevertheless there are some exception cases without any arthopathy disease relationship and can occur on the labour age. Misdiagnosticaded or radiologic finding is usual and subchondral cyst can produced musculoesqueletical limitation and reduced the labour activities. The differential diagnosis and revaluation of the labour function are need to contribute for the treatment. And the occupational medicine view is important. The authors present a case report of a 35-year-old, sportiest and nurse woman who worked on the internal medicine department with an important ergonomic risk for 8 years. On the occupational medicine appointment she complained of musculoesqueletical lesions. She presented right hip pain of variable intensity limiting the movement with 9 months of evolution. Imagology study showed micro geodes subchondral in the anterior right acetabular slope and micro-islet of enostosis in the posterior slope of the left iliac. Until then she had been healthy and there were any familiar diseases. Hyaluronic acid, collagen and others supplements treatment, orthopaedic and physiotherapy evaluation were attempted. She was advised to do some specifically exercises also but were necessary to revaluation of labour activities. Avoiding loads over 2 kg, reducing repetitive movements, giving preference to functions that require less foot movement, specific physical exercises within your working hours have been advised and it was necessary change the workplace with improvement. This case demonstrates that subchondral cyst can be present like a rare clinical manifestations and can be easily misdiagnosis. Occupational medicine is often the first line of medical attention and it intervention is much important for the effective treatment for the chronic disease and the workplace reallocation can be necessary.***

Keywords: Occupational medicine, workplace reallocation, geode or subchondral cyst,

1. Introduction

Subchondral cyst or geode is lytic lesion in the periarticular surface and usually they are associated with many arthropathies and synovial-based processes.

There some theory to explain the pathological process but all of them have relationship with the ostheoartrithis or musculoskeletical chronic disease. Synovial fluid intrusion, bone contusion theory are the main.

Synovial fluid intrusion theory propose that elevated intra-articular pressure forces joint fluid into the subchondral bone via fissured or ulcerated cartilage and promove the cyst formation [1, 2] and bone contusion theory propose that subchondral cysts are a consequence of traumatic bone necrosis following impact of two opposing articular surfaces [3, 4]. Then the cyst can promove edema and inflammation or necrosis areas [5].

For the single subchondral cyst, a rare nosology entity there is no scientific consents about the aetiology [6] or physiopathology and subchondral cyst is underdiagnosed.

Magnetic resonance imaging (MRI) came to help to early detection. MRI is more sensitive than x-ray for the small subchondral cyts and it allows the detection of small lesions, well-defined rounded areas of fluid –like signal intensity on nonenhanced imaging [7, 8]. Indeed with the new tecnics, high-resolution peripheral quantitative CT (HR-Pqct) in three-dimension analysis allows to understood subchondral cyst at the micro-structural level and their relationships with the cartilage attrition and subchondral bone microstructure 6.

Usually the clinical features of geode is limitation for the movement without painful and in young ages it can go unnoticed.
Radiological features are geodes into the large and distal zone bone and for the chronic and degenerative pathologies there are others signs such as osteophyte presence, decreased interauricular space and osteolytic zones.

We report a micro geode patient, nurse in the internal medicine department, without any previous musculoskeletal disease in a young age with right hip pain of variable intensity limiting the movement with 9 months of evolution. Imagology study showed micro geodes subchondral in the anterior right acetabular slope and micro-islet of enostosis in the posterior slope of the left iliac. No loosening was advised a prevention movements, and she needs work allocation and we continue follow-up.

2. Case Report

We present the case of a 35-year-old sportiest and nurse woman without any pathological or toxic history and she

worked on the Internal Medicine Department in a central hospital for 8 years. Diarly she realized a several nurses activities such administration drugs, offer bath and change the patient, some of them partial or totally dependents increasing the ergonomic risk that she was exposed. She did physical exercise such as running during 3 years.

On the occupational medicine appointment, she presented a right pain hip withmechanics characteristic, variable and persistent intensity on the time with 9 months evaluation, and limiting to the normal movements. She denied trauma. She needs a short 3 sick leaves during these 9 months by the pain and movement limitation. Physical examination showed local pain in the right hip with irradiation to the lateral face thigh and inguinal zone. Positive Conflict Testing.After excluded the vitamin D and magnesium deficiencies and hyperparathyroidism syndrome we directed her to the evaluation of orthopaedic and physiatrist specialty and prescribed a computer tomography scan (TC). It identified subchondralmicro geodes on the anterior slope of the right acetabulum, right and left hip, without radiological changes on the coxofemorals, sacroiliacs or public symphysis articulations or lytic or sclerotic lesions (**Fig 1**).

Magnetic resonance scan presented discrete degenerative lesions on the pubic symphysis with enlargement of the articulation without edema, liquid or inflamatory process. There were pathological changes in the muscular *rectus femoris*, iliopsoas, abdominal musculature or adultererperi-symphysis mass.

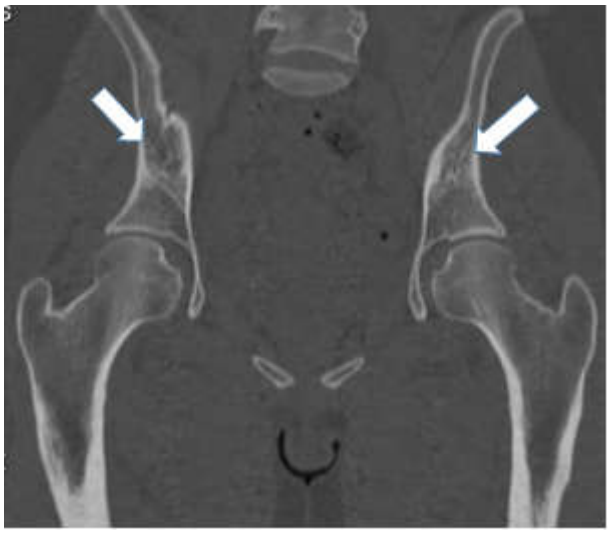

Figure 1: TC in bone view

White arrow: subchondral micro geodes on the anterior slope of the right acetabulum right and left hip.

The treatment was some hyaluronic acid infiltration, collagen and magnesium supplementations and she was advised to do some specifically exercises to strengthskeletal muscle system. She stopped to do physical exercise but she continued to do the same labour activities by personal autonomy. Over the days she continued the same clinical complaints and she needs to sick leave for 4 days and she experienced an improvement. It was then she came back again on the occupational medicine appointment and we did a specifically limitations evaluation.

Avoiding loads over 2 kg, reducing repetitive movements, giving preference to functions that require less foot movement, specific physical exercises within your working hours have been advised. This way it was difficult to continued working on the internal medicine department and she offered to workplace reallocation by external appointment. There she does not to move the dependent patients or carry weigh or running all the working time. She has a chronic disease and she need some times to do a specifically exercise even during the labour time. She has been improved and followed by occupational medicine.

3. Discussion

Although geode is usually associated with musculoskeletal pathology as an arthritis in old-ages, it can happen like a single pathology in young and working ages.

Occupational medicine, a preventive care medicine need do an early diagnosis, reduce the natural course of geode disease and advise about the possible work activities' and quality of life's limitations [9, 10]. It is important also doing the follow-up. Itis important to point out that the normal course of geode could reduce the quality of life, productivity and increased the labor absenteeism.

Thus, this nosological entity, which usually was unnoticed and underdiagnosed, should not be devalued. It must be well studied and supported by a multidisciplinary team where occupational medicine plays a fundamental role. The fact that patient does a regular sport activity and in a young age could have been a confusion factor for the musculoskeletal complaints also. They, musculoskeletal complaints, could goes undetected in the medicine appointment.

Usually, geode does not present pain but there are exceptions. So, the individualization must not be forgotten.Knowledge of musculoskeletal functioning where vitamin D, magnesium and other hormones [11, 12] play a crucial role in the process of muscle contraction-relaxation [13] often was mimicked in certain musculoskeletal pathologies or syndrome should be held by occupational medicine and discarded as possible others diagnoses.

Similarly, knowledge of risk factors, treatment, the natural course of disease and the implicationsdiarly work and personal's activities are very relevant to in an early detection propose changes in the workplace or some conditionalism needs for the health, safe and work activity's healthcare patient [14].

Subsequent follow-up and treatment by occupational medicine becomes indispensable for the therapeutic success and quality of life that chronic diseases can cause, especially at young ages and in progress's careers. Occupational medicine needs to work as a team so that health promotion in the workplace becomes a reality.

4. Conclusion

Geode is an uncommon disease, usually associated with chronic musculoskeletal and chronic degenerative disease, which usually occurs at more advanced ages.

However this can occur in working ages and limit the quality of life and work activity so the intervention of occupational medicine is fundamental [15].

The authors emphasize the importance of the intervention of occupational medicine in the early detection of chronic and limiting symptoms and pathologies in the quality of life and limit work activities.

The knowledge of the risk factors, natural evolution of the disease and differential diagnoses should be known to the professionals who carry out occupational medicine.

Work readjustment and changes in daily work tasks may be necessary and occupational medicine must be followed all the clinical process and ensure the health promotion in the workplace.

5. Interest Conflict

The authors declare any interest conflict.

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