



Case Report

Is Gonarthrosis always the Cause of Knee Pain in the Elderly?

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Abstract

The knee is a key joint that can withstand significant loads during daily activities. Problems such as osteoarthritis, ligament and meniscus injuries are common causes of chronic pain and knee function limitations. However, benign tumors such as gigantocellular tumor (GCT) are rarely considered as possible causes of these symptoms, especially in elderly patients. Diagnosis of GCT requires a thorough clinical examination and imaging diagnostic procedures such as X-rays, MRI and skeletal scintigraphy. In this case, a patient with chronic knee pain underwent various diagnostic tests, which finally revealed the presence of a gigantocellular tumor. The multidisciplinary approach, which involves collaboration between general practitioners, radiologists, nuclear medicine and orthopedists, is essential for accurate diagnosis and selection of the optimal therapeutic approach. Surgical treatment is often recommended for the removal of GCT, with monitoring and support during the recovery process. It is important to take into account the patient's age and general health when planning therapy, in order to ensure the best possible care and reduce the risks of complications. This case highlights the importance of considering various possible diagnoses when treating patients with chronic knee pain, especially in the elderly, in order to provide appropriate diagnosis and therapy.

Keywords: knee pain, gigantocellular tumor, old patients, family doctor

Introduction

The knee has the largest joint area of all joints. Depending on the activity, this weight-bearing joint can withstand two to five times a person's body weight. The complex interaction of these structures allows the knee to withstand enormous forces during various normal movements. Knee damage is a common physical problem that affects the normal life and mental health of these patients. Chronic knee pain affects 25 percent of adults and has a detrimental effect on daily function and quality of life [1]. According to pathogenesis, knee disorders can mainly be divided into musculoskeletal and neurological disorders. In the former, the pathogenesis is inside the knee joint, but the nervous control system of these patients is normal. Knee osteoarthritis (KOA), knee ligament injury, and meniscus injuries are the most common forms of these disorders [2,3]. Osteoarthritis is a degenerative rheumatic disease of peripheral joints. Any wrist can be protected

by OA, and the most commonly protected joint is the knee joint, the chatrose (lat. Gonarthrosis). The incidence of chtotroses is 3.6% of the total population which is about 250 million people. This disease, associated with significant morbidity, cost and disability, is the sixth leading cause of disability worldwide [4]. It is from the above that the most common entity differential diagnostic when we think, in older patients especially women, of osteoarthritis. What we rarely think of is giant cell tumor (GCT), which is one of the most common benign bone tumors. GCT represents 4% to 10% of all primary bone tumors and 15% to 20% of benign bone tumors, with preferences for young adults. Approximately half of these tumors occur in individuals during their third and fourth decades of life, and a rarity has been observed in over-50s. The incidence of occurrence relative to gender is that the ratio of women to men is between 1.3 and 1.5 to 1, and the incidence is higher among the Asian population. Than in western populations. Among the reported cases, 44% are located around the knee joint, 10% in distal radius, 6% in proximal humerus and 13% in the hands and feet [5-8]. Manifested by painless or occasionally painful swelling in the affected area. Pain is the most common

symptom, often due to mechanical insufficiency resulting from bone destruction. [6] Diagnosis of GCT involves a combination of clinical examination, laboratory and imaging examinations (radiographic imaging, magnetic resonance imaging, scintigraphy) [9,10]. Physical examination shows pain: the most common symptom, often due to mechanical insufficiency resulting from bone destruction. Swelling and deformity: Associated with more extensive lesions. Mass or protrusion of soft tissue: occasionally and is the result of cortex destruction and tumor progression outside the bone, usually located near the joint. A limited range of motion in the wrist area is expected. Pathological fractures: approximately 12% of patients have fractures when making a diagnosis. The incidence of pathological fractures at the time of presentation is 11% to 37%, indicating a potentially more aggressive disease with a higher risk of local recurrence and spread of metastases [5,10]. A radiographic examination usually reveals a characteristic radiolucent geographical appearance with a narrow transition zone at the edge of the lesion. Imaging modalities such as computed tomography (CT) and magnetic resonance imaging (MRI) can confirm the typical subchondral location of GCT inside the bone. MRI is a key tool for assessing the integrity of surrounding soft tissues, neurovascular structures, and the extent of subchondral expansion into adjacent joints [10,11].

Case report

A 72-year-old patient reports for a check-up at the general practise office, a course of standard examination, complains of pain in both knees as she has been navoid problems for almost 1.5 years. She did not report earlier because she is moving hard because of the pain and as she states, she was not like most patients during the COVID 19 pandemic and the state of emergency in the Republic of Serbia and difficult diagnostics, and she took painkillers herself because she has knee problems from earlier, which is noticeable in the medical records because she repeatedly went to the physiatrist for knee go arthrosis, which was then diagnostic and Verified. At the physical examination, the patient pales, feeling weak and weak, afebrile. Blood pressure 130/80 mmHG, ECG sf 76, nomogram, no signs of ischemia and myocardial lesions. During auscultation, vesicular breathing is heard, without accompanying pathological phenomena, discreetly weakened at the lower parties of the lungs. Renal lodges and abdomen painless to success and palpation. When examining the extremities, both knees of the joint are gonarthrotically altered, with an increase in circumference, without redness, when moving the present crepitation, but when standing up and trying to walk, the pain intensifies in the left knee joint, which is painful both on movement and touch. Neurological finding scanned when examining cranial nerves, Romberg's test neat, finger-heel movements poorly performed due to knee pain. The patient is then referred for laboratory analysis and x-ray examination of both knees.

Analysis of basic laboratory tests shows signs of anemic and accelerated sedimentation rate 18 mm/h, erythrocytes 3.48 10E12/l, Hgb 108 g/l, CRP 9.8 mg/l. The patient also has numerous comorbidities of the type of primary hyperparathyroidism, chronic

renal failure of the fourth stage, osteoporosis, hypertonic for many years, smoker for more than 30 years.

When examining X-rays, one notices the right: gonarthrosis gr III with calcified meniscus, left: proximal tibia as a whole with a fleshy change, cliff and sclerotic component, sclerotic edges limited to bone, which affects the immediate TF joint, there is no periosteal reaction ddg GCT , change of chondroside origin (Figures 1 and 2).



Figure 1: X-ray scans of both knees. Description right knee: gonarthrosis gr III with calcified meniscus



Figure 2: X-ray scans of both knees. Description left knee: proximate tibia overture as a whole with a mixed change, cliff and sclerotic component, sclerotic edges limited to the bone, which also affects the medial tf glob, no periosteal reaction sdg gct, change of chondroide origin

Due to the observed change in the X-ray, the patient is referred to an MRI diagnostic examination and then to the consultation of an orthopedist. When examining the magnetic resonance imaging of the knee, an expansive tumor formation of the proximal pineal gland, metaphysis and proximal metaphysis-diaphysis junction of the tibia is observed, in the metaphysis zone the full structure of the medullary bone with cortical in involving, proximally involved dominantly lateral condyle with less sparing in posterior aspects, partially involved medial condyl of the tibia partially spared anterior, more posteromed, a change composed of multiple lobulated small and larger spaces, clearly demarcated according to the normal bone structure by reactive marginal sclerosis, perifocal without bone sink edema, heterogeneous structures, post contrast dominant marginal and septal amplification of signal intensity, smaller lobulated spaces with homogeneous post contrast reinforcement; in the lateral condyle zone intra-articular extension, impaired articular cartilage of the tibia plateau with consequence of depression by about 2-3mm, additional extension extraosseal, in the zone of proximal pineal and part lymphysis lateral marginally as well as anterior in the segment of tuberositas is tibia to distal, partly involved in the annexation of the ligament of the patella, which with smaller edema in the annexation zone, the maximum dimensions of change are about 6.3 x 6.2 x 7.8cm (apxllkk); 2. Additionally differentiated separate focal change of the same mr characteristics in the patella parasagittally lateral in the region of the patella tip, clearly limited formation perifocal without edema, 10 x 8 x 9 mm. The described changes could correspond to a gigantocellular tumor, no other genesis of the change can be extracted, given.

Given the age of the patient and multifocal multicompartmal localization, additional evaluation is indicated, and the patient is referred to additional diagnostics in terms of skeletal scintigraphy.

The patient is then referred to scintigraphy where a larger field of pathological hyperfixation of radiopharmaceuticals in the proximal part of the left lower leg is observed on the extremities, with the separation of the focus of increased accumulation into the projection of the left patella. Also stands out the field of pathologically increased accumulation of activity in the area of the right knee joint. Diffusely easily increased accumulation of radiopharmaceuticals in the diaphragm and proximal edge of the right femur with an outgrown focal field in the area of the large trochanter of the right femur. Fields of increased accumulation of activity in both shoulder joints are observed, sternoclavicular hand, narrow and small joints of the hands and feet, changes are possible detonative / inflammatory etiology. Scintigraphically observed greater field of pathologically enhanced osteoblast activity in the area of proximal diaphysis of the left lower leg as well as the focus in the projection of the left patella are correlated with the attached MRI finding suspected of GCT. However, in the rest of the skeleton, multiple changes were made in the mentioned bones of the pelvic girdle, the large trochanter of the right femur of the large trochanter as well as the right knee joint, the etiology of which cannot be talked about with certainty (Figure 3).

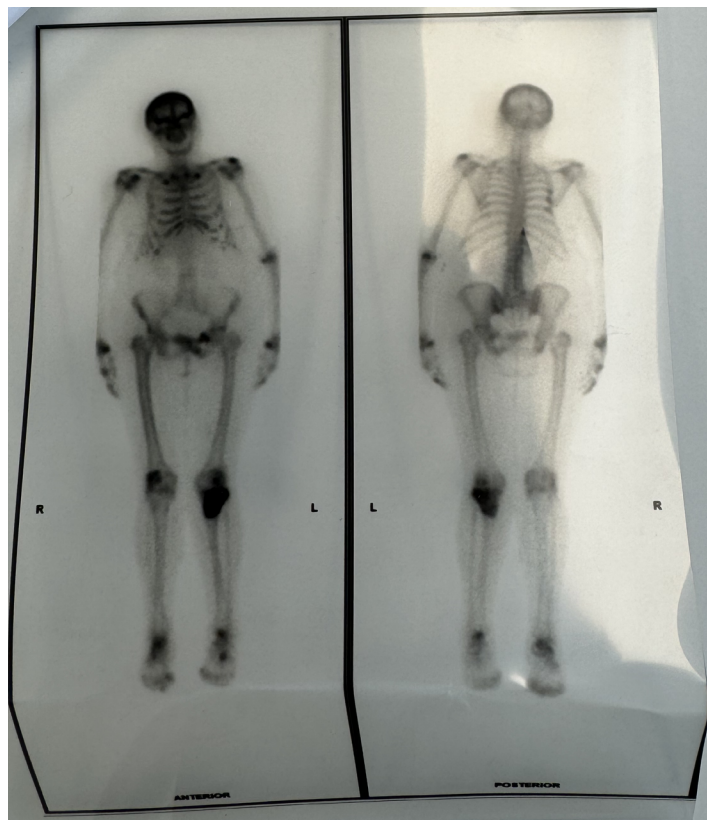


Figure 3: Scintigraphy of the skeleton of the whole body in ap and so prection would spect the bones of the pelvis. **Description:** Scintigraphically observed larger field of pathologically enhanced osteoblast activity in the area of proximal diaphysis of the left lower leg as well as the focus in the projection of the left patella are correlated with the attached Mr. Finding suspected gct. However, in the rest of the skeleton, multiple changes were made in the mentioned bones of the pelvic girdle, the large trochanter of the right femur of the large trochanter as well as the right knee joint, the etiology of which cannot be spoken with certainty.

After the diagnostics, the patient is referred to an orthopedist examination. The orthopedist, after examining the patient and findings, concludes very likely that it is a gigantic cell tumor and suggests surgical treatment.

Discussion

A 72-year-old patient is a complex medical case with multiple health problems. The main symptom that led to a visit to the doctor is pain in both knees, which have been present for almost 1.5 years. The patient did not seek medical help earlier due to mobility difficulties and pain, partly due to pandemic conditions during the COVID-19 state of emergency in the Republic of Serbia, which made access to health institutions more difficult. At the examination in the general practise, the patient shows symptoms of malaise and weakness, but is afebrile. Examinations such as ECG, lung

auscultation, abdominal examination and neurological examination are normal, while when examining the extremities, gonarthrosis of both knees is observed, with increased pain on movements and touch, especially in the left knee. These findings indicate a possible complication or progression of previously diagnosed gonarthrosis. X-rays of the knee show significant changes in bone structure, with the affected part of the tibia and meniscus, especially with a pronounced change on the left side suggesting the presence of a tumor. MRI diagnostics confirm the presence of tumor formation in the proximal part of the tibia, with multiple lobulated spaces and amplification of signal intensity, which further confirms the suspicion of a gigantocellular tumor. Skeletal scintigraphy further confirms the pathological hyperfixation of radiopharmaceuticals in the tibia, patella and other joints, indicating multiple localization of the tumor. The final diagnosis and therapeutic approach require a multidisciplinary approach. Consultation with an orthopedist after performing diagnostic procedures confirms the probability of gigantocellular tumor and suggests surgical treatment as the optimal therapy. This shows the importance of cooperation between general practice, radiology, nuclear medicine and orthopedics in order to make an accurate diagnosis and determine the appropriate therapeutic approach. In this case, it is important to keep in mind the age of the patient, as well as her general medical status, when planning therapy. It is also important to monitor the patient after surgical treatment to assess recovery and possible complications. A multidisciplinary approach and continuous support from the medical team are key to providing optimal care and treatment of such complex cases.

Conclusion

The knee is one of the most important joints in the human body, with the ability to withstand significant forces during various activities. Problems that occur in the knee, such as osteoarthritis, injuries of the ligaments and meniscus, are common causes of chronic pain and functional limitations. However, it is rare to think of a benign tumor as a possible cause of these symptoms, especially in elderly patients. Gigantocellular tumor (GCT) is one of the most common benign bone tumors, often occurring near the joints, including the knee. It manifests itself with swelling and pain, with the potential for destruction of bones and surrounding tissues. Diagnosis of GCT requires a combination of clinical examination and imaging diagnostic methods such as X-rays, MRI and skeletal scintigraphy. In this case, a patient with chronic knee pain underwent various diagnostic procedures, which finally revealed the presence of a gigantocellular tumor. A multidisciplinary approach, including collaboration between general practitioners, radiologists, nuclear medicine and orthopedists, is key to making an accurate diagnosis and choosing the optimal therapeutic approach. Surgical treatment is often recommended for the removal of GCT, with monitoring and support during the recovery process. It is important to consider the patient's age and general health when planning therapy,

in order to ensure the best possible care and reduce the risk of complications. This case indicates the importance of considering differential diagnostic options when treating patients with chronic knee pain, especially in the elderly, in order to provide adequate diagnosis and therapy.

Disclosures

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