

Learning objectives

- To recognize different types of arthritis.
- To understand the importance of closer follow up and treatment limitations in erosive osteoarthritis.

Introduction

Erosive osteoarthritis is a fairly uncommon form of osteoarthritis in the general population. It is usually seen in the proximal and distal interphalangeal joints of patients; and while it is seen in only 2-3% of the general population¹, its prevalence can be almost up to 10% in patients with symptomatic arthritis². Therefore, it goes without saying that its effects on the quality of life for these patients can be debilitating.

Erosive osteoarthritis can result in severe deformities of the small hand joints which include subluxation of the joints, deviation of joint lines and eventually joint instability, resulting in pain and decreased function.

However, spontaneous tendon rupture from severe erosive osteoarthritis is rarely seen.



Figure 1. X-ray findings in erosive osteoarthritis.

Case Presentation

This is a case of an 88 year old Caucasian female with a past medical history of HTN, Osteopenia and pre-existing bilateral hand joint deformities from erosive osteoarthritis who comes in for spontaneous right fourth finger drop.

X ray done the same day revealed no fracture. MRI of the hand was done that showed an acute disruption of the extensor mechanism of the extensor digitorum tendon of the ring finger at the level of the proximal interphalangeal joint with retraction of tendon to the level mid fourth metacarpal in the setting of chronic erosive osteoarthritis.

Patient was evaluated by orthopedics surgery and subsequently underwent a tendon transfer and a tenosynovectomy with recovery of baseline finger function eventually. She was offered an inflammatory arthritis workup and a referral to rheumatology specialists but patient refused.

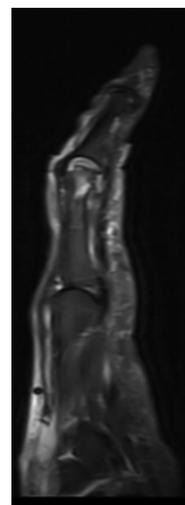


Figure 2a : Sagittal FS T2 weighted image of the fourth digit demonstrates edema in the proximal interphalangeal joint, edema in the subjacent bone marrow and edema along the soft tissues of the dorsum aspect of the PIP joint.

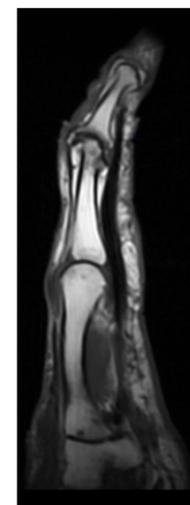


Figure 2b. Sagittal T1 weighted image of the fourth digit demonstrates edema along the distal aspect of the proximal phalanx.

Discussion

Erosive osteoarthritis is generally thought to be a subset of generalized osteoarthritis. Osteoarthritis in itself is classified by the American College of Rheumatology.

Discussion

Table 1. Classification criteria for OA of the hand³.

1. Hand pain, aching, or stiffness AND
2. Hard tissue enlargement of 2 or more of 10 selected joints. AND
3. Fewer than 3 swollen MCP joints. AND EITHER
4a. Hard tissue enlargement of 2 or more DIP joints. OR
4b. Deformity of 2 or more of 10 selected joints.

Erosive Osteoarthritis on the other hand is commonly diagnosed with the characteristic “gull wing” and “saw-tooth” deformities. However, there is a lack of definitive diagnostic criteria. A systematic review⁴ in 2018 showed variability in the extent of radiographic findings when it came to diagnosis of erosive osteoarthritis in articles published in journals.

Differential diagnoses always include rheumatoid and psoriatic arthritis⁵ and it may be prudent to try to rule out these disease processes in younger patients who present with erosive changes in their bones.

Moreover, there is no standard practice for treating erosive osteoarthritis. Treatment options are limited to anti-inflammatory therapies which, in the long term, have undesirable side effects, especially in the elderly.

There have been small scale trials that have showed medications such as hydroxychloroquine may be beneficial⁵ in erosive arthritis but there have not been any significant randomized control trials to evaluate this.

Conclusions

There is limited data in the literature in regards to both diagnosis and treatment of this seemingly common form of arthritis. Clear diagnostic criteria needs to be defined in order to avoid confusion between other forms of inflammatory arthritis. More research and trials need to be performed to delineate better treatment options.

References

1. Marshall M, Nicholls E, Kwok WY, et al. Erosive osteoarthritis: a more severe form of radiographic hand osteoarthritis rather than a distinct entity?. *Ann Rheum Dis.* 2015;74(1):136-141. doi:10.1136/annrheumdis-2013-203948
2. Kwok WY, Kloppenburg M, Rosendaal FR, et al Erosive hand osteoarthritis: its prevalence and clinical impact in the general population and symptomatic hand osteoarthritis *Annals of the Rheumatic Diseases* 2011;70:1238-1242.
3. Altman R, Alarcon G, Appelrouth D, ET AL. The American college of rheumatology criteria for the classification and reporting of osteoarthritis of the hand. *J Arthritis and Rheumatism.* 1990;33 no. 11:1601-1610
4. Gazeley DJ, Yeturi S, Patel PJ, Rosenthal AK. Erosive osteoarthritis: A systematic analysis of definitions used in the literature. *Semin Arthritis Rheum.* 2017;46(4):395-403. doi:10.1016/j.semarthrit.2016.08.013
5. ULUSOY H, AKGÖL G, ACET GKARACA, KAYA A, KAMANLI A. Erosive Osteoarthritis: Presentation of a Treatment-Resistant Case. *Archives of Rheumatology.* <https://archivesofrheumatology.org/full-text/389>. Published January 1, 1970. Accessed May 16, 2021.