



Sociedad Española
de Reumatología -
Colegio Mexicano
de Reumatología

Reumatología Clínica

www.reumatologiaclinica.org



Images in Clinical Rheumatology

Gull-wing sign: A characteristic sign of erosive hand osteoarthritis

Signo de ala de gaviota: un signo característico de la osteoartritis erosiva de la mano

Sadettin Uslu

Department of Rheumatology, Ömer Halisdemir University Bor Physical Medicine and Rehabilitation, Training and Research Hospital, Niğde, Turkey



ARTICLE INFO

Article history:

Received 22 January 2021

Accepted 25 April 2021

Available online 18 May 2021

A 54-year-old woman presented with a 3-year history of pain and deformity of distal interphalangeal (DIP) joints in both hands. The pain was inflammatory in nature, with early morning stiffness of >1 h. The patient's personal and family past medical history was unremarkable. She had partial response to various nonsteroidal anti-inflammatory drugs (NSAIDs). Physical examination revealed tenderness, swelling and decreased range of motion in the DIP joints. Laboratory evaluation revealed high ESR (39; range, 0–20 mm/h) and CRP (18; range, 0–5 mg/L) levels, with negative RF, anti-CCP and ANA. Based on clinical and laboratory findings referred to an inflammatory type pain due to the presence of joint inflammation. X-ray of the hands documented typical features of erosive hand osteoarthritis (OA) in DIP joints such as joint space narrowing, subchondral sclerosis, marginal osteophytes and erosions in the central portion of the joint giving “gull-wing sign” (Fig. 1). The patient had a high level of pain (VAS = 75 mm). Treatment with prednisolone (10 mg/day) and methotrexate (10 mg/week) was initiated (patient consent form was obtained for treatment). Significant clinical improvement was observed on her pain (VAS = 20 mm) and morning stiffness (less than 5 min) within four weeks of the treatment. Additionally, ESR and CRP decreased to normal levels.

Hand OA is a subtype of OA that consists of several phenotypes, including interphalangeal (IP) OA, thumb base OA and erosive OA. The term “erosive OA” specifically relates to hand OA with erosions in the IP joints. Erosions on radiographs can be defined by

different scoring methods.¹ Erosive hand OA is often called “inflammatory and degenerative hand OA” condition of the IP joints, but the underlying mechanisms are currently unclear.² Clinical features attributed to erosive OA include an abrupt onset of severe hand pain with variable degrees of stiffness, erythema, swelling and limited function of the joints. No formal classification criteria exist to define erosive OA. Erosive OA is a radiographically defined phenotype characterised by erosions and central cortical collapse.³ The “gull-wing sign” describes the distal convex paracentral erosions with subchondral sclerosis and marginal osteophytes on radiograph. In a small cohort study, performed in erosive hand OA patients, it was reported that about 12.6% of the examined DIP joints had gull-wing deformity.⁴ The primary goal of managing hand OA is to control symptoms, such as pain and stiffness, and to optimise hand function. Optimal management of hand OA usually requires a multidisciplinary approach. The objectives of management are: (1) non-pharmacological modalities (education and training in ergonomic principles, exercise and orthoses); (2) pharmacological options (paracetamol, topical/oral NSAIDs, chondroitin sulfate); (3) surgery (trapeziectomy, arthrodesis or arthroplasty). Intra-articular injections of glucocorticoids should not generally be used in patients with hand OA, but may be considered in patients with painful IP joints.⁵ Also, the Hand Osteoarthritis Prednisolone Efficacy study showed the efficacy and safety of short-term prednisolone in patients with painful hand OA and synovial inflammation.⁶

Peer-review

Externally peer-reviewed.

E-mail address: sadoulu@gmail.com

<https://doi.org/10.1016/j.reuma.2021.04.009>

1699-258X/© 2021 Elsevier España, S.L.U. and Sociedad Española de Reumatología y Colegio Mexicano de Reumatología. All rights reserved.



Fig. 1. Hand radiograph showing gull-wing deformities in DIP joints.

Funding

The authors declared that this study has received no funding.

Conflict of interest

The authors have no conflict of interest to declare.

Informed consent

Informed consent was obtained from all individual participants included in the study.

References

- Altman RD, Gold GE. Atlas of individual radiographic features in osteoarthritis, revised. *Osteoarthritis Cartil.* 2007;15 Suppl. A:A1–56. <http://dx.doi.org/10.1016/j.joca.2006.11.009>.
- Haugen IK, Mathiessen A, Slatkowsky-Christensen B, Magnusson K, Bøyesen P, Sesseng S, et al. Synovitis and radiographic progression in non-erosive and erosive hand osteoarthritis: is erosive hand osteoarthritis a separate inflammatory phenotype? *Osteoarthritis Cartil.* 2016;24(April):647–54.
- Kloppenburg M, Maheu E, Kraus VB, Cicuttini F, Doherty M, Dreiser RL, et al. OARSI Hand Clinical Trial Recommendations Work Group. OARSI Clinical Trials Recommendations: design and conduct of clinical trials for hand osteoarthritis. *Osteoarthritis Cartil.* 2015;23(May):772–86.
- Addimanda O, Mancarella L, Dolzani P, Punzi L, Fioravanti A, Pignotti E, et al. Clinical and radiographic distribution of structural damage in erosive and nonerosive hand osteoarthritis. *Arthritis Care Res (Hoboken).* 2012;64(July):1046–53.
- Kloppenburg M, Kroon FP, Blanco FJ, Doherty M, Dziedzic KS, Greibrokk E, et al. 2018 update of the EULAR recommendations for the management of hand osteoarthritis. *Ann Rheum Dis.* 2019;78(January):16–24.
- Kroon FPB, Kortekaas MC, Boonen A, Böhringer S, Reijnen M, Rosendaal FR, et al. Results of a 6-week treatment with 10 mg prednisolone in patients with hand osteoarthritis (HOPE): a double-blind, randomised, placebo-controlled trial. *Lancet.* 2019;394(November):1993–2001.