

# Calcific peri-arthritis of the hand showing a variable disease course

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A 50-year-old woman presented with a 4-year history of intermittent swelling and progressive deformities of the hand joints. Serum rheumatoid factor and anti-citrullinated protein antibody tests showed negative results, and the C-reactive protein level was 0.11 mg/dL. Radiograph revealed joint space narrowing, erosions, and subchondral sclerosis involving several proximal interphalangeal (PIP) and distal interphalangeal (DIP) joints of both hands. Of note, we observed periarticular calcifications around the second DIP and PIP, third PIP, and third metacarpophalangeal (MCP) joints on the right and the second PIP joint on the left (thick arrows, Figure 1). Calcific peri-arthritis and concomitant erosive osteoarthritis were diagnosed and therapy was started with celecoxib. Her hand joint problem progressed and she was not able to flex the right second and third and the left second fingers. Intraarticular glucocorticoid injection was performed at the right second and third PIP and the left second PIP joints and hydroxychloroquine and diacerein were added, which were not effective in improving limitation of motion of the finger joints. She also complained of worsening pain and deformity of the left fourth DIP and PIP joints. Three years later, pain and swelling of the hand joints improved but deformities did not. Follow-up radiograph showed disappearance of all previously observed periarticular calcifications. The right second PIP and third MCP joints showed minimal disease progression (thin arrows, Figure 2). However, we observed ankyloses of the right second DIP and the left second PIP joints (thick arrows, Figure 2) and joint space loss with erosions of the

right third PIP joint (arrow head, Figure 2). Additionally, there were ankyloses of the left fourth and fifth DIP joints and severe erosions of the left fourth PIP joint, which had not been affected by calcific peri-arthritis in the initial radiograph.

Unlike our patient, most cases of calcific peri-arthritis of the hand joints are reported as acute presentations. It has been known to be a self-limiting condition with gradual resolution of periarticular calcium deposit over several weeks and treatment is mostly conservative [1-3]. However, recurrent cases may progress to erosive osteoarthritis [4,5]. Our patient showed a variable disease course of calcific peri-arthritis of the hand.



**Figure 1.** Initial radiograph. There are joint space narrowing, erosions, and subchondral sclerosis involving several PIP and DIP joints of both hands. Of note, periarticular calcifications were found around the second DIP and PIP, third PIP, and third MCP joints on the right and the second PIP joint on the left (thick arrows). PIP: proximal interphalangeal, DIP: distal interphalangeal, MCP: metacarpophalangeal.

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**Figure 2.** Follow-up radiograph. Three years later, all previously observed periarticular calcifications disappeared. The right second PIP and third MCP joints showed minimal disease progression (thin arrows). However, we observed ankyloses of the right second DIP and the left second PIP joints (thick arrows) and joint space loss with erosions of the right third PIP joint (arrow head). Additionally, there were ankyloses of the left fourth and fifth DIP joints and severe erosions of the left fourth PIP joint, which had not been affected by calcific peri-arthritis in the initial radiograph. PIP: proximal interphalangeal, MCP: metacarpophalangeal, DIP: distal interphalangeal.

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## CONFLICT OF INTEREST

No potential conflict of interest relevant to this article was reported.

## AUTHOR CONTRIBUTIONS

Study conception: K.S.P. Data collection: K.S.P. Writing- original draft: K.S.P. Writing-review and editing: S.M.J., Y.J.P., K.J.K.

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