Clinical and Experimental Rheumatology 1999; 17: 103-104.

Isolated tenosynovitis associated with psoriasis triggered by physical injury

A. Padula[1], F. Belsito[2], L. Barozzi[4], F. Cantini[5], C. Salvarani[1], P. Pavlica[4], I. Olivieri[3]

[1]Rheumatic Disease Unit, Arcispedale S. Maria Nuova, Reggio Emilia; [2]Department of Internal Medicine, Hospital of Faenza; [3]Rheumatic Disease Unit and the [4]Department of Diagnostic Radiology, S. Orsola-Malpighi Hospital, Bologna; [5]Rheumatic Disease Unit, Hospital of Prato, Italy.

Angela Padula, MD: Research Fellow; Filiberto Belsito, MD: Senior Investigator; Libero Barozzi, MD: Senior Investigator; Fabrizio Cantini, MD: Senior Investigator; Carlo Salvarani, MD: Consultant; Pietro Pavlica, MD: Director, Dept. of Diagnostic Radiology, S. Orsola-Malpighi Hospital; Ignazio Olivieri, MD: Senior Investigator.

Please address correspondence and reprint requests to: Dr. Ignazio Olivieri, Servizio di Reumatologia, Ospedale San Carlo, Contrada Macchia Romana, 85100 Potenza, Italy.

Received on May 7, 1998; accepted in revised form on August 28, 1998.

Key words:
Dactylitis, magnetic resonance imaging, psoriatic arthritis, seronegative spondyloarthropathy.

ABSTRACT
A 60-year-old man who had been suffering from psoriasis for 20 years developed finger dactylitis and inflammatory swelling with pitting edema over the dorsum of the hand one week after a contusive trauma to the left hand. These were not followed by any other clinical manifestations of PsA.

Introduction
Physical trauma may play a triggering role in the onset of the peripheral arthritis of psoriatic arthritis (PsA) (1-10) and other forms of spondyloarthritis (SpA) (11, 12). Peripheral arthritis is not the only peripheral inflammatory manifestation of such diseases. Peripheral enthesitis and tenosynovitis are frequently observed. Tenosynovitis involving the flexor tendon synovial sheaths of fingers and toes is responsible for the sausage-like digit or dactylitis (13, 14). Another peripheral manifestation of PsA and SpA that has been described in the last few years is an inflammatory swelling with pitting edema of the dorsum of hands and/or feet (15). Preliminary studies suggest that this manifestation is due to altered capillary permeability secondary to extensor tenosynovitis (15, 16).
We recently reported the case of a patient suffering from psoriasis who developed isolated Achilles enthesitis, one of the most frequent forms of peripheral enthesitis in SpA, after a physical injury (17). We describe here the case of a patient who developed finger dactylitis and inflammatory swelling with pitting edema over the dorsum of the hand after suffering a trauma to the left hand.

Case report
A 60-year-old man affected by psoriasis for 20 years had never suffered from any form of arthritic or tendinous pain until March 1995, when he violently contused his left hand while chopping wood. Hand radiographs taken the same day did not show any bone fracture. After one week, however, he developed swelling with pitting edema over the dorsum and pain and swelling along the flexor tendon of the I and II fingers of the left hand. One week later the flexor tendon synovial sheaths of the III, IV and V fingers of the left hand also became involved, as well as the II and IV right fingers. The local rheumatologist injected steroids into the synovial sheaths of the II and IV left fingers, obtaining limited results only in the II.
In June 1995 the patient was referred to our unit. Physical examination showed swelling together with pitting edema over the dorsum of the left hand and dactylitis of the III, IV and V left fingers. The joints of the three involved fingers were not painful or swollen. On the right hand there was mild pain and swelling along the flexor tendons of the II and IV fingers. There was no limitation of spinal movement or chest expansion. The patient's medical history was negative for other clinical manifestations of PsA and SpA. His family history revealed that his mother had suffered from psoriasis and his grandfather from ankylosing spondylitis.
Laboratory evaluation revealed an ESR of 45 mm/1st hr and a CRP of 36 mg/l (normal < 5). HLA typing showed A1, A2, B35, B44, Cw4, DR1, DR11, DQ1, DQ7 antigens.
Magnetic resonance imaging (MRI) of the hand, performed as previously described (13), showed fluid accumulation in the synovial sheaths of the left III, IV and V and the right II and IV fingers, and subcutaneous edema on the dorsum of the left hand (Fig. 1). No fluid was detectable in the extensor synovial sheaths. There was no fluid in the hand joints or in the wrists. Hand radiographs showed no osteoporosis. Spine and pelvis radiographs were normal.
The patient was given indomethacin 100 mg/day. In the following months he developed tenosynovitis of the left flexor radialis carpi tendon. About 12 months after the onset of PsA, acute phase reactants returned to normal and the tendinous symptoms disappeared. They have not reappeared so far.

Discussion
The patient described here developed two peripheral manifestations of PsA and SpA shortly after experiencing a physical trauma to the left hand - finger dactylitis and inflammatory swelling with pitting edema of the dorsum of the hand. In the past dactylitis has been thought to be due to concomitant arthritis of the

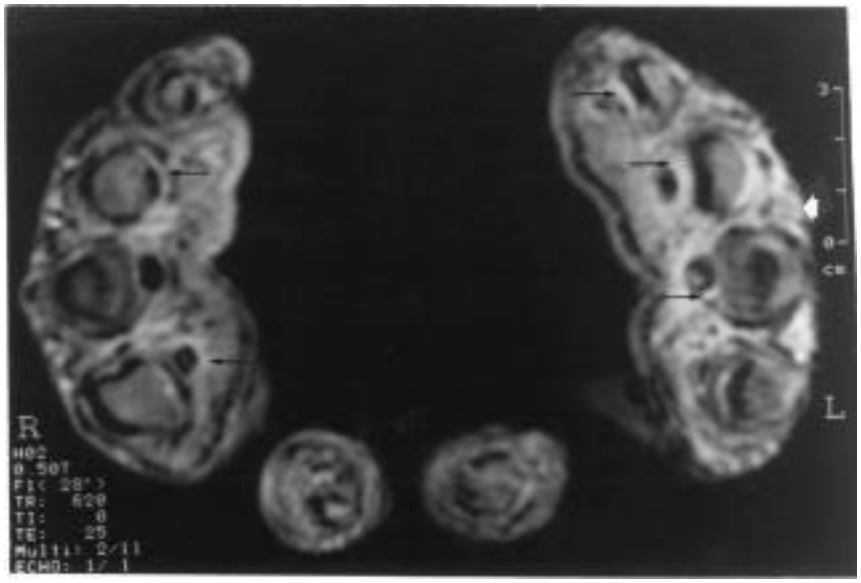

Fig. 1. Axial proton density weighted section at the metacarpo-phalangeal joints showing subcutaneous edema on the dorsum of the left hand (white arrow), together with fluid collection in the synovial sheaths of the left III, IV and V and the right II and IV fingers (black arrows).

metacarpophalangeal, proximal and distal interphalangeal joints and flexor tenosynovitis (1). We have recently demonstrated that flexor tenosynovitis is the responsable lesion and that joint synovitis is only occasionally present (13, 14). In all five of our patient's involved fingers MRI showed fluid collection in the flexor synovial sheaths and no fluid in the adjacent joints.

Inflammatory swelling with pitting edema is not specific to PsA and SpA (15). It has been observed in polymyalgia rheumatica, RS3PE syndrome, and other conditions (15). Preliminary studies suggest that the subcutaneous edema of the dorsum is attributable to a local alteration of capillary permeability secondary to extensor tenosynovitis (15, 16). MRI did not show any detectable fluid in the extensor synovial sheaths in our case. It would probably have been possible to observe extensor tenosynovitis some weeks before, when the inflammatory swelling on the dorsum of the hand was more evident.

The appearance of inflammatory swelling over the dorsum of the hand was similar to that seen in reflex sympathetic dystrophy (RSD). In the last few years two cases of concomitant RSD and PsA triggered by physical injury have been described (3, 8). In the first, reported by Goupille *et al.* (3), the coexistence of the two diseases was certain since a diffuse osteoporosis of the involved hand was seen (4). In the second, reported by Conca *et al.* (8), the diagnosis of RSD was not certain and it is possible that the swelling of the dorsum was inflammatory and caused by psoriatic arthritis.

Recently we have suggested that the clinical spectrum of PsA should be extended to include the subset of patients with isolated peripheral enthesitis and/or dactylitis (17). One such patient seen by us had developed Achilles enthesitis after a physical injury (17). The present report suggests that physical trauma may also trigger peripheral tenosynovitis and that this may occur in isolation.

References

1. WRIGHT V: Psoriatic arthritis. *In* SCOTT JT (Ed.): *Copeman's Textbook of the Rheumatic Diseases*. 6th ed. Edinburgh, London, Melbourne, New York, Churchill Livingstone 1986: 775-86.
2. LANGEVITZ P, BUSKILA D, GLADMAN DD: Psoriatic arthritis precipitated by physical trauma. *J Rheumatol* 1990; 17: 695-7.
3. GOUPILLE P, SOUTIF D, VALAT J-P: Psoriatic arthritis precipitated by physical trauma (letter). *J Rheumatol* 1991; 18: 633.
4. PAGÈS M, LASSOUED S, FOURNIÉ B, FOURNIÉ A: Psoriatic arthritis precipitated by physical trauma: Destructive arthritis or associated with reflex sympathetic dystrophy ? (letter). *J Rheumatol* 1992; 19: 185.
5. SCARPA R, DEL PUENTE A, DI GIROLAMO C, DELLA VALLE G, LUBRANO E, ORIENTE P: Interplay between environmental factors, articular involvement, and HLA-B27 in patients with psoriatic arthritis. *Ann Rheum Dis* 1992; 51: 78-9.
6. DE BANDT M, PALAZZO E, BRISSAUD P, KAHN MF: Rhumatisme psoriasique post-traumatique: Aspects cliniques et médico-légaux. *Rev Rhum* 1992; 59: 461-4.
7. PUNZI L, LAZZARIN P, PIANON M, SFRISO P, IANNIELLO A, TODESCO S: Le rhumatisme psoriasique post-traumatique: Aspects cliniques et biologiques. *In:* SIMON L, PÈLISSIER J, and HÉRRISON C (Eds.): *Actualités en Réducation Functionelle et Réadaptation*. Paris, Masson, 1994; 254-8.
8. CONCA W, LAUBENBERGER J, KRAUSE T, BLUMBERG H, PETER HH: Post-traumatic reflex sympathetic dystrophy anteceding inverse psoriasis and psoriatic arthritis. *J Rheumatol* 1995; 22: 783-5.
9. SANDORFI M, FREUNDLICH B: Psoriatic and seronegative inflammatory arthropathy associated with a traumatic onset: 4 cases and a review of the literature. *J Rheumatol* 1997; 24: 187-92.
10. PUNZI L, PIANON M, BERTAZZOLO N *et al.*: Clinical, laboratory and immunogenetic aspects of post-traumatic arthritis: A study of 25 patients. *Clin Exp Rheumatol* 1998; 16: 277-81.
11. OLIVIERI I, GHERARDI S, BINI C, TRIPPI D, CIOMPI ML, PASERO G: Trauma and seronegative spondyloarthropathy: Rapid joint destruction in peripheral arthritis triggered by physical injury. *Ann Rheum Dis* 1988;47:73-6.
12. OLIVIERI I, GEMIGNANI G, CHRISTOU C, PASERO G: Trauma and seronegative spondyloarthropathy: Report of two more cases of peripheral arthritis precipitated by physical injury. *Ann Rheum Dis* 1989; 48: 520-521.
13. OLIVIERI I, BAROZZI L, FAVARO L, *et al.*: Dactylitis in patients with seronegative spondylarthropathy: Assessment by ultrasonography and magnetic resonance imaging. *Arthritis Rheum* 1996; 39: 1524-8.
14. OLIVIERI I, BAROZZI L, PIERRO A, DE MATTEIS M, PADULA A, PAVLICA P: Toe dactylitis in patients with spondyloarthropathy: assessment by MRI. *J Rheumatol* 1997; 24: 926-30.
15. OLIVIERI I, SALVARANI C, CANTINI F: Remitting distal extremity swelling with pitting edema: A disintict syndrome or a clinical feature of different inflammatory rheumatic diseases ? *J Rheumatol* 1997; 24: 249-52.
16. PADULA A, OLIVIERI I, BAROZZI L *et al.*: Dactylitis also involving the synovial sheaths in the palm of the hand: Two more cases studied by magnetic resonance imaging. *Ann Rheum Dis* 1998; 57: 61-2.
17. SALVARANI C, CANTINI F, OLIVIERI I *et al.*: Isolated peripheral enthesitis and/or dactylitis: A subset of psoriatic arthritis. *J Rheumatol* 1997; 24: 1106-10.