

Case Report

Tenosynovitis as a Primary Manifestation of Rheumatoid Arthritis

Balaji G*, Korpu Venkata Ram Kishore**, Victor Moiranthem***

*Senior Resident, **Post Graduate, ***Associate Professor, Department of Orthopedics, Chettinad Academy of Research & Education, Chennai, India.



Dr. Balaji Govindarajan, presently working as Senior Resident, Department of Orthopedics, graduated from University of Mysore in 2000 and obtained his Postgraduate Diploma in Orthopedics from Sri Ramachandra Medical College, Porur, Chennai in 2003. He joined this institution in 2006. One of his earlier article was published by the renowned AAOS (American Academy of Orthopaedic Surgeons) in 2014.

Corresponding author - Korpu Venkata Ram Kishore - (luckramki@gmail.com)

Chettinad Health City Medical Journal 2016; 5(4): 196 - 00

Abstract

42 year old woman complained of swelling in the back of her right wrist for two months. Examination showed a fluctuant swelling on the dorsum of her wrist. X-rays, blood counts and ESR were normal. Rheumatoid factor was positive. Anti - CCP was negative. MRI showed tenosynovitis of Extensor digitorum communis. After conservative measures failed to relieve pain, synovectomy was performed. Biopsy finding was consistent with rheumatoid tenosynovitis. After remaining symptom free for four weeks, she developed synovitis of both wrists and hand joints. Therefore Tenosynovitis may present primarily in rheumatoid disease before other manifestations become evident clinically, radiographically or serologically.

Key Words: Tenosynovitis, Rheumatoid arthritis, Radiography, Synovectomy

Introduction

Rheumatoid tenosynovitis is a common occurrence in rheumatoid arthritis¹⁻⁴. Its development is slow and non-painful. This lesion most commonly involves the extensor tendons at the wrist⁵. Diagnosis is easy in the presence of other manifestations of rheumatoid arthritis. Isolated tenosynovitis as a manifestation of early rheumatoid arthritis is not well known and is rarely reported in literature. Tubercular infection of the tendon sheath should be ruled out in the absence of articular involvement. A previous report on cases of isolated tenosynovitis, which was initially diagnosed tubercular and later found to be non-tubercular needs to be mentioned⁶. Histopathological examination of the diseased synovium is needed to establish a diagnosis in such situations. Here, we report a case of extensor tenosynovitis of the wrist presenting as a primary manifestation of rheumatoid disease.

Case Report

A 42 year old housewife presented to us with complaints of swelling on the back of her right wrist for two months. The swelling was gradual in onset and progressive. She occasionally had pain, especially at night. There was no history of trauma, fever, weight loss, loss of appetite or other joint involvement. Examination revealed a well demarcated, non-tender and fluctuant swelling on the dorsum of her right wrist (Figure 1). Extension of the fingers against resistance was painful. Wrist movements were pain free. There was no lymphadenopathy.



Figure 1 - Pre-op clinical photograph showing well demarcated swelling on the dorsum of the right wrist.

Her blood counts and uric acid levels were normal and erythrocyte sedimentation rate was 20 mm at one hour. Rheumatoid factor was weakly positive (24 IU/ml) and Anti-cyclic citrullinated peptide (Anti-CCP) was negative (1.30 U/ml). X-rays of her wrist and chest were normal. Magnetic resonance imaging of the wrist showed significant fluid within the sheath of extensor digitorum communis associated with synovial thickening and intrasubstance hyperintensity, were seen in the tendon of Extensor digitorum communis suggestive of tenosynovitis (Figure 2). The wrist joint appeared normal.

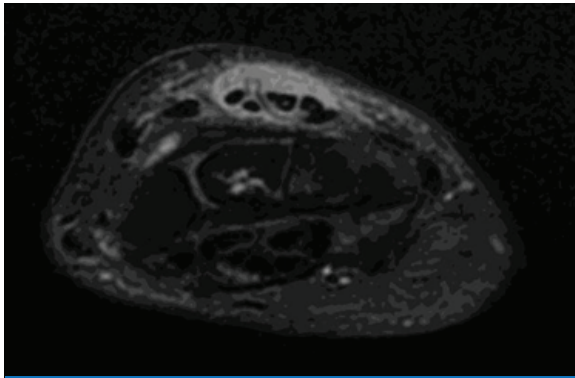


Figure 2 - Axial, proton density fat sat image of the MRI of right wrist showing significant fluid within the sheath of Extensor digitorum communis, with synovial thickening and intra-substance hyperintensity.

Her symptoms persisted beyond three months of non-steroidal anti-inflammatory drugs and splinting. We proceeded with Synovectomy. The tenosynovitis involved the extensor digitorum communis extending proximally under the extensor retinaculum. The tendon sheath was reddish and considerably thickened (Figure 3).



Figure 3 - Intra-operative picture showing thickened and reddish tendon sheath involving the fourth extensor compartment at wrist.

Microscopically, there was hyperplasia and hypertrophy of the intimal lining with papillary pattern of synovial folding. There was significant subintimal lymphocytic infiltration with areas of focal aggregation of lymphoid cells. Fibrinous exudate was seen on the synovial surface (Figure 4).

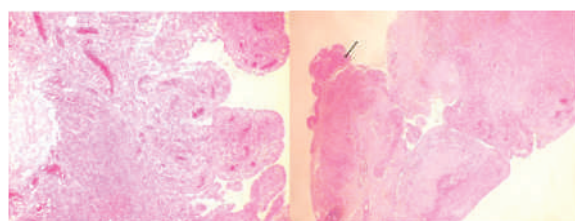


Figure 4 - Photomicrograph showing papillary pattern of the synovial folding with hyperplasia of the intimal lining and subintimal lymphocytic infiltration and areas of lymphoid cell aggregates and fibrinous exudate on the synovial surface indicated by an arrow.

The patient remained symptom free for about four weeks postoperatively. Later, she presented with synovitis of the wrists, metacarpophalangeal and proximal interphalangeal joints of both hands. At 5 weeks post-surgery, her Total leucocyte count increased to 10,700 cells/cumm with neutrophils accounting to 76.9%. Erythrocyte sedimentation rate was 46mm at 1 hour. There was also a significant increase in titers of Rheumatoid Factor to 96 IU/ml and Anti-cyclic citrullinated peptide to 4.1 U/ml.

Serologically, the disease became more evident at 7th week with further elevation of titers of Rheumatoid factor and Anti-cyclic citrullinated peptide to 102 IU/ml and 5.1 U/ml respectively. Our patient showed significant symptomatic and clinical improvement with Disease Modifying Anti-Rheumatoid Drugs thereafter. At one-year follow-up, patient had full range of movements at her wrist and finger joints. Her handgrip was of normal strength and she was able to carry out her daily household activities comfortably. There were no articular erosions on radiographs, taken after one year of follow-up.

Discussion

The diagnosis of rheumatoid arthritis is based primarily on clinical findings, and differentiation of early rheumatoid arthritis from other joint diseases poses a challenge. The joints of hands and feet are among the first to be affected in rheumatoid arthritis. However, 70% of the patients with early rheumatoid arthritis have no apparent changes on x-rays of the hands'. Thus, x-ray changes of rheumatoid arthritis lags behind clinical evidence of the disease.

In our patient, clinical involvement of the joints was evident 6 months after the preceding attack of extensor tenosynovitis. Also, the appearance of tendon sheath on the magnetic resonance image or during surgical exploration gave a non-specific diagnosis. Histopathological examination of the tendon sheath revealed the true character of the disease process.

Our patient had tenosynovitis of the extensor tendon at the wrist much earlier to other clinical manifestations of rheumatoid arthritis and also several months before it was evident immunologically.

Many studies have reported tenosynovitis to be a common finding in patients with early rheumatoid arthritis⁴, however, the importance of this finding for diagnosing rheumatoid arthritis in its early stages has rarely been reported. Extensor tenosynovitis can be considered as a predictor of early rheumatoid arthritis. Combining this finding with positive serum Anti cyclic citrullinated peptide values or alternatively with positive Rheumatoid factor values yields even stronger early predictors of rheumatoid arthritis. There is growing evidence that therapeutic intervention early in the disease course of rheumatoid arthritis leads to earlier disease control and less joint damage, thus emphasizing the importance of early diagnosis.

Conclusion

In patients with tenosynovitis, Tenosynovectomy with histological examination of the tendon sheath should

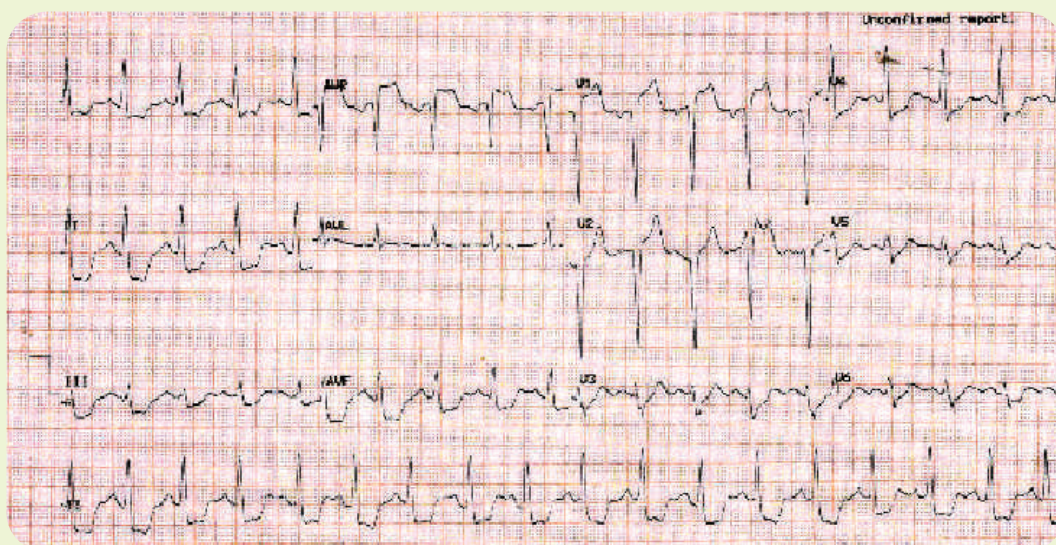
be opted early during the course of the disease process to avoid diagnostic delay which will in turn aid in better disease control and less joint damage. Tenosynovitis may present primarily in rheumatoid disease before other manifestations become evident clinically, radiographically or serologically.

References

- 1) Van der Heijde DM, van Leeuwen MA, van Riel PL, van de Putte LB. Radiographic progression on radiographs of hands and feet during the first 3 years of rheumatoid arthritis measured according to Sharp's method (van der Heijde modification). *J Rheumatol* 1995 ; 22 (9):1792-6.
- 2) Backhaus M, Burmester GR, Sandrock D, Loreck D, Hess D, Scholz A, et al. Prospective two year follow up study comparing novel and conventional imaging procedures in patients with arthritic finger joints. *Ann Rheum Dis.* 2002; 61 (10) : 895 - 904
- 3) Backhaus M, Kamradt T, Sandrock D, Loreck D, Fritz J, Wolf KJ, et al. Arthritis of the finger joints: a comprehensive approach comparing conventional radiography, scintigraphy, ultrasound, and contrast-enhanced magnetic resonance imaging. *Arthritis Rheum.* 1999;42(6):1232-45.
- 4) Boutry N, Larde A, Lapegue F, Solau-Gervais E, Flipo RM, Cotten A. Magnetic resonance imaging appearance of the hands and feet in patients with early rheumatoid arthritis. *J Rheumatol* 2003;30(4):671-9.
- 5) Potter TA, Kuhns JG. Rheumatoid tenosynovitis, Diagnosis and treatment. *J BoneJoint Surg AM.* 1958;40(6):1230-5
- 6) Simner PJ, Hyle EP, Buckwalter SP, Branda JA, Brown-Elliott BA, Franklin J, et al. Tenosynovitis Caused by a Novel Non-tuberculous Mycobacterium Species Initially Misidentified as a Member of the *Mycobacterium tuberculosis* Complex. *J ClinMicrobiol.* 2014; 52(12): 4414-8.

A Case of Global ST Depression

A 33 year old female, euglycemic, hypertensive, known Takayasu arteritis for last 6 yrs admitted with chest pain.



- Dr.G.Ashok, Consultant Cardiologist, CSSH.

Answer in page : 212