

## Interosseous tendon inflammation of rheumatoid arthritis: what's the real meaning?

We read with deep interest the article by Mankia *et al*<sup>1</sup> related to interosseous tendon inflammation (ITI) of rheumatoid arthritis (RA). This retrospective analysis suggested that ITI occurs in anticyclic citrullinated peptide positive at-risk (CCP+at-risk) individuals and could precede the onset of clinical synovitis. The ITs may be important non-synovial extracapsular targets in the development and progression of RA. Their finding suggested a new extra-articular involvement of RA. We really appreciate the work that has been done by the authors. However, there are some worthwhile issues that need to be explored.

The authors found that no IT tenosynovial sheath was identified and no communication between the IT and the joint in cadavers on dissection or histological studies. Thus, they concluded that MRI findings represented 'peritendonitis'. The result was different with Rowbotham *et al*,<sup>2</sup> who reported that tenosynovitis of the hand ITs was found in 47.7% of patients with RA, and in the majority of cases, this was adjacent to metacarpophalangeal joint synovitis. We agree with the authors' point of view. We can tell from the MRI that the signal change is around interosseous muscles, other than in the tendon and muscle fibres of themselves. In fact, there is still a thin layer of fascia wrapping the interosseous muscle with many connective tissue cells, as peritendon showing in figure 2C,D.<sup>1</sup> In our opinion, this should be fasciitis around the interosseous muscles. Essentially, it is an extra-articular manifestation of RA, similar to rheumatoid vasculitis, rheumatoid heart disease, rheumatoid lung disease and so on.<sup>3 4</sup> It provides a new perspective for the research of RA: rheumatoid fasciitis. This might be the intrinsic value of this study. Previous studies on isolated peritendinous inflammation of the digital extensor tendons have also proved this point.<sup>5</sup>

Generally speaking, this study is very important and interesting. However, some aspects still need to be further improved. First, the sample size of this study was relatively small. Only 93 CCP+at-risk, 47 early RA (ERA), 28 late RA (LRA) and 20 health controls (HC) were included. On the basis of such a small sample size, the positive rates of CCP+ and ITI might not accurate enough. The sample size needs to be expanded. Second, women account for the vast majority in each group: 69% in CCP+at-risk group, 74% in ERA group, 93% in LRA group and 75% in HC group, respectively. The results may be gender-biased. If gender-related data were improved, the results would be more objective and reliable. In addition, the related factors of RA were not analysed and excluded. For example, the age of the sample was not sufficiently representative. If we can analyse several age subgroups, the results will be more convincing. Furthermore, if fasciitis is found in other parts of the patient, the findings will be more meaningful.

Aside from the factors related to RA, risk factors of ITI also need to be excluded. Yet, there is no report on risk factors associated with ITI. Many general factors may relate to tendinitis or fasciitis of hand, such as trauma, diabetes, inflammatory arthritis, renal disease, gout and so on.<sup>6 7</sup> Unfortunately, these factors are not statistically analysed in this study. The activity, labour and exercise load of the hand could also affect the occurrence of tendinitis and fasciitis.<sup>6 7</sup> Were the HC and other groups in the same conditions? However, this information was not provided

in the text. It is difficult to tell whether inflammation around the interosseous muscles was caused by RA or mechanical factors.

In addition to all the above, there are some other issues that puzzled us. The word 'epitendon' was used in the illustration of figure 2 and some sections. It was incorrect and lead to a misunderstanding. According to our understanding, it should be changed to 'peritendon'. Besides, 'EPM', 'MF' and 'EM' were marked in figure 2, but there was no explanation for these abbreviations.

We respect the great contributions of the authors and would also be very much interested in the authors' response to these issues.

Zhenhan Deng , Haifeng Liu, Wei Lu

The First Affiliated Hospital of Shenzhen University, Shenzhen Second People's Hospital, Shenzhen, China

**Correspondence to** Dr Wei Lu, The First Affiliated Hospital of Shenzhen University, Shenzhen Second People's Hospital, Shenzhen 518035, China; weilu9309@gmail.com

**Contributors** ZD: concept and writing; HL: writing; WL: concept and revising.

**Funding** This work was supported by the Provincial Science Foundation of Guangdong (2018A030313834), the Guangdong Medical Research Fund Project (A2018284) and the Shenzhen Science and Technology Plan Project (JCYJ20170306091150112).

**Competing interests** None declared.

**Patient consent for publication** Not required.

**Provenance and peer review** Not commissioned; internally peer reviewed.

© Author(s) (or their employer(s)) 2020. No commercial re-use. See rights and permissions. Published by BMJ.



**To cite** Deng Z, Liu H, Lu W. *Ann Rheum Dis* 2020;79:e83.

Received 16 April 2019

Accepted 22 April 2019

Published Online First 17 May 2019



► <http://dx.doi.org/10.1136/annrheumdis-2019-215611>

*Ann Rheum Dis* 2020;79:e83. doi:10.1136/annrheumdis-2019-215559

**ORCID iD**

Zhenhan Deng <http://orcid.org/0000-0003-0522-8269>

## REFERENCES

- Mankia K, D'Agostino M-A, Rowbotham E, *et al*. MRI inflammation of the hand interosseous tendons occurs in anti-CCP-positive at-risk individuals and may precede the development of clinical synovitis. *Ann Rheum Dis* 2019;78:781–6. 10.1136/annrheumdis-2018-214331.
- Rowbotham EL, Freeston JE, Emery P, *et al*. The prevalence of tenosynovitis of the interosseous tendons of the hand in patients with rheumatoid arthritis. *Eur Radiol* 2016;26:444–50.
- Turesson C, Mathsson L, Jacobsson LTH, *et al*. Antibodies to modified citrullinated vimentin are associated with severe extra-articular manifestations in rheumatoid arthritis. *Ann Rheum Dis* 2013;72:2047–8.
- Kim EJ, Collard HR, King TJ. Rheumatoid arthritis-associated interstitial lung disease: the relevance of histopathologic and radiographic pattern. *Chest* 2009;136:1397–405.
- Nieuwenhuis WP, Krabben A, Stomp W, *et al*. Evaluation of magnetic resonance imaging-detected tenosynovitis in the hand and wrist in early arthritis. *Arthritis Rheumatol* 2015;67:869–76.
- David M, Rangaraju M, Raine A. Acquired triggering of the fingers and thumb in adults. *BMJ* 2017;359.
- Manger B, Schett G. Paraneoplastic syndromes in rheumatology. *Nat Rev Rheumatol* 2014;10:662–70.