

Transcript Details

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Using Ultrasound to Differentiate Rheumatoid Arthritis and Psoriatic Arthritis

Announcer:

You're listening to *Living Rheum* on ReachMD. On this episode, Dr. Erin Chew will discuss sonographic imaging of the hand and wrist with a focus on rheumatoid arthritis and peripheral spondyloarthritis. Dr. Chew is an Assistant Professor of Medicine in the Division of Rheumatology and Immunology at Vanderbilt University Medical Center. She presented on this topic at the 2024 American College of Rheumatology Convergence. Here's Dr. Chew now.

Dr. Chew:

So the ultrasound has become a really powerful tool for the rheumatologist in being able to diagnose inflammatory arthritis pretty early on and help differentiate the various types of inflammatory arthritis. So rheumatoid arthritis and peripheral spondyloarthritis, like psoriatic arthritis, do have several common features on ultrasound, so you will see things like synovitis, which is inflammation of the joint capsule and tenosynovitis, which is inflammation and tendon sheath distension of the tendons, but there are some features that help differentiate rheumatoid from psoriatic. For example, a few studies have shown that the presence of erosions, particularly around the second and the fifth MCP as well as the fifth MTP and the distal ulna are highly specific for rheumatoid arthritis; and additionally, the size of the erosion—greater than 2 mm is also very highly associated for rheumatoid arthritis.

In contrast, the features that we see in psoriatic arthritis are centered around abnormalities at the entheses. As a reminder, the enthesis is the site at which a tendon is attaching to a bone. And our peripheral spondyloarthritis like psoriatic arthritis is thought to be a disease of the enthesis, so we think that inflammation of the enthesis is thought to drive several domains that we see in psoriatic arthritis like dactylitis and nail disease and spondylitis. For that reason, we can use the ultrasound to focus on the entheses, so things like the patellar tendon and the quadriceps tendon, the lateral epicondyle where the common extensor tendons insert anterolateral of the condyle, and even the really small extensor tendons of the finger to look for both structural and inflammatory changes. Several studies have shown that when we see inflammation around the extensor tendons of the finger out of proportion to inflammation within the joint itself, this can be more associated with psoriatic arthritis compared to rheumatoid arthritis.

So for this reason, ultrasound can be really helpful to first detect early inflammation and help differentiate between psoriatic arthritis or other peripheral spondyloarthritis in rheumatoid arthritis. So when evaluating for rheumatoid arthritis, special attention should be made looking at the wrist, especially that distal ulna. And we know that in rheumatoid arthritis, the ECU tendon, or the extensor carpi ulnaris tendon that sits over the distal ulna, can be inflamed, and that inflammation can cause erosion and destruction of that distal ulna. Rheumatoid arthritis is an inflammatory symmetric polyarticular arthritis that affects the small joints of the hands, particularly the MCPs, so focusing on the MCPs in particular, primarily the medial side of the second MCP and the lateral side of the fifth MCP, is helpful because you can place the probe on those areas.

And then in contrast, psoriatic arthritis, as I mentioned before, is a disease of the enthesis, so the areas that we like to focus on are the enthesal areas, so things like the lateral epicondyle where the common extensor tendons insert the patellar tendon or the quadriceps tendon, but there are caveats to that because those enthesal sites are very common in patients who don't have inflammatory arthritis. So tennis elbow, Achilles tendinitis, and patellar tendinitis are common when patients might have a lot of physical activity or their higher BMI can cause enthesitis at those areas, so we like to recommend looking at the smaller entheses of the fingers that are not as affected by weight, age, or mechanical use, and so focusing on the central slip of the common extensor tendon can be helpful. It's this tendon that inserts over the MCP and PIP joints and inserts at the base of the middle phalanx. And there's fibrocartilaginous tissue there that is embedded and dissipates the mechanical stress associated with compression of the tendon over the bone, and so this is a nice area to

look for inflammation of this enthesis.

Announcer:

That was Dr. Erin Chew discussing sonographic imaging of the hand and wrist for rheumatoid arthritis and peripheral spondyloarthritis, which she presented on at the 2024 American College of Rheumatology Convergence. To access this and other episodes in our series, visit *Living Rheum* on ReachMD.com, where you can Be Part of the Knowledge. Thanks for listening!