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Why use ultrasound in rheumatology?

A valuable tool for diagnosis and research

Over the past decade, musculoskeletal US (MSUS) has played an increasingly important role in optimizing clinical assessment and monitoring of patients with rheumatological diseases [1, 2]. This technique has allowed us to minutely evaluate periarticular and intra-articular structures involved in musculoskeletal diseases [2, 3]. We could also say that MSUS is now at the cutting edge of research in rheumatology [4, 5]. High-resolution MSUS with Doppler technique provides an accurate and sensitive assessment of joint and enthesis inflammatory activity and structural damage in inflammatory arthritis and OA [4–7]. MSUS allows a detailed diagnosis of soft tissue syndromes [8, 9]. It is now also increasingly being used in the diagnosis of paediatric musculoskeletal diseases and this application in itself is an evolving field [10]. However, the capabilities and advantages of MSUS in adults can be even greater in children with inflammatory and infectious diseases [11].

MSUS is a valuable bedside tool for guiding accurate and safe musculoskeletal diagnostic fluid aspiration and peri- or intra-lesional therapeutic injections [1–3]. It provides confirmation of the clinical diagnosis and the indication for injection. Real-time US enables us to correctly place the needle, accurately deliver medication and visualize the steroid suspension during and after the procedure. These advantages are very useful in the management of rheumatic disease. Evidence of the role and validity of US in evaluating the above abnormalities is increasing [12]. New frontiers of MSUS that are worthy of attention include US assessment of the skin and vessels in rheumatological diseases.

In conclusion, MSUS is a relevant part of current and future rheumatology practice and research because it substantially improves our diagnostic and therapeutic capabilities. This supplement is an update of the key aspects of current and emerging MSUS applications and research in rheumatology.

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