

Focus

Technology catches up with rheumatology

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Rheumatology is emerging from the dark ages. For years this specialty relied on history taking, examination and integrative deduction but technology has now caught up with us, improving accuracy of diagnosis and offering new treatments.

Diagnostic ultrasound has come of age for soft tissue pathology. High resolution probes allow accurate diagnosis of tendonitis, bursitis, tendon and ligament rupture, evaluation of cartilage and detection of effusions in deep locations. Accurate needle placement for the more difficult soft tissue steroid injections such as the plantar fascia can be done under ultrasound control.

The definition of soft tissue rheumatism is set to change; no longer will "bursitis" or "tendonitis" explain localised pain, scans can prove us wrong. The most useful applications are in evaluating shoulder problems, seeking tendon ruptures, detecting effusions at the hip and guiding steroid injections. Magnetic resonance imaging (MRI) is excellent for showing detail in soft tissues (ultrasound is usually more readily available, cheaper and almost as good). It is finding a role in the assessment of early inflammatory arthritis where it can detect changes before systemic inflammation results in a rise in ESR or CRP, and long before x-rays show erosions. In assessing muscle disease, it can help distinguish inflammatory (such as polymyositis) from degenerative (such as steroid myopathy), and can guide suitable biopsy sites. Now more widely available here, DEXA scanning is making osteoporosis easier to detect. Old ideas about the inevitability of fractures with age are being replaced with preventative strategies.

DEXA uses low dose x-ray to sample bone mineral content at different skeletal sites. The precision and reproducibility of this technique allows clinicians and patients to make rational treatment decisions. It can also improve compliance with prescribed lifestyle changes. In managing rheumatic diseases with steroids, it allows us to detect and manage steroid-related bone loss.

New technologies are also affecting treatment. COX-2 specific inhibitors (see previous article) provide safer symptom control. Designer drugs for rheumatoid arthritis with specific immunological and cytokine targets have been developed. In

Key points

- Diagnostic ultrasound is improving the accuracy of soft tissue pathology diagnosis and can be used to control the placement of difficult soft tissue steroid injections
- MRI is finding a role in diagnosing early inflammatory arthritis and assessing muscle disease
- DEXA is making osteoporosis easier to detect and giving accurate information on which to base decisions about prevention, treatment and the effects of any steroid regimen on an individual
- New medicines such as COX-2 specific inhibitors and synthetic hyaluronan, and new techniques such as arthroscopic washout of arthritic knees, are providing new options for treatment and symptom relief

the forefront is *etanercept* (*Enbrel*®) a *TNF-antagonist* specifically designed to stop the inflammatory processes in RA. It remains to be seen if this will offer significant benefits over methotrexate or the cheaper new drugs such as *leflunomide*. In osteoarthritis there is a new option: *synthetic cross-linked hyaluronan*. Now routine in North America, this provides shock absorption and lubrication in place of synovial fluid. It is given as a course of three injections at weekly intervals. In tests it relieved symptoms (ie, no need for a NSAID) of knee osteoarthritis for an average of eight months.

Needle arthroscopy is becoming common in the US, but is a procedure looking for an indication. Synovial biopsy is rarely useful in routine practice, but arthroscopic washout of osteoarthritic knees can give useful relief for a year or two.

As the baby boomers age, technology driven therapies will be in demand. Ten years ago a senior physician remarked that rheumatology was "lasses' work". Now even recently trained rheumatologists risk being out of date as Cinderella makes a belated entrance at the ball.