431 – Knee Imaging

With Steven Bruce and Mr Ian McDermott

This discussion focused on the role of diagnostic imaging in the assessment and management of knee pathology, particularly within musculoskeletal practice. The conversation was structured around key clinical concerns: the limitations of clinical tests, the appropriate use of imaging, the strengths and weaknesses of various imaging modalities, and the implications of relying on national guidelines that prioritise cost-saving over diagnostic precision.

The Limitations of Clinical Examination

The discussion began by critiquing the reliability of clinical testing in knee assessment. It was emphasised that no individual clinical test offers sufficiently high sensitivity or specificity to guarantee accurate diagnosis. Examples such as joint line tenderness, McMurray's test, and the anterior drawer test for ACL injuries were examined. Even widely used tests for significant injuries like ACL ruptures were shown to have substantial false-negative and false-positive rates. The discussion highlighted the importance of combining multiple tests to improve diagnostic reliability but warned against overconfidence in hands-on skills alone.

When and Why to Refer for Imaging

It was argued that imaging should be employed more readily than current NHS guidelines suggest. Rather than reserving imaging for non-responders or red flags alone, a lower threshold for imaging was advocated to ensure accurate diagnosis and avoid missing serious pathology. While clinicians in secondary care may routinely access imaging, primary care professionals and manual therapists face systemic barriers. Nonetheless, early imaging was presented as a crucial safeguard, especially in cases where symptoms persist, progress unexpectedly, or appear atypical.

Imaging Modalities: Strengths and Clinical Use

The value of each imaging modality was discussed in context. X-rays were seen as useful for diagnosing obvious joint degeneration, but limited in assessing soft tissue. Ultrasound was praised for its application in superficial pathologies such as tendon disorders or bursitis, but inadequate for intra-articular knee conditions. MRI was identified as the primary modality for detailed joint assessment due to its capacity to visualise soft tissue, but only when performed with high-resolution 3T scanners. CT scans were noted for their value in evaluating bony morphology, and SPECT-CT was described as a niche but powerful tool in assessing complex or occult pathology, particularly in suspected prosthesis loosening.

Challenges with Imaging Reports and Interpretation

A strong critique was levelled at the over-reliance on radiology reports, particularly when produced by generalist radiologists who lack patient context. Reports were said to often over-list findings, creating confusion or fear in patients. The speaker encouraged clinicians to view images themselves whenever possible and cautioned against interpreting scan reports in isolation. Additionally, poor-quality imaging—whether due to substandard scanners or cost-driven shortcuts—was identified as a significant issue that could mislead diagnosis or result in missed pathology.

Risks of Missed Diagnoses and Screening Value

The discussion stressed the importance of imaging not only for diagnosis but also for screening. Examples were provided of cases where serious pathology, including bone tumours and aggressive cysts, were only detected because imaging was performed. Such conditions may present with non-specific symptoms and, without imaging, could be easily misdiagnosed or missed altogether. The speaker emphasised that failing to investigate these cases early could result in delayed treatment and severe consequences for the patient.

Critique of NICE Guidelines

Particular concern was raised about the NICE guidelines on osteoarthritis, which allow for a clinical diagnosis without imaging in many cases. While the cost rationale behind these guidelines was acknowledged, the discussion argued that they compromise diagnostic accuracy and risk patient safety. It was proposed that imaging provides essential information, and omitting it may hinder the delivery of high-quality care.

Scepticism Toward Injections and Alternative Treatments

The session concluded with a critical appraisal of intra-articular injections. Hyaluronic acid (HA) and platelet-rich plasma (PRP) were dismissed as ineffective and potentially unethical due to their cost and lack of efficacy beyond placebo. Steroid injections were described as the most effective injectable option but were warned against due to their degenerative effects when used repeatedly. The discussion suggested that too many clinicians continue to use such interventions despite strong evidence advising against them.

Summary Remarks

The overall message underscored a need for clinicians to be more confident in requesting imaging, more critical of scan reports, and more aware of the risks of missed pathology. High-quality imaging, combined with sound clinical judgment and appropriate referrals, was presented as central to delivering effective musculoskeletal care. Clinicians were encouraged to reject cost-containment policies that limit patient access to diagnostics and to advocate for higher standards of practice that prioritise safety and accuracy.