

# Arthritis

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Rheumatoid arthritis Rheumatoid arthritis presents with classic symptoms: morning stiffness, symmetrical arthritis, hand deformities and rheumatoid nodules. Diagnostic criteria include seropositive rheumatoid factor and radiographic changes ( Table 38.1 ). The inflamed rheumatoid synovium (pannus) destroys ligaments, tendons and joints, producing pain, deformity and loss of function. Typical rheumatoid deformities in the hand include boutonnière ( Figure 38.46 ), swan neck ( Figure 38.47 ) and radial drift of the wrist (due to supination of the carpus), with compensatory ulnar deviation of the MCPJs ( Figure 38.48 ). Pannus can cause extensor tendon ruptures, classically starting with the little finger and progressing stepwise in a radial direction (Vaughan-Jackson syndrome). With progressive deformity and instability of the wrist and hand, activities such as key-pinch and the opening of jars become impossible to perform. The treatment should be dictated by the patient's levels of pain and disability, not purely on the basis of deformity.

TABLE 38.1 Radiographic differences between rheumatoid and osteoarthritis.

Rheumatoid arthritis	Osteoarthritis
Periarticular osteoporosis/	Subchondral sclerosis and subchondral erosions
cysts	Periarticular soft-tissue swelling
Less pronounced swelling	Joint space narrowing
Joint space narrowing	Marginal erosions
Marginal osteophytes	Joint deformity/malalignment
Less pronounced deformities	Ankylosis
Less common ankylosis	

Summary box 38.13 Manifestations of rheumatoid arthritis in the hand

The primary indications for surgery are: (i) pain relief; (ii) functional improvement; (iii) to prevent disease progression; and (iv) cosmesis. Patients may require many surgical procedures over time and a helpful axiom is to start proximally and work distally, alternating between motion-sacrificing and motion-sparing procedures. The various procedures that can be considered are:

- 1 Synovectomy: improves pain, increases function and prevents tendon rupture.
- 2 Trigger finger releases and nerve decompression surgery (carpal tunnel syndrome).
- 3 Distal ulna excision: reduces pain, prevents extensor tendon rupture or protects repaired extensor tendons. Distal ulna excision leads to instability and so, in the young patient, a constrained ulnar head arthroplasty is preferred.
- 4 Arthrodesis of the wrist, thumb and some of the smaller joints: gives good pain relief and creates a stable axis against which other parts can function.
- 5 MCPJ and IPJ replacements: provide pain relief and functional improvement. Total wrist arthroplasty will also provide good pain relief and some motion ( Figure 38.49 ).
- 6 Tendon reconstructions: some ruptured tendons can cause significant morbidity ( Figure 38.50 ) and are often treated by either a tendon transfer or a local joint fusion.

Osteoarthritis Wrist The radiocarpal joint can develop primary or secondary osteoarthritis (after intra-articular trauma or infection). If conservative measures have failed then operative management includes limited or total wrist arthrodesis and total wrist replacement.

Rupture Figure 38.46 Boutonnière deformity. Figure 38.47 Swan neck deformity. Figure 38.48 Rheumatoid hand showing ulnar drift at the metacarpo phalangeal joints, which is seen compensating for radial deviation at the wrist joint. Swan neck, boutonnière /finger deformities Extensor tendon ruptures (Vaughan-Jackson syndrome) Flexor tendon synovitis or rupture MCPJs: /flexion, ulnar deviation, subluxation, dislocation Wrist: radial deviation, carpal supination, prominent ulnar head (caput ulnae), extensor

# tenosynovitis

Figure 38.49 Total wrist replacement.

Hand Females are more commonly affected than males. The commonly affected joints are the distal interphalangeal (Heberden's nodes), proximal interphalangeal (PIP) (Bouchard's nodes) and the thumb carpometacarpal joints ( Figure 38.51 ). Symptoms rarely correlate with the appearance, either clinically or radiographically . Treatment includes splinting, physiotherapy and steroid injections. Surgical options include arthrodesis for distal interphalangeal (DIP) and PIP joints ( Figure 38.52 ), joint replacement (PIP and MCPJs) and excision arthroplasty (excision of the trapezium [trapeziectomy] for thumb carpometacarpal joint arthritis). Joint arthrodesis eliminates pain at the expense of motion, but function is often well preserved. Other forms of arthritis in the hand Psoriasis particularly affects the IPJs, but is asymmetrical in nature and causes fusiform swelling of the digits along with nail changes. Gout causes pain, joint swelling and redness, as well as occasionally tophi (monosodium urate crystal deposits), and can be difficult to differentiate from septic arthritis. Serum urate is not always raised in acute attacks but finding negatively birefringent sodium urate crystals on microscopy of aspirated joint fluid is diagnostic.

Figure 38.50 Rupture of the extensor tendons to the little and ring fingers.

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