There is increasing focus on GPs reducing the number of referrals that they make to secondary care. Wrist and hand disorders are a good example of conditions that can be effectively managed by the GP. A good assessment in conjunction with knowledge of the relevant clinical anatomy is often all that is needed to make the right diagnosis. A confident discussion about management options will then set the patient along a realistic and appropriate path.

In a previous Hands On report* Richard Smith led us through the problems affecting the arm and elbow. Here again he presents an extremely practical approach to the assessment and management of wrist and hand problems. His clinical tips in particular are very relevant to everyday primary care. I certainly have taken many of these pointers on board for my own practice.

Simon Somerville

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Introduction

In the first part of this two-part report on the upper limb in primary care, published in 2012 (see ‘Further reading’ – Hands On: Upper limb Part 1) an in-depth method of assessment was given for upper limb disorders. The same principles of history and examination covered in the earlier review should be applied to assessing disorders of the hand. This review aims to concentrate on the more common clinical conditions affecting the hand and wrist presenting in general practice. Rather than the topographical approach used in Upper limb Part 1, the author has subdivided disorders of the hand and wrist into joint, soft tissue and neurological disorders.

JOINT DISORDERS

Infection

Any structure in the hand and wrist can become infected. This includes joints, tendon sheaths and skin. There may or may not be an obvious entry point (cut or abrasion). Joints can become infected secondary to haematological spread (in sepsis or endocarditis). The C-reactive protein (CRP) and white blood cell (WBC) count would
be expected to be elevated; however if infection is suspected an urgent referral for assessment, possible joint aspiration and appropriate antimicrobial therapy is recommended.

**Rheumatoid arthritis**

Rheumatoid arthritis (RA) is a systemic inflammatory disorder. The key manifestations of early RA in the hand are a symmetrical inflammatory arthritis with the inability to form a complete fist (ability to completely cover finger nails in fist position). Approximately 95% of patients with RA will have metacarpophalangeal involvement and 90% wrist involvement. A good history will elicit diurnal variation with >30 minutes joint stiffness and swelling. A useful question to ask is whether the patient’s rings have become ‘tighter’. Clinical examination of the hands will reveal boggy swelling in the affected joints with a positive squeeze test (see Figure 1). Other potential findings in the hands associated with RA include tenosynovitis of any tendon but classically the extensor carpi ulnaris and palmar erythema. Patients with long-standing RA and patients presenting late may develop joint deformity with boutonnière and swan-neck deformities of the fingers, Z-shaped thumbs, ulnar deviation at the metacarpophalangeal joints (MCPJs), and fusion of the wrists. Rheumatoid patients are also more prone to neurological complications affecting the hand (carpal tunnel syndrome, peripheral neuropathy, cervical myelopathy and mononeuritis multiplex).

**Management**

Early referral and intervention significantly improves the long-term outcome in RA. Where RA is suspected the following blood tests should be requested: rheumatoid factor, anti-citrullinated protein antibodies (ACPA), antinuclear antibodies (ANA) and CRP. Seronegative RA describes the subset of rheumatoid patients who start off with negative blood tests for rheumatoid factor and ACPA: some of these patients may, in due course, seroconvert. All patients with inflammatory arthritis should be referred urgently to Rheumatology and treatment started within 3 months of onset of symptoms.

**Clinical tips**

- Potential pitfalls to recognition of early synovitis include evening clinics where synovitis may not be as apparent as at a morning clinic. In this situation a good history is important.
- Initial inflammatory markers such as CRP may not always be elevated.

**Osteoarthritis**

Osteoarthritis (OA) was covered in depth in Hands On in 2011 (see ‘Further reading’). This review will concentrate specifically on OA of the thumb (1st carpometacarpal joint (CMCJ)) and degenerative mucoid cysts.

**Osteoarthritis of the thumb**

OA of the base of the thumb, or 1st CMCJ (see Figure 2), should be considered a specific subset of OA. The ability to oppose thumb and little finger allows for fine coordinated movement of the hand. Arthritis of the thumb is often painful and debilitating. OA thumb is more common in females but may affect males. It is more commonly seen in patients older than 50 years. The base of the thumb becomes squared in shape (if in doubt compare with your own thumb!) and may be red, swollen.
and painful. There may be wasting of the muscles of the thenar eminence (always look out for co-existing carpal tunnel syndrome).

Management

- **X-rays** will confirm the diagnosis of OA of the 1st CMCJ and may also show arthritis in neighbouring joints.
- **Analgesia** is often prescribed in OA thumb but is seldom effective due to the constant stresses placed upon the thumb in daily activity. Localised topical non-steroidal anti-inflammatory drug (NSAID) gel may have a mild analgesic effect without systemic side-effects.
- **Static splinting** maintains optimal joint alignment and reduces the forces that may lead to further joint deterioration or deformity. Resting thumb splints (spicas) can offer significant relief; however, where there is severe squaring of the base of thumb bespoke splints will be required to accommodate the deformity.
- **Corticosteroid injections** may offer pain relief for up to 6 months and can be repeated as necessary. Hydrocortisone should be used and care must be taken to avoid local vascular structures. Ultrasound-guided injections may be performed where blind injections have failed.
- **Surgery** should be considered for all patients who have failed to respond to the above measures or where x-rays have shown bone-on-bone arthritis. There are several surgical procedures available, the most common being excision arthroplasty of the trapezium.

**Degenerative mucoid cysts**

Degenerative mucoid cysts present as cystic ‘boggy swellings’ proximal to the base of the fingernail on joints affected by nodular OA. They represent a form of ganglion cyst attached to the joint capsule by a stalk that allows fluid to move into the cyst from the joint. They may be cosmetically unattractive but rarely interfere with hand function and are often asymptomatic unless knocked.

**Management**

The majority of cases require no investigation or treatment. An x-ray will demonstrate underlying OA of the distal interphalangeal joint (DIPJ). Aspiration is rarely effective and the cyst often re-accumulates. Infection of the cyst can lead to a septic arthritis of the DIPJ. The cyst can be surgically excised for cosmetic reasons or if the cyst is sufficiently large or painful to interfere with the nail or hand function.

**Crystal arthritis**

**Gout**

Gout was covered in detail in Hands On in 2011 (see ‘Further reading’). Gout of the joints of the hand and wrist rarely occurs as a primary presentation. Usually there is a history of preceding podagra or polyarticular or tophaceous gout. An exception to this is elderly patients with pre-existing OA developing gout in these susceptible joints. This is seen most commonly in patients on diuretic therapy or with significant chronic kidney disease.

**Management**

Acute attacks of gout may be treated with simple NSAIDs, colchicine or prednisolone, the choice depending upon co-morbidities. Recurrent (more than three) attacks warrants introduction of urate-lowering therapy (ULT). The most commonly prescribed ULT is allopurinol. A target serum urate of <300 μmol/l should be aimed for in all patients on ULT. For the comprehensive management of gout please refer to the 2011 Hands On on gout.

**Pseudogout (acute calcium pyrophosphate deposition arthritis)**

The wrist is one of the more common joints in the body affected by pseudogout (now frequently referred to as acute calcium pyrophosphate deposition arthritis). X-rays may show chondro-
calcination (calcification) within the wrist joint and aspiration reveals synovial fluid containing calcium pyrophosphate dihydrate (CPPD) crystals seen on polarising microscopy.

Management
Most patients with pseudogout respond to simple NSAID therapy. If NSAID therapy is contraindicated, colchicine or corticosteroids (oral, intra-muscular or intraarticular) may be used. A wrist splint will provide comfort while the joint is inflamed. Several disease-modifying anti-rheumatic drugs (DMARDS) have been approved by the European League Against Rheumatism (EULAR) to treat pseudogout. Patients with severe, recurring disease should be referred to Rheumatology for further investigation of underlying metabolic disorders and DMARD treatment.

SOFT TISSUE DISORDERS

Trigger finger
Trigger finger (or thumb) (see Figure 3) occurs when the respective flexor tendon of a finger becomes thickened or develops a nodule. Upon flexion of the digit the nodule can become stuck behind one of several pulleys that hold the tendon down. The patient will describe the finger as locking in a flexed position; the finger can then often be manually straightened with a sudden release.

This may be painful or occasionally pain-free. The exact cause of trigger finger is unknown; however it most commonly occurs in patients older than 40 years, more commonly in females than males. It may also be associated with underlying medical conditions such as RA or diabetes.

De Quervain’s tenosynovitis
De Quervain’s tenosynovitis is a stenosing tenosynovitis of the first extensor compartment of the wrist and leads to pain on the radial (thumb) side of the wrist and impaired function of the wrist and hand. This condition is colloquially termed ‘washerwoman’s thumb’ due to the high incidence seen in women who wash clothes by the traditional hand method. It occurs commonly in women and usually affects 30–50-year-olds. It occurs as the tendon sheath containing the extensor pollicis brevis and abductor pollicis longus becomes thickened and inflamed. The patient presents with pain, tenderness and swelling over the radial side of the wrist and difficulty gripping.

Management
The diagnostic test for de Quervain’s tenosynovitis is Finkelstein’s test (with the thumb flexed across the palm of the hand, ask the patient to move the wrist into flexion and ulnar deviation, as shown in Figure 4: a positive test results in pain along the distal radius). This test will also be painful in patients with OA of the CMCJ and it is recommended to screen this joint first by palpating for tenderness either side of the CMCJ, avoiding direct compression of the tendons.

Treatment involves avoidance and modification of exacerbating thumb and wrist movements. Thumb splints (spicas) can provide immediate relief. It is essential when prescribing a splint to make sure it is a specific thumb splint rather than a wrist splint that does not immobilise the thumb. To avoid confusion it is best to prescribe a ‘thumb spica’ rather than a splint.
In resistant cases a corticosteroid injection into the tendon sheath is often very effective. Resistant cases can be referred for ultrasound-guided injections or surgical decompression.

**Clinical tips**
- For all superficial soft-tissue injections hydrocortisone is preferred as it is more soluble, leading to fewer complications than its less soluble counterparts.
- Pregnant women often develop carpal tunnel syndrome. Postpartum women often develop de Quervain’s tenosynovitis.

**Intersection syndrome**
Intersection syndrome is tenosynovitis of the radial wrist extensors caused by friction where the tendons of the second extensor compartment (extensor carpi radialis longus and extensor carpi radialis brevis) pass under the tendons of the first extensor compartment (extensor pollicis brevis and abductor pollicis longus – the tendons affected in de Quervain’s tenosynovitis). Patients present with pain and swelling in the distal dorsoradial forearm. Intersection syndrome is caused by activities that require repetitive wrist flexion and extension (racquet sports, weightlifting, rowing or canoeing) or by direct trauma to the second extensor compartment.

**Management**
The patient will present with pain and swelling (often subtle) over the distal dorsoradial aspect of the wrist. There may be palpable crepitus with wrist extension. The key differential diagnosis is the more common de Quervain’s tenosynovitis. Treatment involves avoidance and modification of exacerbating hand and wrist movements. A thumb spica and NSAIDs may offer temporary relief. A localised hydrocortisone injection may offer relief in resistant cases. Surgery involves tendon release and is seldom required.

**Thumb ulnar collateral ligament damage**
The ability to pinch, grasp and oppose the thumb constitutes approximately 50% of hand function. The ulnar collateral ligament of the MCPJ of the thumb may be injured acutely (‘ski-pole thumb’) or more chronically by overuse (‘gamekeeper’s thumb’). The mechanism of injury is by either an acute sudden or repetitive hyperabduction of the thumb. The resulting injury leads to pain, weakness and significant instability of the thumb.

**Management**
The diagnosis should be suspected in anyone with an appropriate history and increased joint movement on stressing the ulnar aspect of the 1st MCPJ. If complete rupture occurs there may be no firm end-point felt (always compare with the contralateral thumb).

An x-ray of the thumb should be requested to look for an avulsion fracture. The thumb should be splinted in a thumb spica. All acute injuries should be referred for urgent surgical repair of the ligament. Chronic overuse injuries may respond to splinting, physiotherapy and avoidance of the mechanism of injury, providing the ligament is intact. Specific stress-view x-rays may help in determining the integrity of the ligament.

**Mallet finger**
Mallet finger (‘dropped finger’) (see Figure 5) is the term used to describe an injury of the extensor digitorum tendon at the DIPJ. The most common cause of this is direct trauma due to a ball (basketball, netball, volleyball) hitting an outstretched finger causing hyperflexion of the DIPJ and extensor digitorum tendon. In acute cases
the patient will present with a painful ‘dropped finger’ (inability to fully extend the finger at the DIPJ).

**Management**
An x-ray should be requested to show the extent of any bony avulsion of the tendon at the DIPJ. The finger should be splinted in full extension for 4–6 weeks. Surgical treatment should be considered where the mallet finger presents as an open injury, where the bony mallet involves more than 30% of the articular surface of the joint, or if passive extension cannot be achieved.

**Dupuytren’s contracture**
Patients present with thickening of the palmar fascia classically affecting the 4th and 5th digits. This ‘cord-like’ fibrotic thickening may contract and cause significant deformity and function loss. Dupuytren’s disease affects 2 million people in the UK. It is more common in men, and tends to occur in their 40s and 50s. It is most commonly inherited (autosomal dominant) but may also be associated with repetitive microtrauma, alcoholic liver disease, diabetes and HIV and is linked with smoking.

**Management**
The diagnosis of Dupuytren’s is clinical. Imaging is not required. The early stages of Dupuytren’s contracture can be treated conservatively with simple stretching exercises. Intervention should be considered in patients who cannot place their hands flat on a table due to contracture. Interventional treatment depends upon the staging and severity of the contracture.

Xiapex is a new licensed treatment involving the injection of collagenase derived from clostridium histolyticum into the pathological collagen cord followed by a series of manipulations. Studies have shown a reduction in contracture to 0–5° of full extension 30 days after the final injection.

Surgery is indicated where there is severe contracture or a painful nodule or in extreme cases (>90° flexion contracture) where the vascular supply of the digits affected can be compromised and amputation of these digits may be required.

**NEUROLOGICAL DISORDERS**
This review will concentrate on entrapment of nerves occurring at the hand and wrist. The differential diagnosis of any neuropathy of the hand is broad and includes more proximal entrapment of a peripheral nerve, brachial plexus disease/injury, radiculopathy and cerebral lesions as well as peripheral neuropathies and mononeuropathy multiplex (vasculitis of the arterial supply of the nerve). A good history and examination should help differentiate between these conditions (see ‘Further reading’ – Upper limb Part 1).

**Carpal tunnel syndrome**
Carpal tunnel syndrome is a compressive neuropathy of the median nerve at the wrist resulting in dysesthesiae (pain) or numbness in the lateral 3½ fingers and possible weakness of the muscles of the thenar eminence (thumb). Carpal tunnel syndrome was covered in detail in Hands On in 2004 (see ‘Further reading’).
The traditional carpal tunnel provocation tests are covered in the earlier Hands On report. However with its sensitivity of 86% and specificity of 95% the author finds the flexion compression test (wrist flexion to 60% with pressure applied with the thumb over the median nerve at the carpal tunnel held for 30 seconds) to be a very useful adjunct to Phalen’s and Tinel’s tests.

The diagnosis of carpal tunnel syndrome may be made clinically, however. Nerve conduction studies (NCS) and electromyography will help to confirm the diagnosis and severity and may also help differentiate between carpal tunnel syndrome and cervical radiculopathy.

**Management**

The use of nocturnal wrist splints can give symptomatic relief and will allow carpal tunnel syndrome to settle in 30% of cases. Splinting will also help prevent further deterioration in patients awaiting surgical decompression. Local corticosteroid (hydrocortisone) injections improve symptoms in 70–80% of patients but may require repeat injections. Failure of corticosteroid injections or power loss should prompt referral for surgical decompression of the carpal tunnel.

**Clinical tips**

- Bilateral carpal tunnel syndrome may be seen in RA and should prompt investigation for an underlying inflammatory arthritis.
- Carpal tunnel syndrome in pregnancy often responds to wrist splinting.
- It may be difficult to differentiate between carpal tunnel syndrome and a C7 radiculopathy. Clinically sensory disturbance in carpal tunnel syndrome splits the ring finger in half whereas C7 radiculopathy often has less precise boundaries.

**Ulnar nerve**

**Guyon’s canal syndrome**

The ulnar nerve can become compressed at the wrist within Guyon’s canal. Typical risk factors for Guyon’s canal syndrome are overuse of the wrist (especially flexion, rotation and gripping – weightlifters), constant direct pressure over the canal itself (cyclists with dropped handlebars, crutch use) or mechanical impingement (wrist arthritis, fractured hamate classically seen when golfers strike the ground and not the ball! and rarely due to thrombosis of the ulnar artery).

The ulnar nerve provides sensation to the medial 1½ digits and power to the hypothenar eminence. Depending upon exactly where within the Guyon’s canal the ulnar nerve is damaged presentation may involve pure sensory disturbance, pure motor disturbance, or a combination of both. Tinel’s test (tapping the finger over the Guyon’s canal) will often precipitate clinical symptoms.

**Management**

The diagnosis should be made clinically but can be confirmed with NCS (a negative NCS does not completely rule out compression). The differential diagnoses are cubital tunnel syndrome, lower pole brachial plexus disease and T1 radiculopathy.

If the motor supply is affected the patient may have wasting of the small muscles of the hand and the hypothenar eminence along with a positive Froment’s and Wartenberg’s test (see ‘Further reading’ – Upper limb Part 1).

Conservative treatment involves identification of the cause and appropriate intervention, i.e. padded gloves or handlebar adjustment for cyclists, ergonomic advice and physiotherapy in overuse syndromes, and appropriate management of any underlying arthritis or fracture. Local hydrocortisone injections can be beneficial, avoiding the close-lying ulna artery. In resistant cases or cases presenting with hypothenar muscle-wasting referral should be made for surgical decompression.

Urgent surgical referral should be made where the ulna nerve is compressed due to a fractured hamate or to the rare thrombosis of the ulnar artery.

**Clinical tips**

- Guyon’s canal and carpal tunnel syndromes may (rarely) co-exist.
- Guyon’s canal syndrome may occasionally co-exist with cubital tunnel syndrome (double-crush syndrome). An NCS is diagnostic in these cases.
Radial nerve

Cheiralgia paraesthetica (‘handcuff neuropathy’)

Entrapment neuropathy of the radial nerve may occur at the wrist (cheiralgia paraesthetica). The radial nerve at this level provides sensation to the anterior aspect of the 1st MCPJ and the posterior lateral 3½ fingers excluding the finger tips. Cheiralgia paraesthetica may be seen in prisoners with tight handcuffs or where there has been excessive struggling against a normal handcuff. Tight watches, bands or bracelets may also cause this condition.

Management

The condition usually settles with conservative therapy (avoidance of compression) but may take up to 2 months. Complete anaesthesia suggests complete severance of the radial nerve and should prompt urgent surgical referral.

Clinical tips

- Conventional upper limb NCS may only test the more commonly affected ulnar and median nerves. It is important to request radial NCS in cases of suspected cheiralgia paraesthetica.
- The radial nerve is commonly injured more proximally (‘Saturday night/honeymooner’s palsy’, fractured humerus). In this case motor function at the wrist is affected, resulting in unopposed wrist flexion (‘wrist drop’).

Conclusion

Disorders of the upper limb may be challenging in terms of both diagnosis and management. Any of the anatomical structures, including joint, ligaments, tendons and nerves, may be involved, and in addition disorders of the elbow, wrist or hand may be the first presenting feature of a more systemic disease. The systematic approach adopted by the author, incorporating useful tips in history-taking and clinical examination and treatment, both in this report and in Hands On Upper limb Part 1, should help facilitate accurate diagnosis and essential management.

Acknowledgement

I am grateful for the help of my former colleague Dr Rakhi Seth in the preparation of this report.

Further reading

Barnardo J. Carpal tunnel syndrome. Hands On (Series 5) No 3; 2004 June.


Continuing professional development (CPD) task

Carpal tunnel syndrome Experience from musculoskeletal referrals shows that a brush-up of the knowledge of the clinical anatomy of the median nerve is needed for some GPs.

- Can you recall the sensory and motor distribution of the median nerve?
- How would you test for weakness caused by median nerve pathology?
New complementary therapies report

Practitioner-based complementary and alternative therapies for the treatment of rheumatoid arthritis, osteoarthritis, fibromyalgia and low back pain

Arthritis Research UK has produced a new report looking at the effectiveness of a number of complementary therapies based on existing clinical trial data. The findings present a mixed picture, revealing a lack of scientific evidence for a number of popularly-used therapies such as copper and magnetic bracelets.

However, a handful of therapies were rated highly: acupuncture for osteoarthritis, low back pain and fibromyalgia; massage for fibromyalgia and low pain pain; t’ai chi for osteoarthritis; and yoga for back pain.

The report is a companion to an earlier report looking at complementary medicines, Complementary and alternative medicines for the treatment of rheumatoid arthritis, osteoarthritis and fibromyalgia, which has now been updated and rebranded. Both reports are available as pdfs on our website or as hard copy from:

0800 389 6692 or info@arthritisresearchuk.org.
Do you see patients with palindromic rheumatism?

They could help in new research to learn more about this little-understood condition.

As you may be aware, palindromic rheumatism is a rare form of inflammatory arthritis. People who have it experience multiple ‘flares’ during which their joints become painful, stiff and swollen. Flares can happen very quickly but are usually relatively short-lived, affecting different joints at different times. Between attacks, joints tend to go back to normal, making diagnosis difficult.

Supported by a generous grant from a charitable trust, Arthritis Research UK is conducting a programme of work on palindromic rheumatism, starting with a survey of people who have been diagnosed with it.

If you have patients who might like to take part in the survey and help us understand more about palindromic rheumatism, we’d love to hear from them by telephone on 0300 790 0400 or by email: enquiries@arthritisresearchuk.org.

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Would you like to develop your knowledge or skills?

Arthritis Research UK is pleased to offer a number of training bursaries for GPs wishing to develop a specialist interest in MSK medicine and surgery. The bursaries will provide GPs with an opportunity to gain qualifications that will promote the delivery of high-quality local care to patients.

Arthritis Research UK will fund up to half of the tuition fees for a postgraduate course in the field of arthritis, musculoskeletal medicine or surgery leading to a PGCert, PGDip, Master’s degree or similar recognised qualification. The scheme has a rolling deadline so you can apply at any time. For further details please visit our website www.arthritisresearchuk.org and search for ‘bursaries’.
Do you want to update your MSK core skills?

Arthritis Research UK and the Royal College of General Practitioners launch new core skills training for GPs and GPSTs

Each year 20% of the population will consult their GP with a musculoskeletal problem such as arthritis and it is estimated that every day there are over 100,000 musculoskeletal GP consultations in England alone.

It is essential that GPs feel confident in their ability to treat common musculoskeletal conditions. However they often don’t fit neatly into the typical diagnosis, treatment and cure model.

Working with the Royal College of General Practitioners, Arthritis Research UK has funded and jointly developed a new training programme to improve GPs’ and GPSTs’ core skills in diagnosing and managing musculoskeletal conditions.

The Core Skills in Musculoskeletal Care Project has been developed by GPs for GPs and draws on the latest evidence and consensus thinking.

The training project consists of e-learning modules, face-to-face workshops focused on clinical skills, and an ‘impact toolkit’ which contains practical resources for GPs.

You can access the free e-learning modules at www.elearning.rcgp.org.uk/msk.

Go to www.arthritisresearchuk.org/gpresources to download GP resources and self-management information for your patients.
Do you want to update your MSK core skills?

Arthritis Research UK and the Royal College of General Practitioners launch new core skills training for GPs and GPSTs

Please see overleaf for full details, including a link to the free e-learning modules.

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