Feel

Feel

Ask the patient if they have any areas of tenderness. Ensure that you do not cause the patient pain – watch their face as you feel. It may be easier (especially with children) to feel the normal side first. tion in Pyrford, UK, which became internationally known as the

Presentation Head movement lacks coordination. No regular cadence Head moves from side to side (windscreen wiper) Head dips. Cadence dot/dash Head rocks to and fro

The aim of sensory testing is to establish a pattern of sensory loss. Look for a dermatomal (may indicate spinal root or periph eral nerve pathology) or glove-and-stocking distribution (may indicate a neuropathy , e.g. diabetes). Perform a screening test by lightly stroking both limbs. Record whether the patient feels a di ff erence . If none is noticed there is no need to spend more time on the neurological examination. If there is a di ff erence, then a full neurological examination should now be performed. Soft tissues /uni25CF Tenderness . Try to determine the actual anatomical structure from which the pain arises (e.g. subcutaneous fat, bursae, nerves, arteries). /uni25CF Lumps and e ff usions . Determine the characteristics of any lump or e ff usion using Table 35.2 as a guide. /uni25CF Pulses . Palpate the distal pulses (or capillary return) of the limb. Recording distal neurovascular status both before and after surgery is important. Absence of distal pulses is an absolute contraindication to elective surgery in that limb. Acute loss of circulation to a limb is a surgical emer gency . Bone Palpate the contours of the joint and assess for tenderness. For superficial joints, such as the knee, the joint line can be felt and checked for lumps and tenderness. Feel

Palpate, with one hand supporting the patient’s pelvis. Feel

/uni25CF Skin . If there is any question of abnormal sensation on a simple stroke test comparing both sides, proceed to the two-point discrimination test using the sharp ends of a paper clip. Record the minimum distance between the tips of the paper clip at which the patient is able to recognise two points. Table 35.8 describes the anatomical regions supplied by the median, ulnar and radial nerves. /uni25CF Pen sliding test . To assess the absence or presence of sweating, slide a pen along the radial border of the in dex finger. If the pen slides smoothly , this may indicate loss of sweating. /uni25CF Soft tissue . Feel for muscle bulk and tendon thickening. Feel bony prominences, radial styloid, ulnar styloid and the anatomical snu ff box. Feel for sensation using two-point discrimination of the medial nerve (radial aspect of the index finger), radial nerve (in the anatomical snu ff box) and ulnar nerve (ulnar aspect of the little finger). William Heberden (Senior), 1710–1801, physician, practised first in Cambridge and later in London, UK. Charles Jacques Bouchard , 1837–1915, physician, Dean of the Faculty of Medicine, Paris, France. Boutonnière is Fr enc h for ‘buttonhole’. Edgar van Nuys Allen , 1900–1961, Professor of Medicine, The Mayo Clinic, Rochester, MN, USA. Jules Tinel , 1879–1952, Physician, Hôpital Beaujon, Paris, France. George S

Phalen , contemporary orthopaedic surgeon and Chief of Hand Surgery , The Cleveland Clinic, Cleveland, OH, USA. He helped to establish the American Society for Surgery of the Hand. /uni25CF Blood vessels : check the radial and ulnar artery pulses; assess the capillary refill time, which is normally less than 2 seconds; Allen's test should also be performed before surgery (Table 35.9 and Figure 35.10). /uni25CF Nerves : compressive neuropathies are most commonly seen a ff ecting the median nerve (see Tinel's [Figure 35.11a] and Phalen's [Figure 35.11b] tests in Table 35.9). /uni25CF Palmar fascia : feel for palmar thickening and skin pits; long finger-like structures (cords), most commonly a ff ecting the ring and little fingers, are suggestive of Dupuytren's disease. /uni25CF Bones . Palpate from the radial to the ulnar side of the wrist joint. In the trauma setting, palpate the anatomical snu ff box (Figure 35.12): a fracture of the scaphoid may cause tenderness (see Chapter 32). The scaphoid tubercle, pisiform and the hook of hamate are all palpable on the volar aspect of the wrist. -

Anatomical site Name Association DIPJ Heberden's Osteoarthritis nodes PIPJ Bouchard's Osteoarthritis node Boutonnière Rheumatoid Hyperextension of the MCPJ, deformity arthritis /f_l exion of the PIPJ and hyperextension of the DIPJ Hyperextension of the MCPJ and Swan neck Rheumatoid PIPJ and /f_l exion of the DIPJ deformity arthritis Rheumatoid Z deformity Flexion of the MCPJ with arthritis of the hyperextension of the thumb interphalangeal joint Subluxation of the MCPJ Ulnar drift Rheumatoid arthritis DIPJ, distal interphalangeal joint; MCPJ, metacarpophalangeal joint; PIPJ, proximal interphalangeal joint. TABLE 35.8 Sensory distribution of the nerve supply to the hand. Nerve Sensory distribution Ulnar Little /f_i nger and ulnar half of the ring /f_i nger Median Thumb, index, middle and radial half of the ring /f_i nger Radial Base of the thumb on the dorsum of the hand

Figure 35.10 (a–c) Performing Allen's test. TABLE 35.9 Special hand tests. Test Technique Allen's test Elevate the hand and apply digital pressure on the radial and ulnar arteries to occlude them. Ask the patient to make a /f_i st several times. The tips of the /f_i ngers should go pale. Release each artery in turn and observe the return of colour Tinel's test Tap over the nerve of interest. Tingling may indicate nerve compression Phalen's test Place the wrist in maximum /f_l exion with the elbows extended Froment's sign Ask the patient to grip a sheet of paper between the index /f_i nger and thumb of both hands. Grip the paper yourself similarly. Ask the patient to resist as you attempt to pull the paper away

Feel

/uni25CF Soft tissues . An e ff usion may be detected by perform ing a cross-fluctuation test. The ulnar nerve can be rolled under your fingers placed between the medial epicondyle and the olecranon. Test the distal sensation in the hand (especially in the distribution of the ulnar nerve) and assess the vascular status. /uni25CF Bones . The three palpation landmarks are the medial and lateral epicondyles and the apex of the olecranon. These form an equilateral triangle when the elbow is flexed to 90°. The radial head is palpated with the exam iner's thumb while the other hand pronates and supinates the forearm. On the medial side, palpate the medial epi . Posteriorly , palpate the olecranon fossa. condyle /uni25CF Flexion–extension . The normal range is from –5° (slight hyperextension) to 150°. Ask the patient to bend the elbow from the fully straight position (Figure 35.20). /uni25CF Pronation and supination . With the elbows at 90° and the palms facing upwards (full supination), ask the patient to turn the forearm so that the dorsum of the hand faces

upwards (full pronation) (Figure 35.21). The normal values are 70° pronation and 90° supination. - - - - - -

(a) (b) Figure 35.20 (a) Elbow /f_l exion; (b) elbow extension. (a) (b) (c) Figure 35.21 Testing forearm rotation: (a) mid-prone position; (b) full supination; (c) full pronation.

Tennis elbow and golfer’s elbow Both conditions are inflammatory processes of the tendons that attach the large muscle mass of the forearm to the lateral or medial epicondyle. /uni25CF Medial epicondylitis (synonym golfer’s elbow). The medial epicondyle is the common origin of the forearm flexors and the pronator muscle. Palpate the medial epicondyle for tenderness. The diagnostic test is resisted wrist flexion, which reproduces the pain over the medial epicondyle. /uni25CF Lateral epicondylitis (synonym tennis elbow). The lateral epicondyle is the common origin of the forearm extensors. Palpate for tenderness – usually just distal (5–10 /uni00A0 mm) to the epicondyle near the origin of the exten sor carpi radialis brevis muscle. Wrist extension against resistance with the elbow extended should provoke the patient’s symptoms. Summary box 35.5 Elbow examination /uni25CF /uni25CF /uni25CF /uni25CF /uni25CF /uni25CF /uni25CF /uni25CF /uni25CF /uni25CF

Inspection of the standing patient Front – asymmetry, carrying angle, deformity Back – olecranon fossa Inspection of the supine patient Skin, scars, soft tissues, deformity Palpation of bony structures Movements Flexion and extension, pronation and supination Special tests Tennis and golfer’s elbow

Feel

Generalised pain in the shoulder may arise from the neck or the shoulder joint itself. More localised pain is often indicative of acromioclavicular joint pathology . /uni25CF Skin . Test sensation in the upper part of the lateral aspect of the arm (‘regimental badge area’) (Figure 35.22). Loss may indicate damage to the axillary nerve (following shoul - der dislocation). - /uni25CF Bones . Palpate the acromioclavicular and sternoclavicu - lar joints and the clavicle.

Figure 35.22 The area of skin supplied by the axillary nerve – the ‘regimental badge area’.

Feel

/uni25CF Soft tissues . Tenderness overlying the greater tro - chanter may suggest trochanteric bursitis or an abductor enthesopathy . /uni25CF Bone . Bony landmarks can be palpated; these include the anterior superior iliac spine (ASIS), iliac crest and the greater trochanter of the femur. Other areas for palpation include the inguinal ligament, which may have a local hernia or lymphadenopathy . The fem - oral artery can be palpated as it passes under the inguinal liga - ment at its midpoint halfway betw een the ASIS and the pubic tubercle. Feel

/uni25CF Soft tissue . Feel the tendons for quadriceps and patellar tendon rupture. /uni25CF Fluid displacement or stroke test . First empty the medial side of the knee by stroking any fluid up from the medial side into the suprapatellar pouch. Then place your hand on the superior aspect of the suprapatellar pouch and move it inferiorly , attempting to displace any fluid into the knee joint. Maintain your hand at the level of the superior pole of the patella. Now look to see whether the normal gutters on either side of the knee are less noticeable because of fluid distension. Stroke the

back of your hand over each gutter in turn. Look at the opposite gutter to see if there is cross-filling. /uni25CF Patellar tap test . This test is used when a large e ff usion is present. Place one hand on either side of the patella and, with the other hand, push down on the patella. With an e ff usion, fluctuance is present as the patella moves towards - the joint. /uni25CF Bone . Feel the tibial tuberosity , inferior pole of the patella, patellar facets, origin and insertion of the knee ligaments and joint line (medial and lateral). Remember to palpate for any popliteal swellings. Note the height of the patella.

(b) Figure 35.30 (a) Knee /f_l exion; (b) extension.

Feel

/uni25CF Skin . Reduced sensation in a glove-and-stocking distribu - tion is seen with diabetes.

(b) Clini

Proximal interphalangeal joint Distal interphalangeal joint Flexion Flexion Flexion Flexion Normal Flexion Normal –

/uni25CF Soft tissues . The posterior tibial and the dorsal pedis pulses should be identified (Figure 35.36). Palpate the tib ialis anterior tendon and the long extensor tendons on the dorsum of the foot. From the back, palpate the Achilles tendon. Palpate the peroneal tendons from the lateral side and the tibialis posterior tendon from the medial side. The sinus tarsi can be assessed. T his is an anatomical space bounded by the talus and calcaneus and is recognisable as a soft-tissue depression anterior to the lateral malleolus. It is filled with fat and the extensor digitorum brevis mus cle. Sinus tarsi syndrome may occur. This may be caused by injury to the interosseous talocalcaneal ligament or the subtalar joint. There is pain and tenderness over the sinus tarsi with subjective hindfoot instability . The pain is char ved by local anaesthetic injection. acteristically relie /uni25CF Bones . Feel for deformity , bony prominences and loose bodies: /uni25CF ankle joint : the medial and lateral malleoli, anterior and posterior joint line, lateral gutter and ligament com plex, the syndesmosis (front of the ankle), medial gutter and medial ligament complex; /uni25CF subtalar joint : palpate each facet; /uni25CF midtarsal joints : the talonavicular and calcaneocuboid joints; TMTJ is several millimetres proximal to the others; movement is minimal in the second ray , limited in the third ray , moderate in the fourth and fifth rays and very variable in the first ray . /uni25CF Specific structures to palpate: /uni25CF calcaneus (heel bone): the most common cause of pain is plantar fasciitis; this may present with numbness, burn - ing and electric shock sensations, which are worse in the morning and improve as the day goes on; identify the exact point of tenderness; /uni25CF tendons : examine for contracture of the Achilles tendon insertion and the peroneal or tibialis posterior tendons; /uni25CF head of talus : invert and evert the patient’s foot; /uni25CF sustentaculum tali : palpate one fingerbreadth below the medial malleolus; this important structure serves as an attachment for the spring ligament; /uni25CF cuneiforms (medial, middle and lateral), MTPJs, web spaces and all the forefoot bones.

(b) Figure 35.36 (a) Palpation of the posterior tibial pulse. (b) Palpation of the dorsalis pedis pulse.

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