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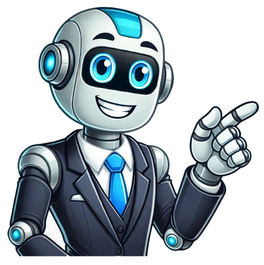

Naem of test adduction in hand

Hand Examination and Neurovascular Testing The hand examination follows a systematic approach: Look: - Discolouration (white for arterial insufficiency, erythema for cellulitis/infection, blue/purple for venous congestion) - Benign lesions (Heberden’s nodes, Garrod’s pads), malignant lesions (SCCs, melanomas, actinic keratoses) - Nails: trauma, signs of systemic co-morbidities Feel: - Skin texture: clubbing, pitting, Koilonychia - Thickening/discolouration, swelling/oedema - Trauma-related: dorsal wrist ganglion, deformity, absence of normal anatomy - Asymmetry with another limb - Rotation of digits - Scars, palmar nodules (Dupuytren’s) - Swellings/oedema Move: - Special tests (neurovascular testing): Modified Allen's Test, Capillary refill - Tenderness, joint effusion, masses - Crepitus/clinking/snapping - Assess blood supply: radial and ulnar pulses - Motor testing: triceps, extensor compartment; sensory testing: first web space, little finger The sensation of pulp can be sharp or blunt, and two-point discrimination is used to assess it. Tinel's sign is also used, where tapping on the volar wrist elicits paraesthesia in the distribution of the nerve. In neurological assessments, various movements of the thumb are evaluated, including abduction by the abductor pollicis longus and brevis muscles. The abductor pollicis longus moves the thumb anteriorly and perpendicular to the palm at the 1st carpometacarpal joint, while the abductor pollicis brevis abducts the thumb at the 1st CMC and metacarpophalangeal joints. The dorsal interosseous muscles abduct the ring, middle, and index fingers, inserting on the proximal phalanges and extensor expansions. In contrast, the palmar interosseous muscles adduct the pinky, ring, middle, and index fingers. The mnemonic PAD DAB is used to remember the actions of dorsal vs palmar interosseous functions. Ulnar nerve palsy can result in attenuated function of the palmar interossei, leading to loss of pinky adduction component, as seen in Wartenberg sign. The Wartenberg sign indicates an abnormality in the hand, specifically with the fifth finger being abducted. Meanwhile, the adductor pollicis muscle, responsible for thumb adduction, is innervated by the deep branch of the ulnar nerve. A patient exhibiting the Froment sign may have an ulnar nerve palsy affecting this muscle. To perform a thorough examination, introduce yourself and obtain consent from the patient, ensuring they are comfortable with the process. Begin by washing your hands and preparing the examination area. Ask the patient to sit on the edge of the bed, adequately exposing their hands. Observe for any signs of pain or abnormal movements in the shoulder and elbow joints. Check for fatigue or stiffness in the joints, common in patients with rheumatoid arthritis or osteoarthritis. Carefully examine the patient's face for any psoriatic skin changes and observe the hands for a wrist drop caused by a lesion to the radial nerve. Look for paraphernalia around the bed that may indicate the presence of walking aids due to hip or knee osteoarthritis. Ask the patient to place their hands on their shoulders, allowing you to inspect their elbows and surrounding area for psoriatic plaques or rheumatoid nodules. Examine the dorsal aspect of the hand from various angles, searching for any asymmetry or swellings, particularly at the MCP and PIP joints in patients with rheumatoid arthritis. Note any deformities such as ulnar deviation of the 4th finger, a common finding in rheumatoid arthritis. Additionally, inspect the hands for any signs of pain, as patients with joint conditions may exhibit sensitivity to examination. At the MCP joint, late-stage rheumatoid arthritis often features symmetrical ulnar deviation. A similar presentation in Klumpke's palsy is characterised by a claw hand with wrist flexion and fingers flexed at PIP and DIP joints. Ulnar claw deformity results from damage to the ulnar nerve, which leads to flexion of the ring and little fingers only. Visible muscle wasting might indicate chronic pathology or a nerve lesion, while scars could suggest previous surgery. The ulnar nerve supplies all visible muscles in this position, making it essential to remember DAWSS: deformity, asymmetry, wasting, swelling, or scars. For muscular anatomy and innervation of the hand, three major compartments are involved in movement: anterior forearm, posterior forearm, and intrinsic muscles. These muscles facilitate fine movements like abduction, adduction, and opposition of various digits. The ulnar nerve usually supplies all other hand muscles except for those innervated by the median nerve. Klumpke's palsy is a partial palsy resulting from brachial plexus injury, particularly during sudden arm abduction or when falling. This condition presents with paralysis of intrinsic hand muscles and Horner's syndrome due to T1 root involvement. The ulnar nerve damage often occurs at the elbow's ulnar groove due to trauma, affecting flexion and extension in ring and little fingers, leading to ulnar claw deformity. Ulnar Paradox: Inspecting Palmar Aspects Turn patient's hands over; inspect palmar aspects for nodules, signifying trigger finger or Dupuytren's contracture linked with liver pathology. Muscle Wasting and Nerve Supply Look at thenar eminence for wasting, as median nerve supplies these muscles. Thenar wasting is seen in carpal tunnel syndrome. Trigger Finger: A Sensation of Catching Inflammation of flexor tendons causes nodule formation; during finger flexion, this "catches," releasing suddenly with a sensation like "triggering a gun." Unknown Cause and Joint Deformities Cause of trigger finger is usually unknown; observe for osteoarthritis (Bouchard's nodes at PIPs, Heberden's nodes at DIP joints), rheumatoid arthritis (Boutonniere's or Swan neck deformity), or psoriatic arthritis (psoriasis symptoms like pitting or onycholysis). Assessing Hand Joints and Nails Check for swelling in digits, known as sausage finger; if swelling is symmetrical at PIPs, it may indicate early rheumatoid arthritis. Psoriatic arthritis presents with swelling of an entire digit. Rheumatoid Arthritis: Inflammation and Joint Swelling Rheumatoid arthritis causes inflammation, joint swelling, and significant deformity alongside wasting of small hand muscles. Psoriatic Arthritis: A Seronegative Spondyloarthropathy This condition is linked with autoimmune skin disorder psoriasis; if swelling predominates at DIPs, it's more likely to be psoriatic arthritis. Osteoarthritis: Progressive Joint Damage Osteoarthritis causes inflammation of cartilage around joints; in hands, it presents with Heberden's and Bouchard's nodes or damage at carpometacarpal joint of the thumb, giving a square appearance to the hands. Assessing Temperature and Pulses Check hand temperature using dorsal aspects of fingers; temperature may be raised in inflammatory or septic arthritis. Palpate radial and ulnar pulses' volume for each hand. Bony Palpation: Assessing Fractures Palpate carpal bones, metacarpals, and phalanges to assess fractures; pain at anatomical snuffbox suggests scaphoid fracture. Joint Palpation: Carefully Assess Joints Carefully palpate joints for any tenderness or inflammation. Looking for signs of inflammation starting from the wrist that could indicate inflammatory arthritis, such as tenderness, swelling, and warmth, moving down to DIP joints. Checking for pain when pressing on metacarpal heads and wrists, especially in rheumatoid arthritis. Feeling nodules or swellings is crucial, with Bouchard’s and Heberden’s nodes feeling bony and protruding from the joint. Muscle mass can indicate muscle wasting, so checking the thenar and hypothenar eminences for reduced bulk. This could be a sign of nerve damage due to median or ulnar nerve compression, such as in carpal tunnel syndrome. Sensation tests by asking if they can feel fingers, losing sensation on lateral three and a half digits, suggesting carpal tunnel syndrome. Checking flexor tendons for trigger finger, assessing range of movement at wrists and MCP joints with exercises like wrist extension, digit flexion, digit abduction, thumb opposition, and power test. Finger strength and dexterity are essential for resisting movements, particularly those involving the fingers. To assess the muscles involved, you can use specific maneuvers to test their functionality. Firstly, you can test the first dorsal interosseous and abductor digiti minimi muscles by asking the patient to move their index finger away from their little finger against resistance, or to form a pincer grip with their thumb and attempt to break it. These movements require coordination between the ulnar nerve-innervated opponens pollicis muscle in the thenar compartment. Weakness in these intrinsic hand muscles can be indicative of neurological conditions such as Klumpke’s palsy, brachial plexus trauma or compression, thoracic outlet syndrome, or Pancoast’s syndrome. In cases where bilateral hand weakness is present, it may suggest a more widespread issue like motor neurone disease or syringomyelia. Additionally, you can assess median nerve function by testing thumb abduction against resistance, which also involves the abductor pollicis brevis muscle. However, the radial nerve innervates the abductor pollicis longus muscle, which plays a role in thumb abduction as well. To further evaluate hand functionality, you can perform specific tests such as the power grip test, where the patient squeezes your finger, or pick up small objects like a 10p coin. These movements assess the muscles of the anterior forearm compartment and day-to-day dexterity. Specialized tests, such as Tinel’s and Phalen’s manoeuvres, can help confirm carpal tunnel syndrome by eliciting paraesthesia in the territory of the median nerve. The physical exam involves having the patient align their wrists so that the back sides of their hands touch and their wrists almost meet. A positive test occurs if they start to feel tingling sensations. After completing the examination, express gratitude to the patient for their time and thoroughly wash your hands once more. Consider conducting a comprehensive history, inspecting the elbow, reviewing any prior hand X-rays, and evaluating the neurovascular status of the affected limb.