

Examination, Diagnosis & Injections of the Hand and Wrist

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Objectives

- Systematic approach to MSK examination
- Common hand / wrist conditions
 - Key history points
 - Diagnostic examination features
 - How to inject

Your objectives...?

Examination

- Look
- Feel
- Move
- Special tests
- Joints above (& below...)
 - Cervical spine
 - Shoulder
 - Elbow
 - RUJs

Proximal masquerades

- Neurological
 - Cervical radiculopathy
 - Nerve compression
- Epicondylitis

Proximal screen

- Neck
 - Radicular features
- Shoulder
 - Referred symptoms
- Elbow
 - Epicondylitis; nerve symptoms

Examination- Look

- Colour
- Posture
 - Alignment
 - Tenodesis
- Scars
 - Surgical
 - Trauma
- Swellings
 - Joints
 - Ganglion cysts
 - Tenosynovitis

Examination- Feel

- Tenderness
 - Systematic anatomical sites
 - Joints; ligament attachments; tendons & sheaths
- Temperature
- Nature of swellings

- Neuro-vascular status
 - Autonomous distributions

Autonomous innervation

Nerve	Motor	Sensory
Median	Abductor Pollicis Brevis (Thenar)	Radial index tip
Ulnar	Abductor Digiti Minimi (Interossei / hypothenar)	Ulnar little tip
Radial	Extensors	Dorsal 1 st web space

Examination- Move

- Symmetry
- Forearm rotation
- Wrist
- Digits
 - Gross composite flexion
 - Nail-distal palmar crease

Special tests- nerves

- Sensation

- Trauma- Sweating (tactile adherence)
- Compression- Rule of 10's

- Motor

- Median- AbPB
- Ulnar- AbDM
- Radial- EPL

Special tests- stability

- DRUJ
 - Compare translation
 - Neutral & matched maximal Pro/Sup
- Wrist
 - Proximal row- shear SL and LTq
 - MCJ- pivot shift
 - Ulnar-sided- pseudo-stability / "Shuck"
- MP / IPJ
 - Collateral stress in extension & 30 flexion

Special tests- Tendons

- Flexor
 - FDP- mass action- isolate
 - FDS- independent- block the rest
- Extensor
 - Central slip- Boutonniere appears late
- Cascade / Tenodesis test

Injections- choose your weapon



- Steroid
- Local anaesthetic

Diagnosis- CTS

- Median nerve compression at wrist
- Tingling- spare little finger
- Pain- hand; forearm; flexor
- Precipitant- night; grip; driving
- Percussion irritability; Phalen test
- NCS; response to treatment

Injection- CTS



- Inject flexor tenosynovium
- Avoid nerves
- Steroid only; 25G
- Enter radial to FCU
- Aim distal and radial
- Passive digit motion
- Minimal resistance

Diagnosis- de Quervain's

- Irritation of the 1st dorsal compartment extensors (AbPL / EPB)
- Pain +/- swelling radial wrist
- Painful to grip / deviate
- Tender along 1st DC
- Thumb traction reproduces pain
- Ultrasound

Injection- de Quervain



- Inject tendon tunnels
- Adcortyl; 27G
- Enter away and run parallel with tendons
- Inject as withdraw
- 2nd pass
- Sausage swelling

Diagnosis- Trigger digit

- Flexor tendon “sticking” in sheath (palm)
- Pain in palm / digit
- IPJ locks flexed (thumb- extended); worse am
- Palpable nodule
- Demonstrable catching (DF wrist)
- Ultrasound flexor; sheath injection

Injection- Trigger digit



- Inject flexor sheath
- Steroid & LA; 23G
- Midline entering tendon
- Bevel facing upwards
- Gentle pressure; withdraw 'til flows
- Passive digit motion
- Swelling at IPJ

Diagnosis- Dupuytren's

- Thickening and contraction of fascia
- Initially tender nodules; deformity; catch digit
- Pits, plaques and cords
- MP / PIPJ fixed flexion
- Ultrasound

Diagnosis- Arthritis

- Swollen, painful joints; familial (knees, SJ)
- Pain, swelling, deformity
- Associated functional impairment
- Tender at joint; assoc. swelling/deformity
 - DIPJ- Mucous cyst
 - Thumb CMCJ- metacarpal adduction
- Plain radiograph

Injection- TMCJ



- Inject joint cavity
- Steroid & LA; 23G
- Enter joint line
- Little resistance
- Syringe back-fills

Diagnosis- Ganglion cyst

- Gel-filled cyst connected to synovial structure
- Swelling; local pressure effects
 - Flexor sheath; ulnar/median nerve
- Discharge (mucous cyst)
- Swelling at characteristic site; trans-illuminate
- Ultrasound

Aspiration- Ganglion cyst

- Enter all loculi
- Multiple sack punctures
- LA bleb at entry; 19G
- Gel in syringe

Summary

- Diagnosis
 - Characteristic history
 - Supportive examination findings
- Examination
 - Systematic approach: L-F-M-Special tests
 - Neuro-vascular function
 - Anatomically guided
- Injections
 - More confident if know the territory!

Any Questions?

