

Interactive Hand Clinics Number 4: Loss of extension in the ulnar digits

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Abstract

INSTRUCTIONS

The authors present a series of self assessment cases in hand surgery that demonstrate the many pathologies presenting to our tertiary referral hand unit. This case discusses the diagnosis and reconstructive strategy for an elderly patient with dorsal wrist pain who had developed loss of ulnar finger extension. Read the case report and accompanying questions and answer them in order. The solutions to the questions follow at the end.

CASE REPORT

An 80 year old woman was referred to our hand clinic with a history of 3 months dorsal wrist swelling for consideration for surgical removal of a ganglion. There was no history of inflammatory arthritis. Examination showed swan-neck deformity of the thumb with a subluxated CMCJ, obvious osteoarthritic changes at the DIPJs with Heberden's nodes and a firm swelling 2x4cm on the dorsum of the hand.

Figure 1



QUESTIONS

Q1 WHAT ARE THE FEATURES YOU WOULD LOOK FOR TO DIAGNOSE AN INFLAMMATORY ARTHRITIS?

Q2 WHY HAS THE THUMB DEVELOPED A SWAN-NECK DEFORMITY?

The patient was asked to extend the fingers in the clinical photograph below.

Figure 2



Q3 DESCRIBE THE ABNORMALITY.

Q4 GIVE A DIFFERENTIAL DIAGNOSIS FOR LACK OF MCPJ EXTENSION.

Q5 WHY ARE THE PIPJ AND DIPJ ABLE TO EXTEND?

Q6 WHAT FURTHER CLINICAL EXAMINATION IS APPROPRIATE?

Q7 LOOK AT THE RADIOGRAPHS BELOW AND DESCRIBE THE ABNORMALITIES.

Figure 3



Q8 WHAT OPERATIVE TREATMENT OPTIONS ARE AVAILABLE?

Loss of extension in the ulnar digits

ANSWERS

Q1 WHAT ARE THE FEATURES YOU WOULD LOOK FOR TO DIAGNOSE AN INFLAMMATORY ARTHRITIS?

Rheumatoid Arthritis:

- Symmetrical polyarthritis affecting the small joints of the hand
- Classical joint deformity (Boutonniere, Swan-neck, Z thumb)
- Radiocarpal and DRUJ involvement
- Stigmata of inflammatory arthritis include synovitis and vasculitic ulcers

Psoriatic Arthritis:

- Psoriatic plaques on knees and elbows
- Onycholysis
- Pitting of nails
- Mutilating deformity (“arthritis mutilans”)

Gout:

- Tophus
- Isolated monoarthritis or pauciarticular involvement

Q2 WHY HAS THE THUMB DEVELOPED A SWAN-NECK DEFORMITY?

This patient has osteoarthritis and the CMCJ of the thumb is commonly involved. The CMCJ subluxes and the 1st metacarpal becomes adducted and flexed. In order for the thumb to attain a useful functional position the MCPJ develops laxity in the volar plate as a result of increased loading in extension.

This explains the swan-neck deformity in osteoarthritis although it must be remembered that rheumatoid and osteoarthritis may coexist and appropriate stigmata of an inflammatory arthritis should be sought.

Q3 DESCRIBE THE ABNORMALITY.

There is loss of extension at the MCPJs affecting the ulnar 3 digits.

Q4 GIVE A DIFFERENTIAL DIAGNOSIS FOR LACK OF MCPJ EXTENSION.

- Ruptured extensor tendons (EDM and EDC)
- Posterior Interosseus Nerve (PIN) partial palsy (EIP preserved)
- Subluxed extensors over the MCPJs
- Subluxed MCPJs

Q5 WHY ARE THE PIPJ AND DIPJ ABLE TO EXTEND?

Intrinsic function is preserved

Q6 WHAT FURTHER CLINICAL EXAMINATION IS APPROPRIATE?

- Examination of the PRUJ and EPL (? PIN lesion)
- Examination of MCPJs and IPJs (? Full passive movements)
- Examination of DRUJ (? Subluxation and extensor tendon rupture under extensor retinaculum)
- Examination of EIP, FCR, FCU (? Possible donor tendons)

Q7 LOOK AT THE RADIOGRAPHS BELOW AND DESCRIBE THE ABNORMALITIES.

- CMCJ arthritis and secondary swan-neck deformity of the thumb

- DIPJ degeneration
- DRUJ arthritis with erosion of the sigmoid notch of the distal radius and radiocarpal degeneration

Q8 WHAT OPERATIVE TREATMENT OPTIONS ARE AVAILABLE?

The standard operative management of this problem includes a Darrach's procedure to excise the distal ulnar and extensor tendon exploration, synovectomy and externalisation from the retinaculum with reconstruction using a tendon transfer.

The options usually include transfer of the EIP and buddying of the EDC tendons but in this case there is complete loss of EDC and EDM and so a flexor transfer (FCR) was recommended.

The patient chose not to have operative intervention as she felt that she did not have a significant loss of function or pain. She was warned that she could lose index finger extension as the extensor ruptures progressed.

References

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