


Rhizarthrosis

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Foot / anke pathology

- Hallux valgus
- Hamer toe – mallet toe
- Morton neurinoma
- Quintus varus
- Hallux rigidus
- TMT 1 instability
- Fracture
- Midfoot arthrosis
- ...

- Cartilage lesion
- Impingement anke
- Os trigonum
- Pes plani valgi
- cMT
- Tenosynovitis tendon
- Peroneus brevis split
- Lateral instability
- Lesion deltoid ligament
- Fracture
- Tibiotalar – subtalar arthrosis
- ...







Hand / wrist pathology

- Carpal tunnel
- Trigger finger
- Dupuytren
- Mucoïd cyst
- Tumor
- De Quervain
- Tenosynovitis
- Entrapment nervus ulnaris
- ...

- Fracture
- Volar plate lesion
- Tendon rupture
- Ligament lesion wrist
- Arthrosis DIP-PIP-MCP
- Arthrosis wrist
- UCL lesion thumb
- ...







Rhizarthrosis





Trapeziometacarpal joint


- Osteoarthritis
 - 1 in 4 women
 - 1 in 12 men






Trapeziometacarpal joint

- “The most frequent site in the upper extremity in need of surgery for disabling osteoarthritic disease”
 - Pellegrini, Clin. Orthop (1992)





Anatomy & biomechanics

- Shallow saddle joint
 - Ligamentous constraints
 - Anterior oblique ligament (beak ligament)
 - Restraint against dorsal translation of the metacarpal

Anatomy & biomechanics

- Opposition
- Pinch

Etiology

- Genetic – Biologic
- Gender (?)
 - Female/male: 6/1
- Biomechanic
 - Instability
 - Ligaments
 - Dysplastic trapezium
 - Overload
 - 1 kg pinch = 13,42kg CMC I
 - Occupational

Clinical findings

- Pain (TM, STT, MP)
- Loss of function
- Painful pinch
- Decrease in grip strength
- Local tenderness
- ROM decrease
 - Adduction contracture
 - Hyperextension MCP
- Discrepancy between X-rays and clinic

Clinical examination

- Kapandji
- ROM
- TM joint
 - Eichhoff's test: local tenderness
 - Modified Finkelstein
- Key pinch
- Jamar

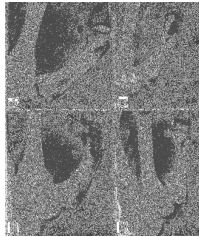
X-ray

- Kapandji
 - Frontal view
 - Sagittal view
- Eaton stress testing

Classification

- Eaton&Littler
 - Bony changes
 - Osteophytes
 - subluxation

Stage	Definition
I	Normal articular surface Possible widening of DMC joint allowing resorption Joint space narrowing Osteophytes < 2 mm Normal D2 joint
II	Severe DMC destruction with subchondral sclerosis Osteophytes > 2 mm and presence of loose bodies Normal D2 joint
IV	DMC and D2 joints are both affected



Co-existing pathology

- Co-existing: Carpal tunnel syndrome
- Differential diagnosis:
 - De Quervain
 - Trigger thumb
 - Scaphoid fracture
 - FCR tenosynovitis
 - STT arthritis

Conservative treatment



Surgical options

- Ligament reconstruction - Osteotomy
- Trapezial excision
- Ligament reconstruction with or without tendon interposition
- Joint replacement
- Arthrodesis

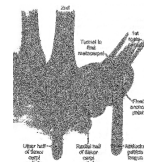
Ligament reconstruction - Osteotomy

- Central role beak ligament
- Start degenerative arthritis in palmar region



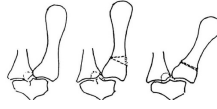
Ligament reconstruction

- Stage I
- 1973: Eaton & Littler
 - Volar ligament reconstruction (FCR)
 - Results depending on arthrotic changes



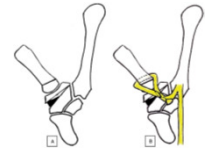
Osteotomy

- Wilson osteotomy
 - Early-stage CMC arthritis
 - Extension osteotomy MC1:
 - Unloading palmar aspect
 - Decreasing pain and slowing progression of arthritis
 - Results
 - Improvement in grip and pinch strength
 - Short follow up studies (radiographic progression)



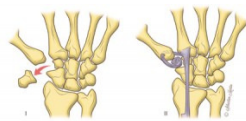
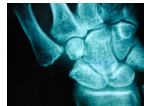
Osteotomy

- Abduction osteotomy + opening wedge osteotomy
 - Kapandji
 - Avoids closing first web



Surgical treatment

- 1949: Gervis
 - trapeziectomy
- 1986: Burton & Pellegrini
 - LRTI arthroplasty



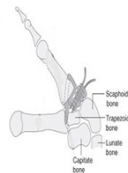
Trapeziectomy

- Complications
 - Proximal and radial migration
 - Loss of grip and pinch strength
 - Instability CMC joint
 - Loss of height of the thumb



LRTI

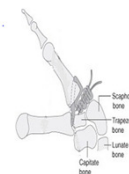
- Burton Pellegrini: 92% excellent results
- Nylen et al: good results 88/100
- De Smet et al: good results 26/30




Burton R, Pellegrini V. Surgical management of basipolicearthritis of the thumb. Part II: ligament reconstruction with tendon interposition. *J Hand Surg* 1986; 11-A: 324-332.
 Nylen S, Johnson A, Rosenquist AM. Trapeziectomy and ligament reconstruction for osteoarthritis of the base of the thumb. A prospective study of 100 operations. *Hand Surg* 2003; 18-B: 416-419.
 De Smet L, VanMeirven L, Sloen W, Spaepen D, Van Raebaeck H. Ligament reconstruction/tendon interposition arthroplasty for thumb basal joint osteoarthritis: preliminary results of a prospective outcome study. *Acta Orthop Belg* 2002; 68: 20-23.

LRTI


- Not maintaining trapezium height – thumb strength
- 27-33% loss in height
- No correlation between loss of height and outcome



Joint replacement




- 1971: De la Caffinière
 - Avoids shortening and basal instability
 - Avoiding transfer of reaction force after arthrodesis
- Arpe, electra, Ivory, Maia, Rubis, Roseland ...




Joint replacement

- Guardia et al: good outcome 84,6%
- Schulz: 78%
- De Smet et al: 90,7%





Guardia C, Mouel F, Cornella D, Fort A, Pradal P (Roseland® prosthesis : quality of life's studies about 88 patients with a mean follow-up of 43.8 months.) (in French). *Chir Main* 2010; 29 : 301-306.
Schulz JF. (The Roseland prosthesis in the treatment osteoarthritis. A five years experience with the same surgeon (in French). *Chir Main* 2001; 20 : 75-78
De Smet L, Sioen W, Spieren D, Van Ransbeeck H Total joint arthroplasty for osteoarthritis of the thumb. *Isaajoint. Acta Orthop Belg* 2004; 70 : 19-24.





Joint replacement

- Complications
 - Ossifications
 - fracture
 - Cup osteolysis
 - Cup protrusion
 - Dislocation
 - De Quervain tenosynovitis


Joint replacement

Irti VS CMC 1 prosthesis:

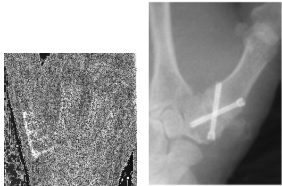

- Ulrich-Vinther
 - 1 year follow-up
 - Arthroplasty: faster, better pain relief + better functional outcome
- De Smet et al
 - 9 year follow-up
 - No difference in pain or function

Ulrich-Vinther M, Puggaard H, Lange B. Prospective 1 year follow-up study comparing joint prosthesis with tendon interposition arthroplasty in treatment of trapezocarpal osteoarthritis. *J Hand Surg* 2008; 33 A : 1369-1377.
De Smet L, Vanderbergh L, Degraef I. Long term outcome of trapezocarpal with ligament reconstruction and tendon interposition (LRTI) versus prosthesis arthroplasty for basal joint osteoarthritis of the thumb. *Acta Orthop Belg*. 2013;73:146-148.



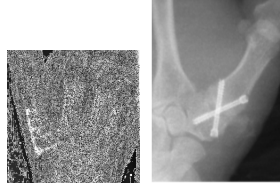
Arthrodesis

- Young active male or manual worker
- Strong pinch
- Reliable pain reduction

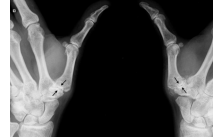



Arthrodesis

- Abduction-extension position
- Disadvantages
 - Adjacent joint arthrosis
 - Rom (key pinch)
 - Hand flattening
 - Mcp hyperextension
 - Nonunion 13-29%



Conclusion



- Frequent pathology
- Conservative treatment
- Good surgical treatments



Vragen?