

# Dr Kwan Yeoh

[www.orthosports.com.au](http://www.orthosports.com.au)

47-49 Burwood Road, Concord

29-31 Dora Street, Hurstville

119-121 Lethbridge Street, Penrith



**ORTHOSPORTS**

ORTHOPAEDIC & SPORTS MEDICINE SERVICE

**Dr Kwan Yeoh**

**Hand, Upper Limb & General Orthopaedic Surgery**

Dr Kwan Yeoh

# Tendinopathies and overuse syndromes



**ORTHOSPORTS**

ORTHOPAEDIC & SPORTS MEDICINE SERVICE

**Dr Kwan Yeoh**

**Hand, Upper Limb & General Orthopaedic Surgery**

# Overuse syndromes?

- Repetitive tissue microtrauma
- Relative ischaemia
- Repetitive actions, vibration
- Greater forces
- Unnatural limb positions



# Types of overuse syndromes

## Tendons

De Quervains

ECU tendinitis

Trigger finger

Intersection syndrome

---

## Nerves

Carpal tunnel syndrome

---

## Ligaments

Gamekeepers thumb



# Assessment of patient

- History, examination
- X-ray
- Bone scan
- MRI
- Nerve conduction study
- Local anaesthetic injections



# General principles of treatment

- RICE, splints, therapy
- Activity & technique modification
- Medications
- Steroid injections
- Surgery



# De Quervain's tenosynovitis



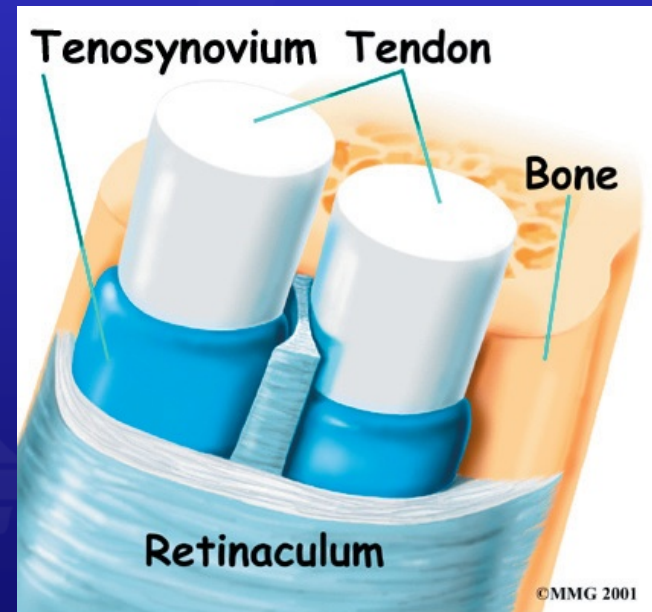
**ORTHOSPORTS**

ORTHOPAEDIC & SPORTS MEDICINE SERVICE

**Dr Kwan Yeoh**  
**Hand, Upper Limb & General Orthopaedic Surgery**

# DQ: What is it?

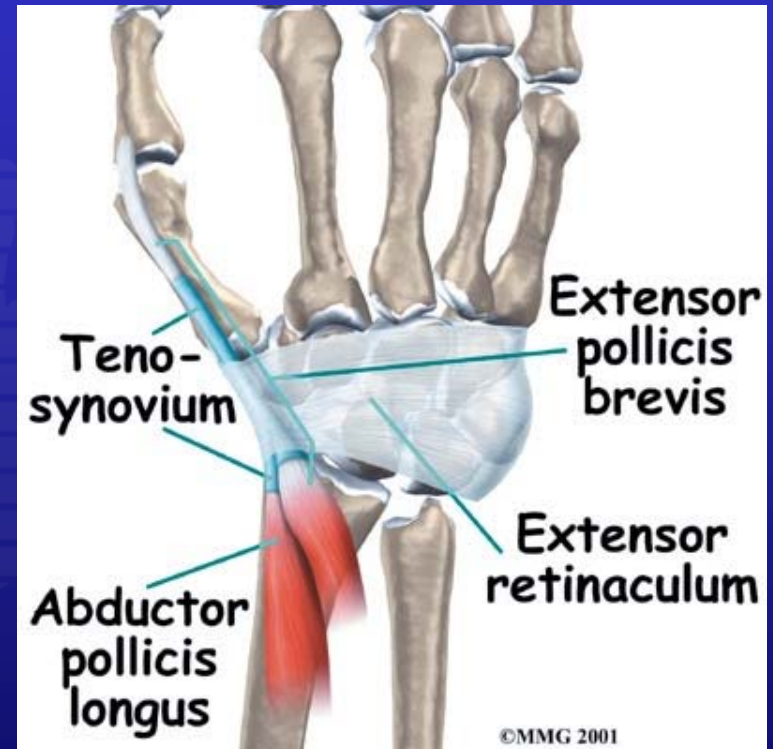
- Inflammation around APL & EPB tendons
- Associated with:
  - Diabetes,
  - hyperthyroidism,
  - hyperuricaemia,
  - rheumatoid arthritis,
  - pregnancy, female





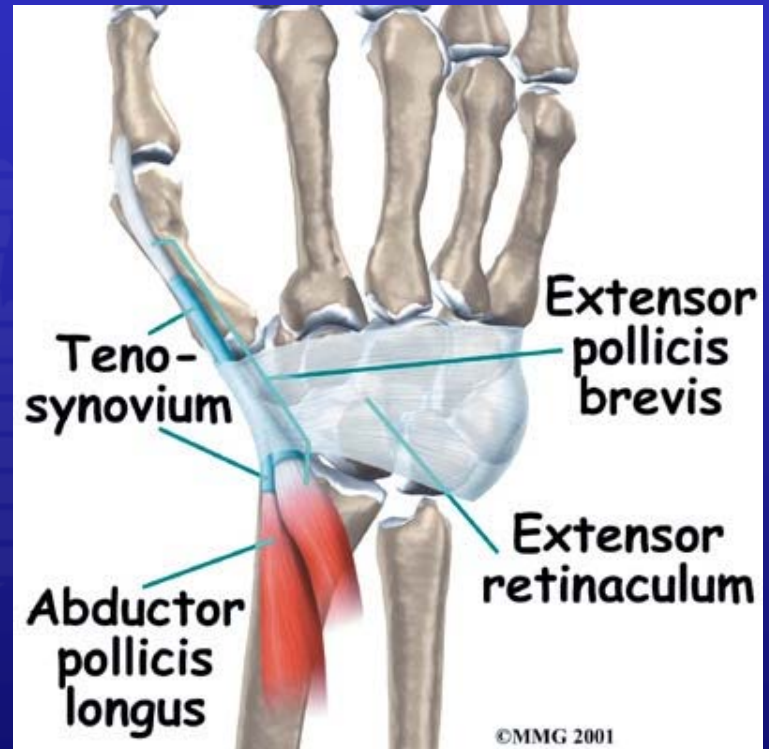
# DQ: History

- Pain
- Worse with gripping
- Weakness
- Grating, popping, crunching sensation



# DQ: Examination

- Tender 1st dorsal wrist compartment
- Painful resisted thumb abduction
- Finklestein test positive



# DQ: Investigations

XR

Ultrasound

MRI



**ORTHOSPORTS**

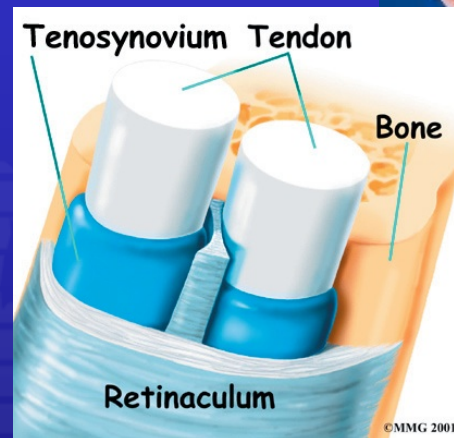
ORTHOPAEDIC & SPORTS MEDICINE SERVICE

**Dr Kwan Yeoh**

**Hand, Upper Limb & General Orthopaedic Surgery**

# DQ: Treatment

- Rest, activity avoidance, modification
- Therapy
  - Splint
  - Stretching, strengthening
- Medications
- Local anaesthetic & steroid injection
- Surgical release



# DQ: Post-operative rehabilitation

- Elevation, ice, rest
- Wound & swelling control
- ROM, tendon glides
- Gradual strengthening as tolerated
- Return to sports as tolerated



# Carpal tunnel syndrome

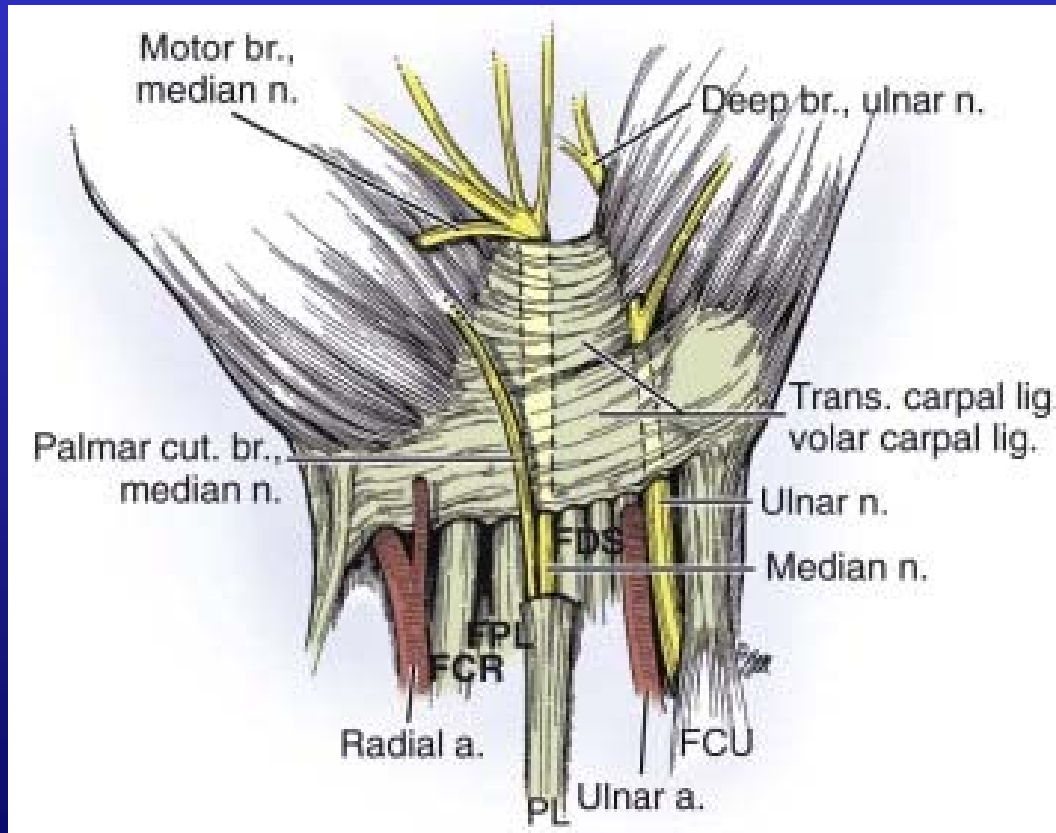


**ORTHOSPORTS**

ORTHOPAEDIC & SPORTS MEDICINE SERVICE

**Dr Kwan Yeoh**  
**Hand, Upper Limb & General Orthopaedic Surgery**

# Carpal tunnel syndrome



**ORTHOSPORTS**

ORTHOPAEDIC & SPORTS MEDICINE SERVICE

**Dr Kwan Yeoh**

**Hand, Upper Limb & General Orthopaedic Surgery**

# Diagnosis

History

Examination

Investigations



**ORTHOSPORTS**

ORTHOPAEDIC & SPORTS MEDICINE SERVICE

**Dr Kwan Yeoh**

**Hand, Upper Limb & General Orthopaedic Surgery**



# Investigations

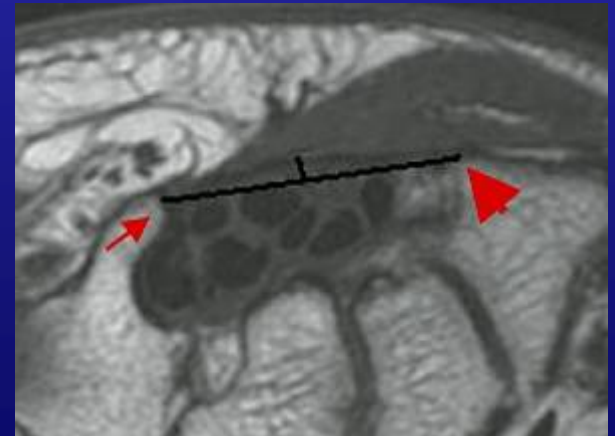
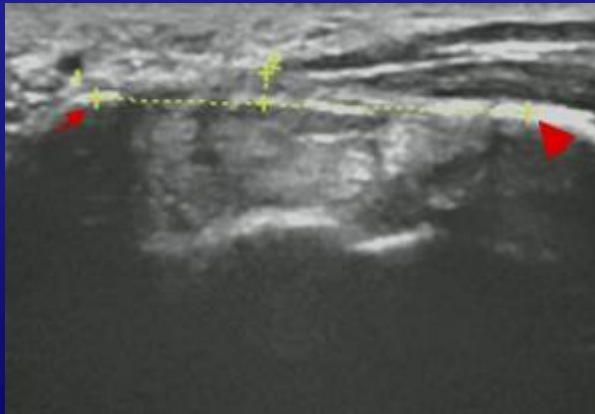
X-ray

Nerve conduction studies

Semmes-Weinstein monofilament

Ultrasound

MRI



ORTHOSPORTS

ORTHOPAEDIC & SPORTS MEDICINE SERVICE

Dr Kwan Yeoh

Hand, Upper Limb & General Orthopaedic Surgery

# Non-surgical treatment

- Wrist splints
  - In neutral
  - In 30° extension
- Steroid injection
- Acupuncture
- Ultrasound
- Diuretics
- Yoga
- Carpal bone mobilisation
- Tendon glide exercises
- Nerve glide exercises
- Magnets
- Exercise
- Chiropractic treatment



# Non-surgical treatment

- Wrist splints
  - In neutral
  - In 30° extension
- Steroid injection
- Acupuncture

Page et al, Cochrane 2012

O'Connor et al, Cochrane 2003

Marshall et al, Cochrane 2007

Verdugo et al, Cochrane 2008



**ORTHOSPORTS**

ORTHOPAEDIC & SPORTS MEDICINE SERVICE

**Dr Kwan Yeoh**

**Hand, Upper Limb & General Orthopaedic Surgery**

# Surgical treatment

Thenar muscle wasting or weakness

Severe symptoms

Patient preference

Failed non-surgical management



**Open CTR**

**Endoscopic CTR**



**ORTHOSPORTS**

ORTHOPAEDIC & SPORTS MEDICINE SERVICE

**Dr Kwan Yeoh**

**Hand, Upper Limb & General Orthopaedic Surgery**

# Surgical treatment

Open CTR

Endoscopic CTR

Return to work/sport



Complications



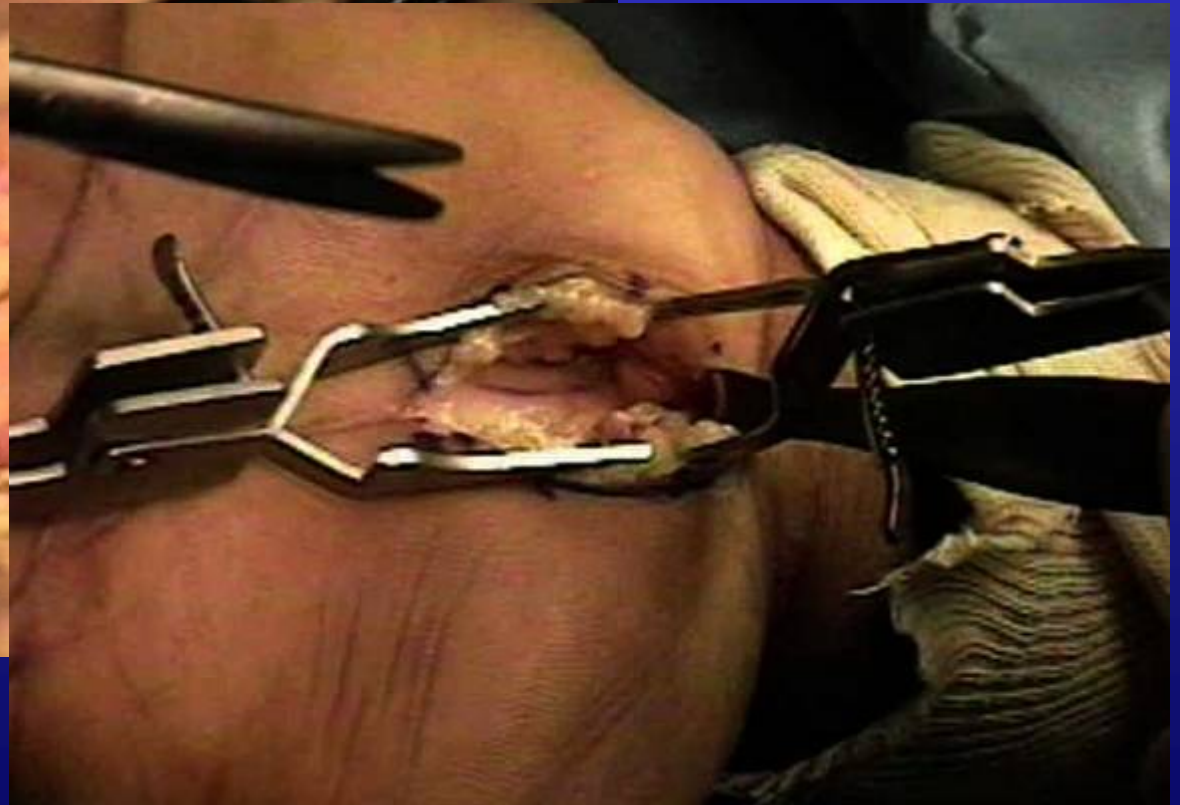
**ORTHOSPORTS**

ORTHOPAEDIC & SPORTS MEDICINE SERVICE

**Dr Kwan Yeoh**

**Hand, Upper Limb & General Orthopaedic Surgery**

# Open CTR



**ORTHOSPORTS**

ORTHOPAEDIC & SPORTS MEDICINE SERVICE

**Dr Kwan Yeoh**

**Hand, Upper Limb & General Orthopaedic Surgery**

# Endoscopic CTR



DR KWAN YEON

Hand, Upper Limb & General Orthopaedic Surgery

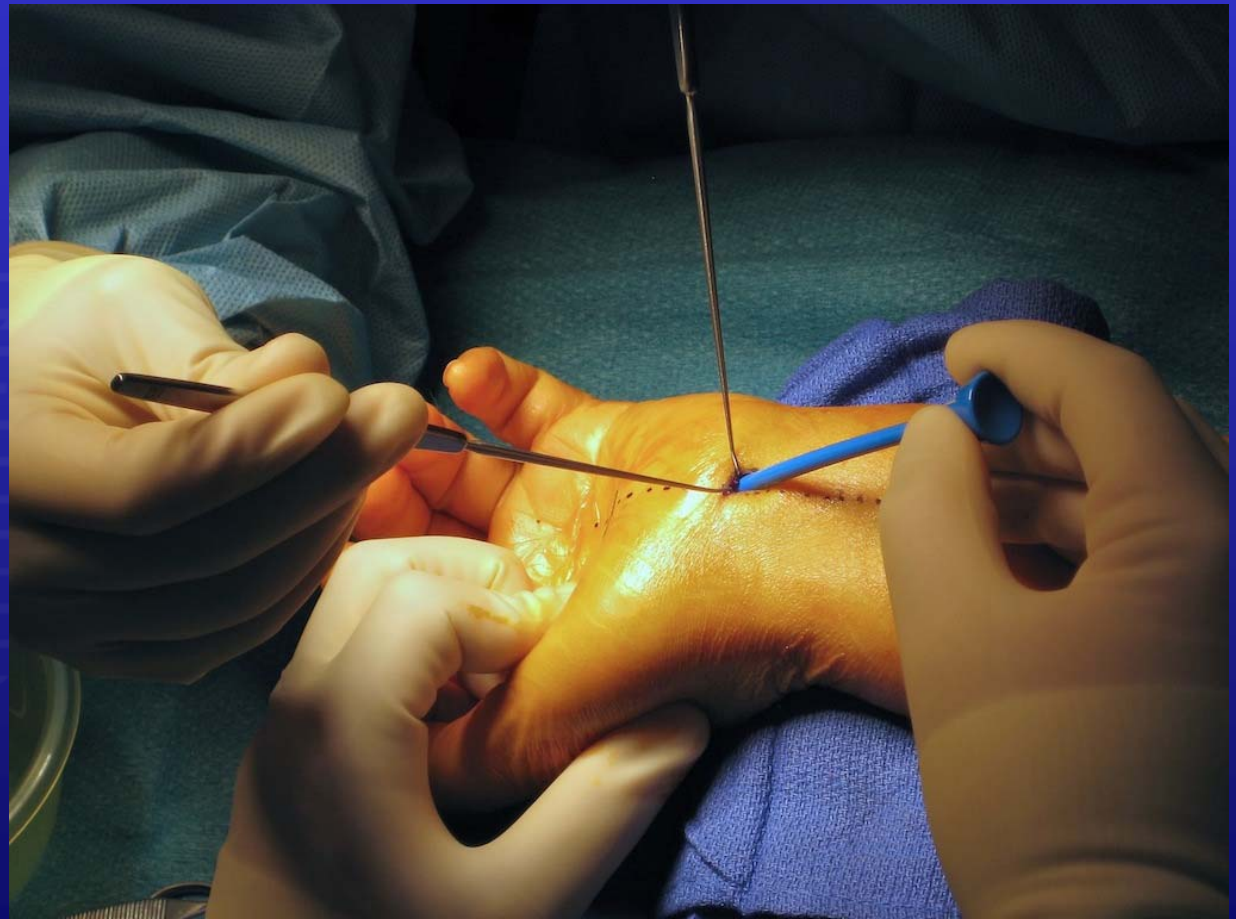


ORTHOSPORTS

ORTHOPAEDIC & SPORTS MEDICINE SERVICE



# Endoscopic CTR



**ORTHOSPORTS**

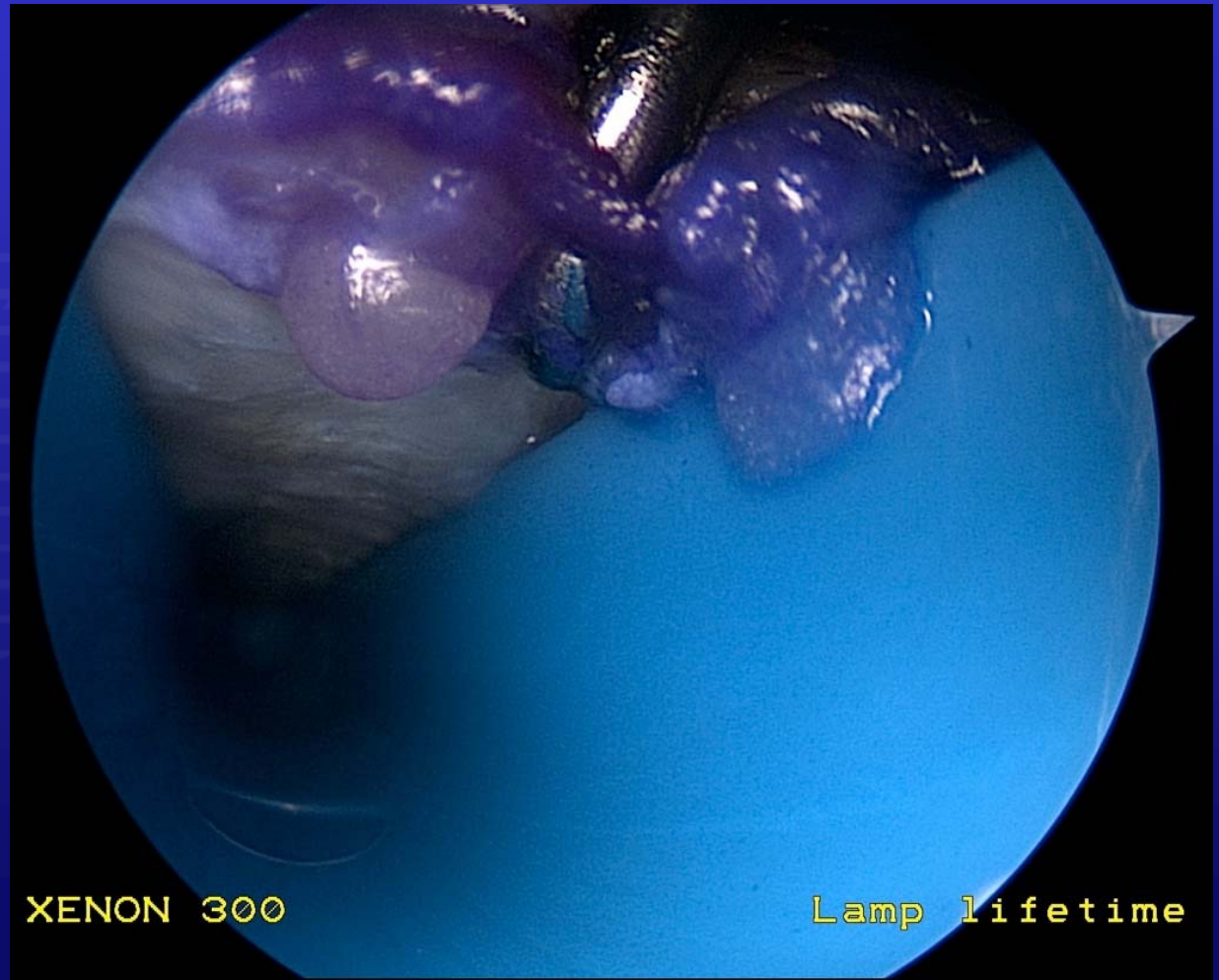
ORTHOPAEDIC & SPORTS MEDICINE SERVICE

**Dr Kwan Yeoh**

**Hand, Upper Limb & General Orthopaedic Surgery**



# Endoscopic CTR

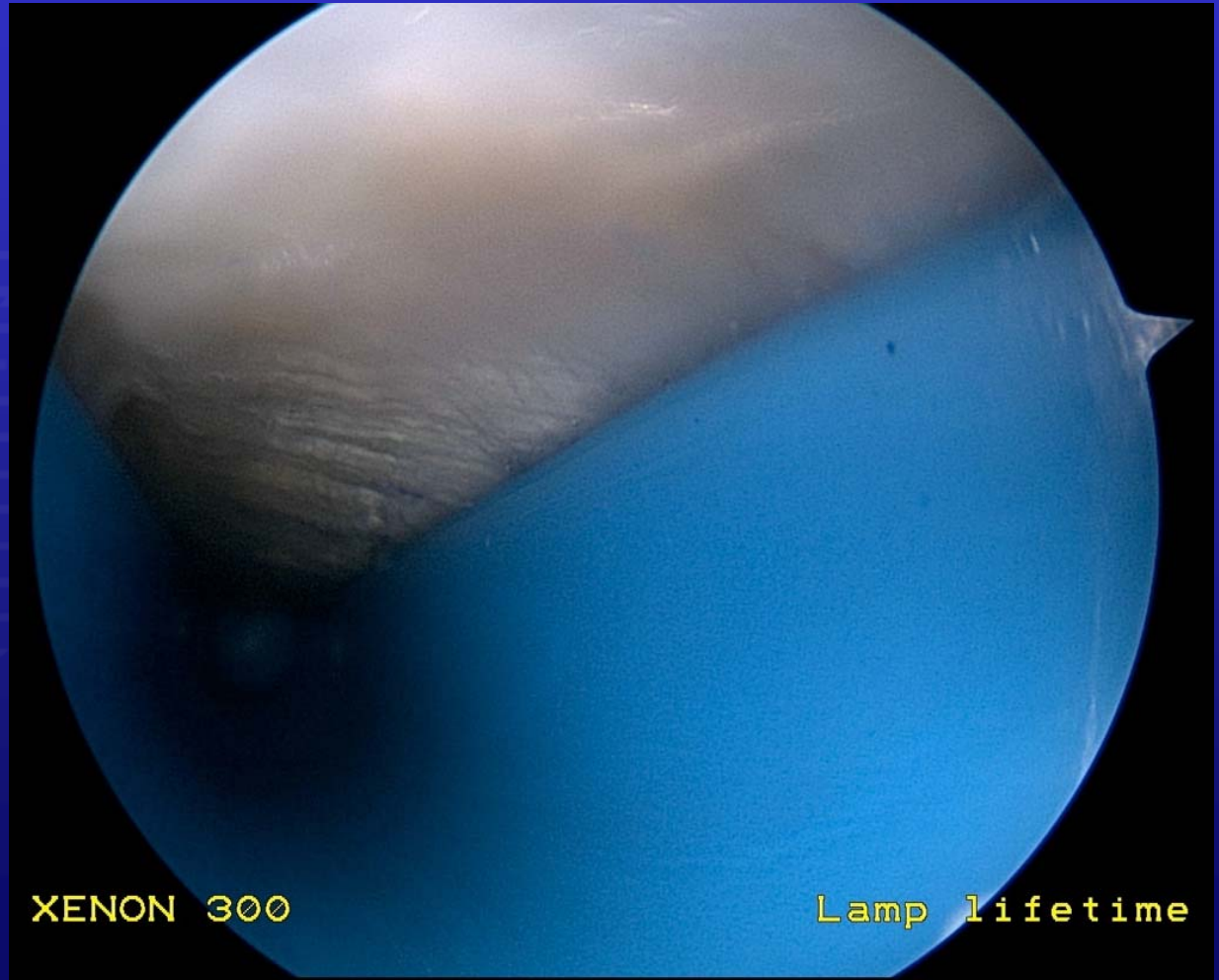
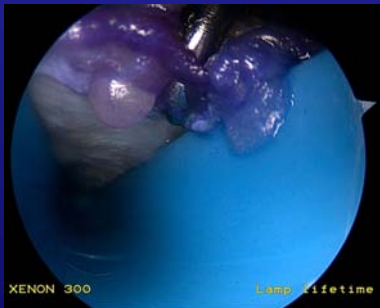


**ORTHOSPORTS**

ORTHOPAEDIC & SPORTS MEDICINE SERVICE

**Hand, Upper Limb & General Orthopaedic Surgery**

# Endoscopic CTR

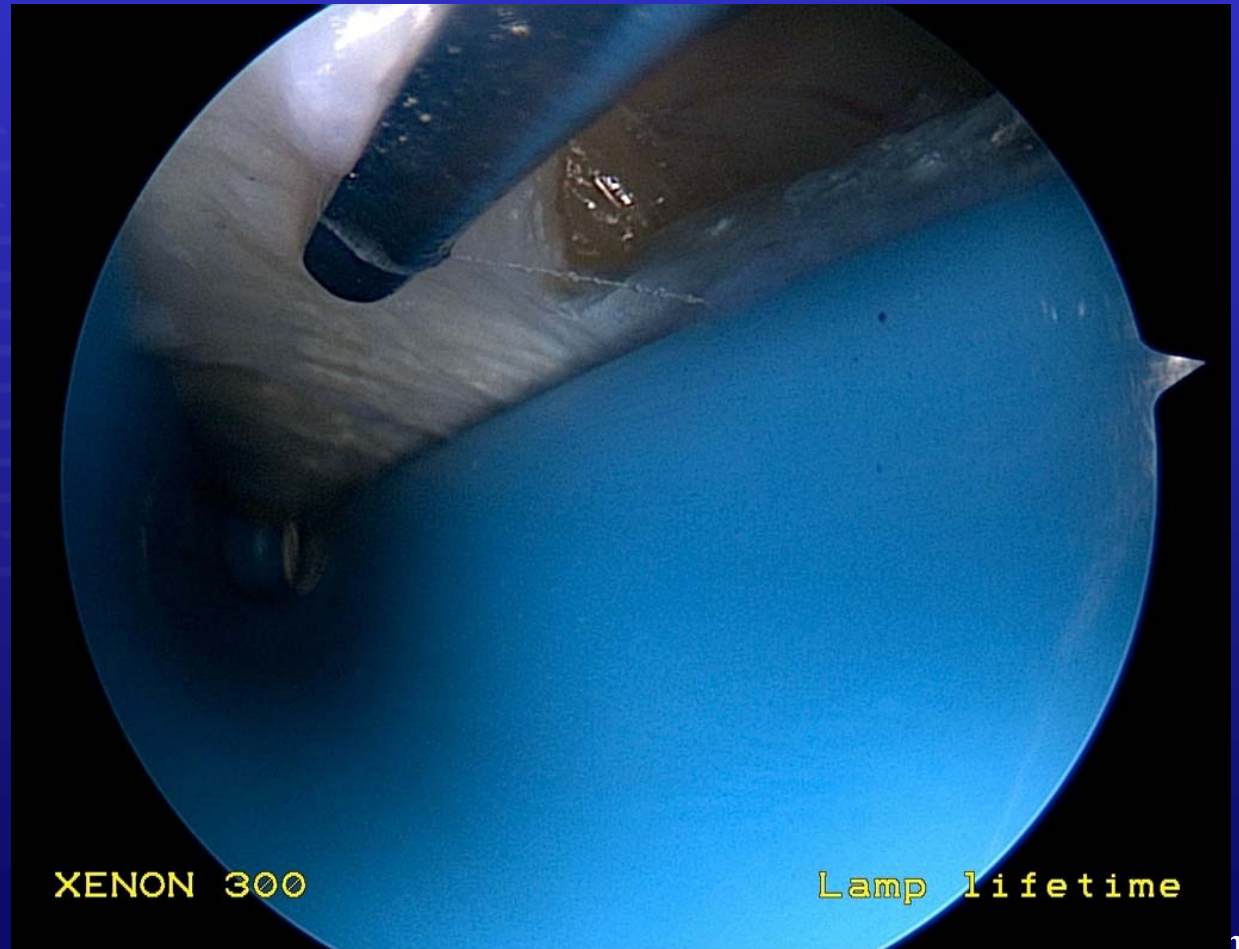
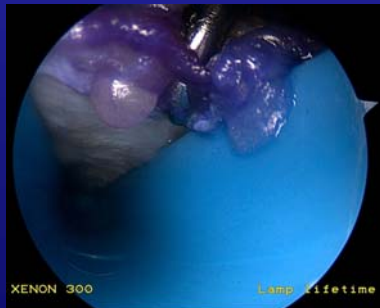
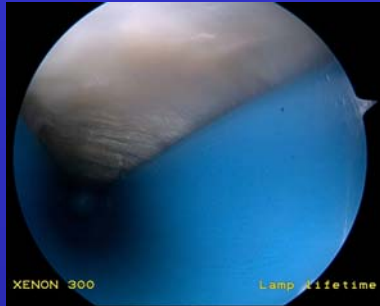


**ORTHOSPORTS**

ORTHOPAEDIC & SPORTS MEDICINE SERVICE

**Hand, Upper Limb & General Orthopaedic Surgery**

# Endoscopic CTR



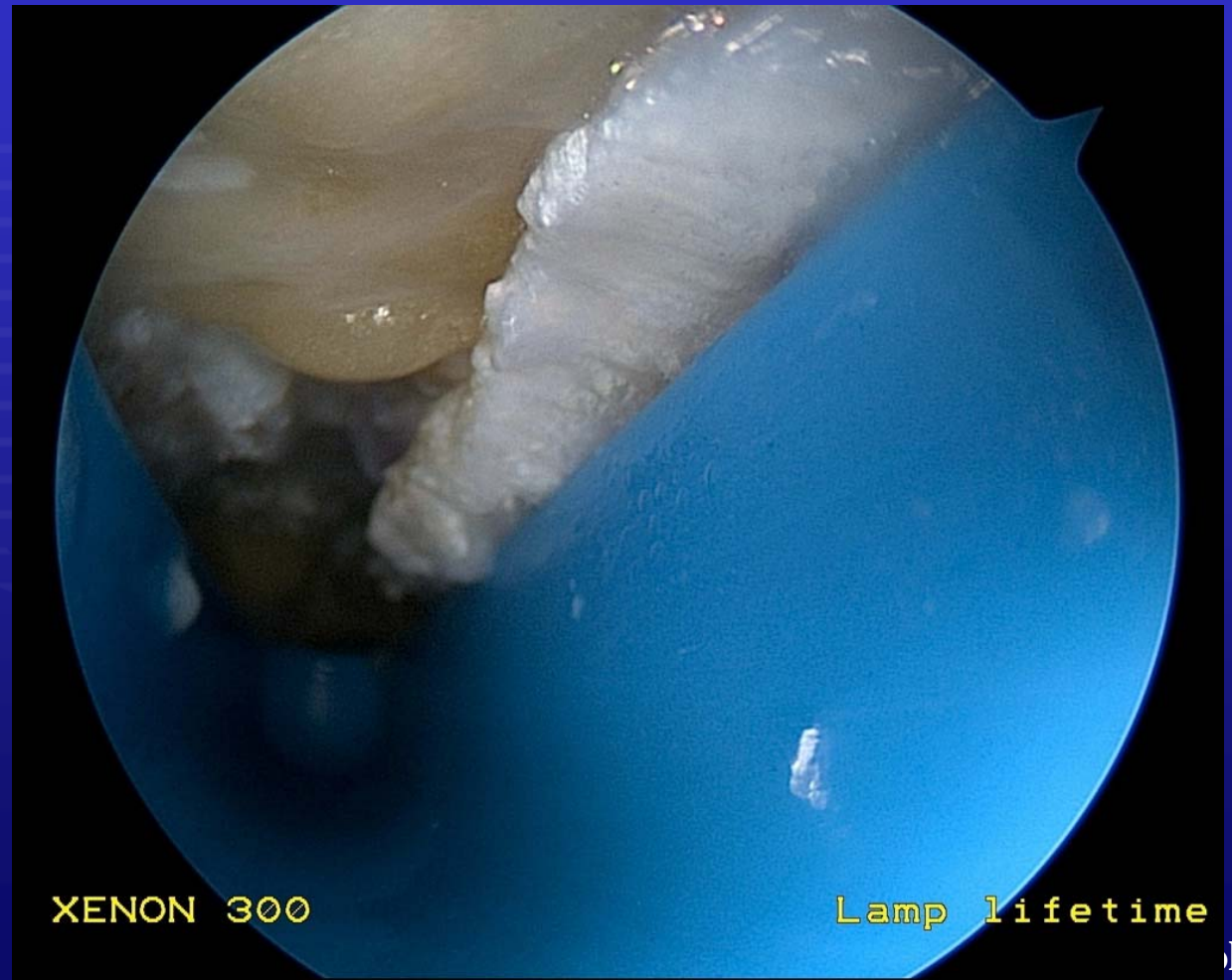
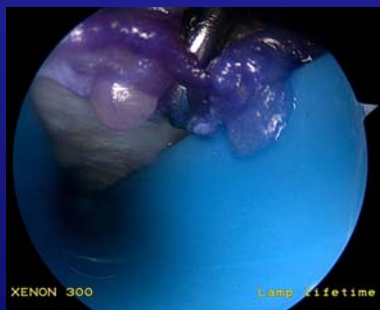
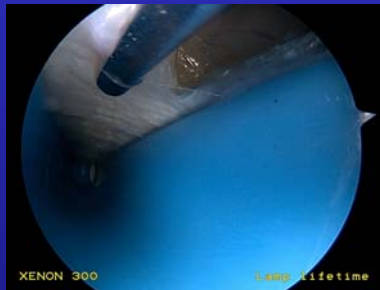
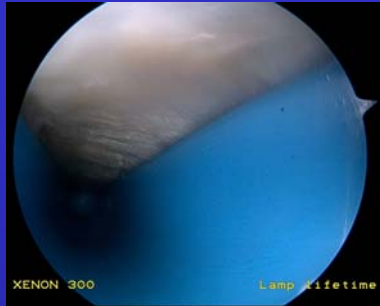
**ORTHOSPORTS**

ORTHOPAEDIC & SPORTS MEDICINE SERVICE

**Hand, Upper Limb & General Orthopaedic Surgery**



# Endoscopic CTR

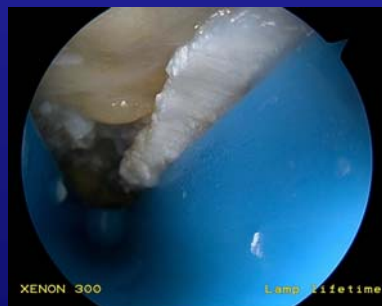
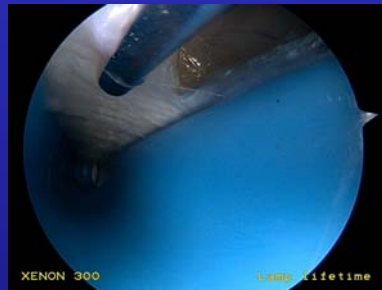
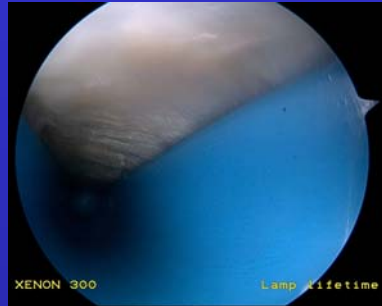


**ORTHOSPORTS**

ORTHOPAEDIC & SPORTS MEDICINE SERVICE

Hand, Upper Limb & General Orthopaedic Surgery

# Endoscopic CTR



**ORTHOSPORTS**

ORTHOPAEDIC & SPORTS MEDICINE SERVICE

Hand, Upper Limb & General Orthopaedic Surgery

# Post-operative rehabilitation

- Elevation, ice, rest
- ROM, tendon glides, wound
- Strengthening
- Return to sports 2-6 weeks



# Outcomes

Pre-operative pain	—	Immediately
Pins & needles	—	Immediately
Numbness	—	9 months
Motor weakness	—	Months or never
Post-surgical pain	—	2-6 weeks
Return to work	—	2-6 weeks
Pillar pain	—	9 months
Long term	—	75-90% free of symptoms



Thank you



**ORTHOSPORTS**

ORTHOPAEDIC & SPORTS MEDICINE SERVICE

**Dr Kwan Yeoh**  
**Hand, Upper Limb & General Orthopaedic Surgery**