Haemophilia and Orthopaedic Surgery

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Disclaimer

• Director of Education OTC South Pacific

• No funds or company support received for this presentation
Overview

• General principles of orthopaedic pathology in haemophilia
• Multidisciplinary team approach
• Surgical procedures and decision making
Change in surgery over time

- Decreasing need for surgery
- Different procedures utilised
- Change from open knee synovectomy and Achilles tenotomy in 1970’s
- 2000’s Elbow synovectomy and excision of radial head, and knee replacement
Orthopaedic Pathology

- Joint Bleeds – Ankles, Knees, Elbows – 80%
- Medical management
- If bleeds continue:
  - Synovial hypertrophy
    - increased vasc
  - Chronic synovitis
  - Articular cartilage destruction
Orthopaedic Pathology

- In Children
- Hypertrophy of growth plate
- Leg length inequality
- Angular deformity
Children

- Joint contractures
  - Tendoachilles lengthening
  - Hamstring lengthening
  - Osteotomy
  - Ilizarov

- Joint needs to be in good condition
Orthopaedic Pathology

• Haemophilic Arthropathy
Surgical procedures

- Synovectomy
- Joint Debridement
- Osteotomy
- Fusion/Arthrodesis
- Arthroplasty
Synovitis

- Synovectomy - Radiosynovectomy
- Surgical synovectomy - Not often these days
- Arthroscopic V’s Open - Knee
- Elbow/ Ankle - Open

- Aim to reduce bleeds and pain and preserve joint

- Outcomes - often reduced ROM
- Hard to rehab
Joint Debridement

- Usually to remove osteophytes or graft cysts
- Best in relatively preserved joint
- Ankle/elbow best results
Elbow

- Joint debridement and partial synovectomy has good results
- Radial head excision – increase pronation/supination by up to 60° arc
Joint Debridement - Knee

- Arthroscopic debridement
- Results in OA are poor
- Best result in acute deterioration
- Loose osteochondral body
Arthroplasty (Joint Replacement)

• Most common end point
• Often relatively young
• Preop joints very stiff, limited ROM
• Bone stock poor – osteopaenia
  - distorted architecture
Haemophilia and arthroplasty

- Often combine procedures to save on factor
- Bilateral Knee replacements
- Shoulder and knee replacements
Knee replacement

- Most common
- Not like a routine TKR
- Younger patient
- Very stiff joint – 0-40°
- Difficult exposure
- Bone stock loss – Cysts/grafting
- Osteopaenia
Knee replacement

- Extra components
- Longer surgery
- Difficult rehab
- Length of stay longer - factor
- Post op ROM increased 60 deg
- Patient satisfaction - High

Martin, B; Halliday, B: 15 year series of TKR in Haemophilia at RBWH. QAOA Townsville 2006.
Revision Knee Replacement

- Young patients
- Relatively active
- Poor bone stock
- Young revision age
Hip replacement

- Uncommonly affected in Haemophilia
- But can get hip fracture
- Or OA with background Haemophilia
- Modify procedures to fit pathology
Hip replacement

- Sometimes side effects of Haemophilia cause unusual complications
- Pseudotumour
Pseudotumour

- Probably begin outside bone
- Encapsulated haematoma
- Erodes into bone
- Prox femur
- Curettage and fill
  - Graft
  - Cement
  - Bone Substitutes
Hip replacement

- Revision surgery needs a range of solutions

First reported case of Impaction grafting technique in Haemophilia – 2001 - RBWH
Shoulder

- Very stiff preop
- Poor joint stock
- Results do not equate to those in OA
- Good pain relief
Elbow

- Cubital tunnel syndrome with ulna nerve palsy
- Combined pathology:
  - Elbow synovitis
  - Progressively valgus elbow
- Decompress nerve and synovectomy
Elbow replacement

- Option for low demand elbows
- Often high demand – crutches/sticks
- Bone stock issues
- Stiff pre op
- Stiff post op
- Difficult
- Last resort
Arthrodesis - Fusion

- Systemic disease
- Ankle is most common joint fused
- Modern arthroscopic assisted techniques
Ankle replacement

• Results in osteoarthritis acceptable
• But in haemophilia
  – Bone stock
  – Cysts/Osteopaenia
  – Poor pre op ROM
  – Deformity
Typical Orthopaedic Conditions

• Knee meniscal tears
• Fractures
• Rotator cuff pathology
• Cervical spondylosis
• Lumbar disc disease
Summary – Orthopaedic surgery

- Need is slowly getting less
- Challenging situations need a range of solutions
- Combine surgeries to reduce factor use
- Use of newer bone substitutes to replace bone graft needs
The (Distant) Future

- Healthy joints with no need for orthopaedic surgeons for haemophilia specific conditions