

Osteoarthritis

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What is it?

- Degenerative disease of synovial joint causing progressive loss of articular cartilage, remodelling of adjacent bone and inflammation.
- Usually monoarthropathy, affecting only one joint at a time (thought multiple joints can be affected)
- Can be primary (idiopathic) or secondary (pre-existing anomaly of the joint)
- One of the most common chronic diseases
 - Estimated prevalence in adult population 11% hip OA; 24% knee OA

Pathophysiology

- Affects
 - Articular(hyaline) cartilage
 - Failure of homeostatic balance of cartilage matrix synthesis and degradation
 - Increased water content causes proteoglycan alteration and collagen abnormalities resulting in loss of orientation and organisation
 - Synovium and capsule
 - Becomes inflamed, hypervascular and increasingly thick as severity increases
 - Bone
 - Subchondral bone remodelling leads to lytic lesions with sclerotic edges, bone cysts and osteophyte formation



Risk Factors

- Modifiable
 - Articular trauma
 - Especially with resulting misaligned articular surface
 - Occupation and recreational joint stress
 - Muscle weakness
 - Large body mass
 - Increased joint laxity
- Non-modifiable
 - Gender
 - females > males
 - Increased age
 - Genetics



Presentation

- History
 - Pain
 - Remember duration of symptoms
 - Function
 - Impact on life- work, activity of daily living
 - Previous joint trauma/ abnormality
 - Associated with secondary osteoarthritis
 - Other comorbidities (in order to facilitate management)
- Examination
 - Local examination of joint
 - Limb alignment
 - Altered mechanical axis
 - Remember to examine joint above and below joint in question
 - Pain can be referred
 - Functional assessment



Signs and Symptoms

- Symptoms
 - Pain worsens with activity and results in limitations
 - Chronic onset
 - Stiffness on resting; eases gradually on movement
- Signs
 - Initially none
 - Swelling with activity
 - Deformity due to osteophytes
 - Crepitus
 - Reduced range of motion
 - New use of walking aid



Diagnosis

- Can be made clinically without investigations if a person¹
 - If 45 years old or over
 - Has activity related joint pain
 - Has morning joint- stiffness lasting less than 30 minutes

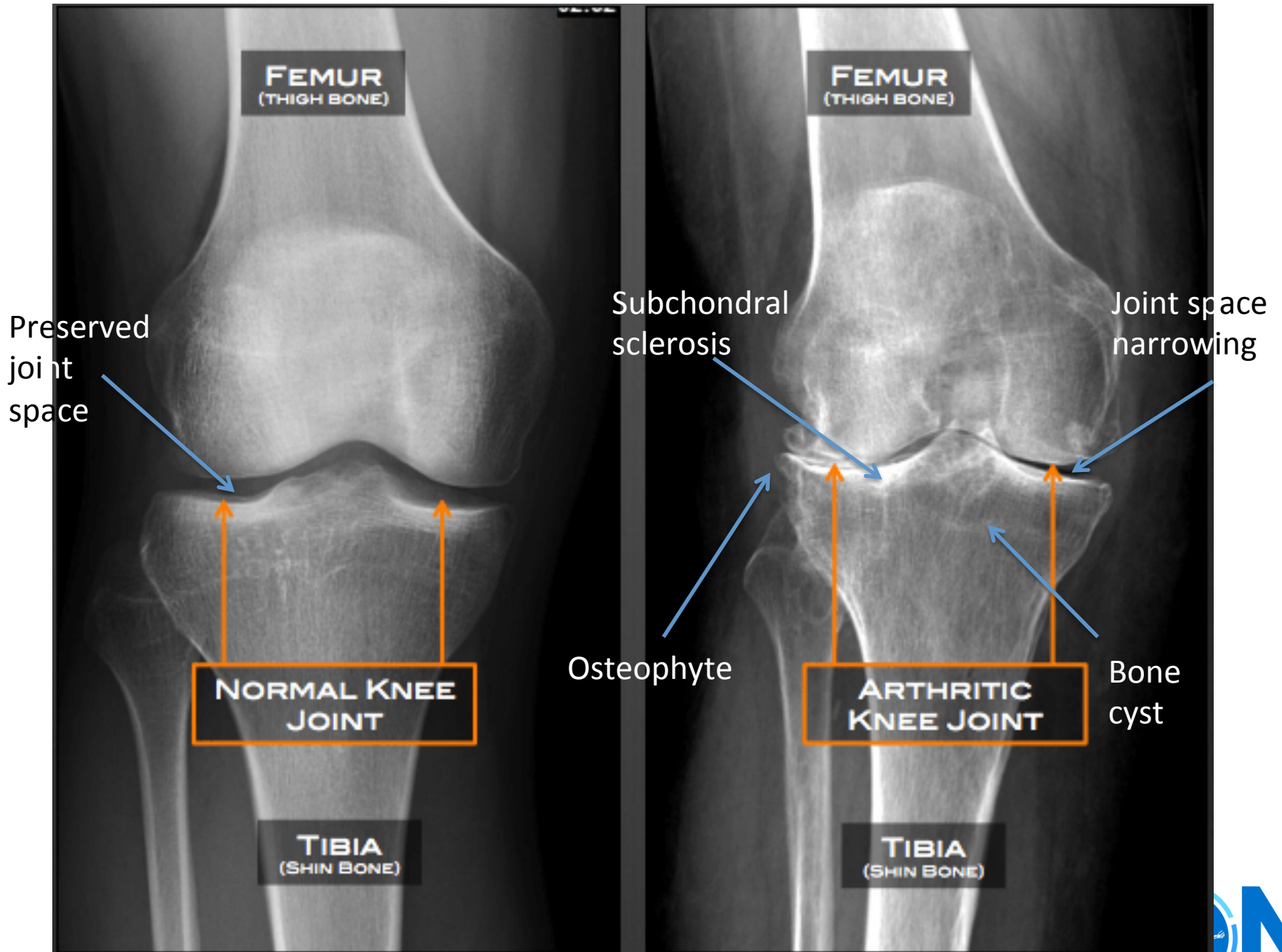
1) Osteoarthritis: care and management in adults; *NICE Clinical Guideline (February 2014)*



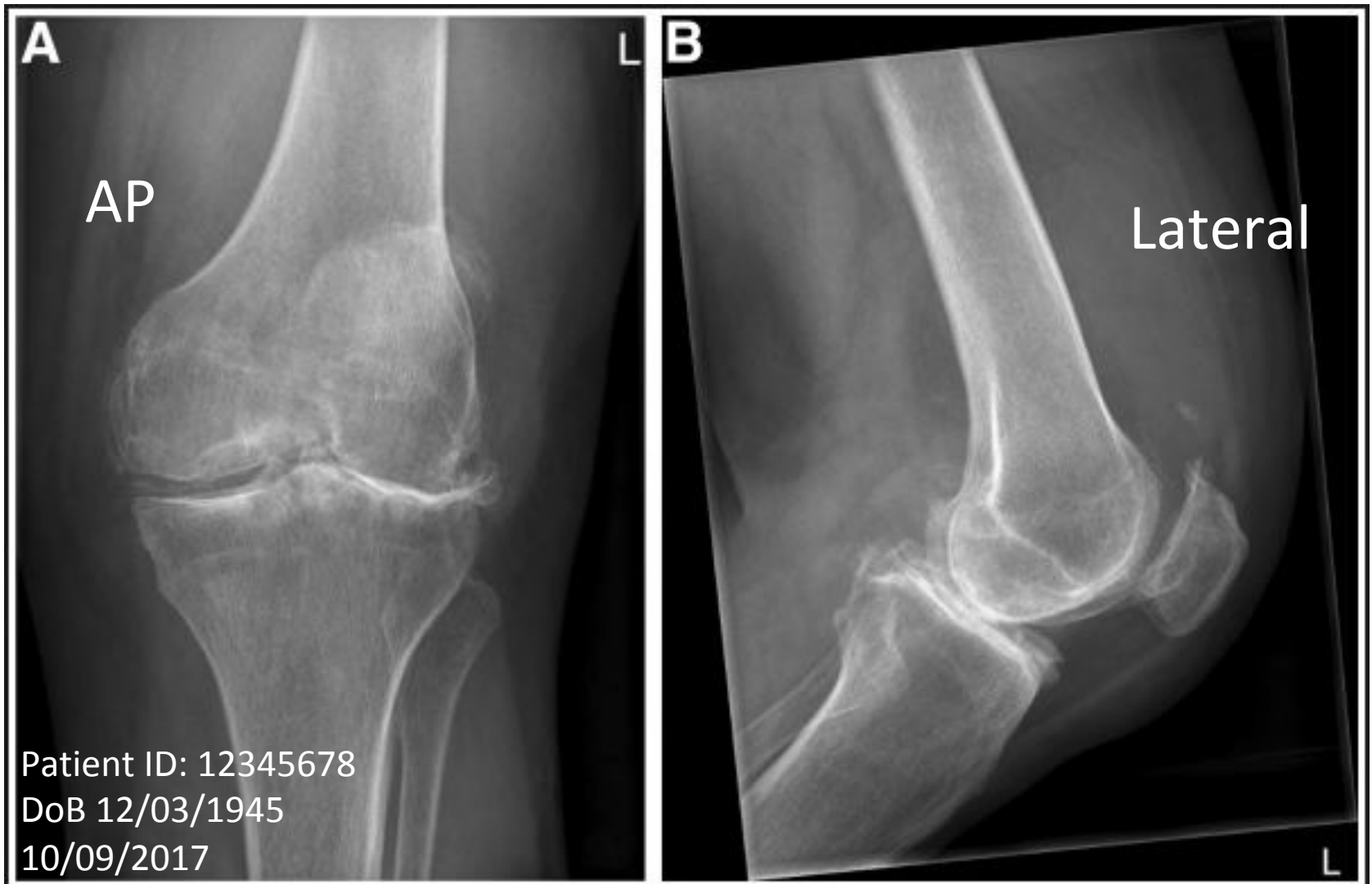
Imaging

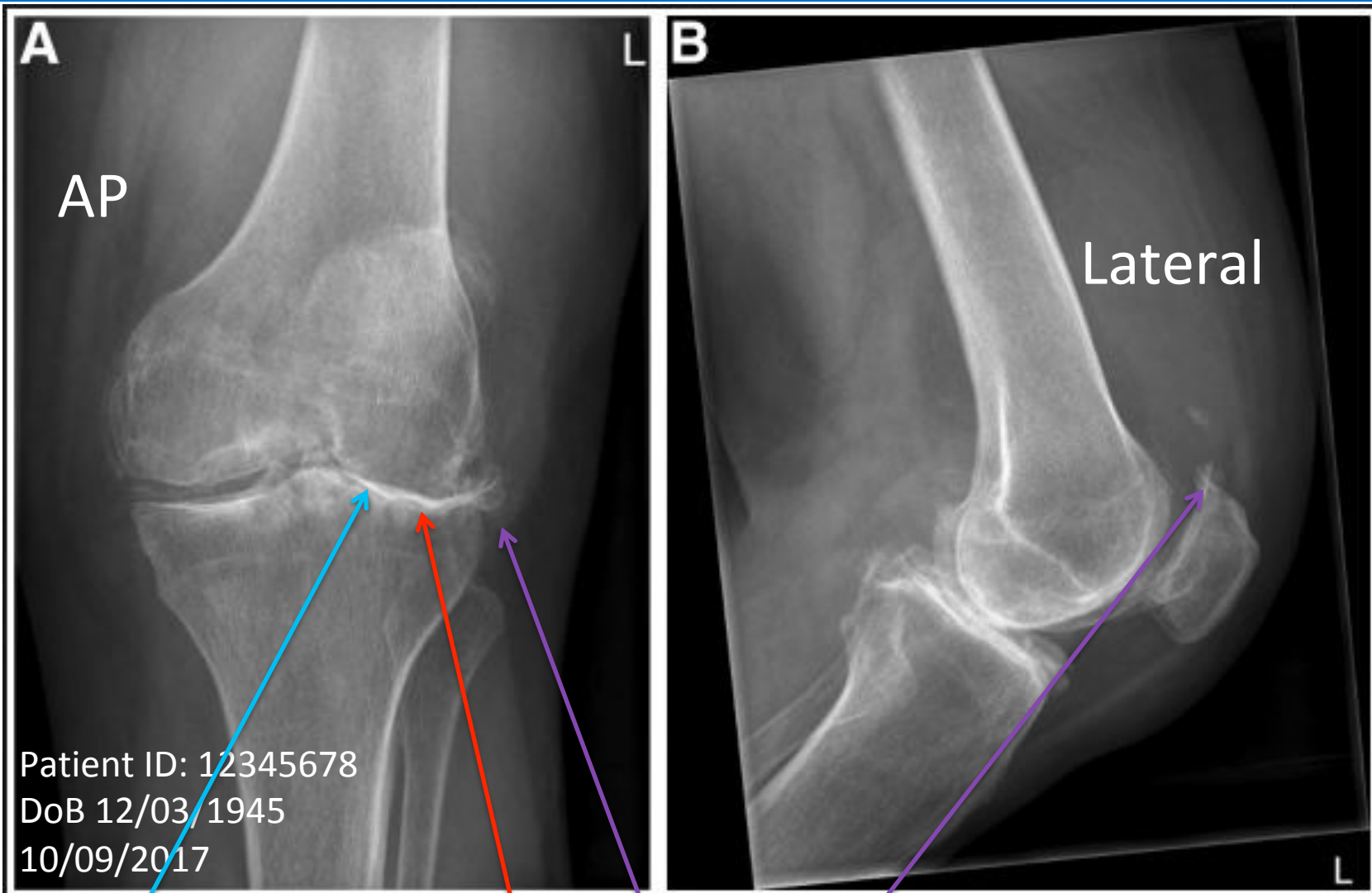
- Radiographs
 - Need weight bearing films
 - Cannot see joint space narrowing on non weight bearing films
 - 2 views
 - Anteroposterior (AP) and lateral of joint
- Findings
 - Joint space narrowing
 - Subchondral sclerosis (thickening)
 - Osteophytes
 - Bone cysts





Describe the Radiographs





AP and lateral weight-bearing radiographs of the left knee of 73yo Patient 12345678 taken 10/09/2017 showing osteoarthritis indicated by the **joint space narrowing** (worse on the lateral side), **osteophytes** associated with the tibia and patella mainly and **subchondral sclerosis**.

Management

- Nonoperative (conservative)
 - Weight loss/ weight management programmes
 - Physiotherapy/ activity modification programmes
 - Education
 - Analgesia
 - Paracetamol; NSAIDs
 - Joint injections
 - Steroids, anaesthetic
 - Can also be useful for diagnosis
- Operative
 - Arthroscopic debridement (if mechanical symptoms)
 - Corrective osteotomies to restore mechanical alignment
 - Joint arthroplasty (replacements)



Summary

- Degenerative disease of synovial joint.
- Common chronic disease on advancing age characterised by joint pain on activity and stiffness settling within 30 minutes.
- 4 classic signs on **weight bearing** radiographs
 - Joint space narrowing
 - Subchondral sclerosis
 - Subchondral cysts
 - Osteophytes



Thank you!

Presentation available on
<https://www.bon.ac.uk>

