

PREOPERATIVE EVALUATION OF A PATIENT GOING FOR TOTAL KNEE ARTHROPLASTY

Dr. (Prof.) Anil Arora

MS (Ortho) DNB (Ortho) Dip SIROT (USA)

FAPOA (Korea), FIGOF (Germany), FJOA (Japan)

Commonwealth Fellow Joint Replacement

(Royal National Orthopaedic Hospital, London, UK)

Senior Knee and Hip Replacement Surgeon

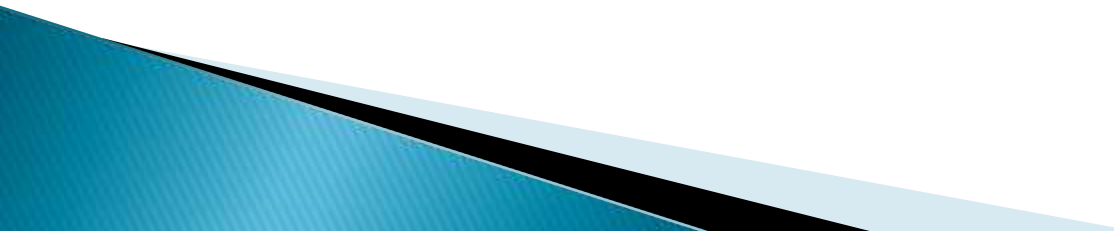
Associate Director

Department of Orthopaedics and Joint Replacement

Max Superspeciality Hospital, Patparganj, Delhi (India)

E-mail : anilarora@delhiorthojournal.com

Evaluation

- ❑ ***Diabetes, Thyroid dysfunction***
 - ❑ ***Any Recent infection (URTI, UTI, Dental)***
 - ❑ ***Drugs such as anti-inflammatory, Aspirin, anticoagulants, steroids***
 - ❑ ***Any local injection in knee***
 - ❑ ***Previous surgery (HTO,ORIF,PATELLA) & Scar***
 - ❑ ***Psychiatric illnesses***
 - ❑ ***Any DVT Earlier***
- 

Physical examination (General)

- ❑ ***Generalized neurological disorder (ataxia, parkinsonism)***
 - ❑ ***Any local neuromuscular pathology***
 - ❑ ***Neurologenic claudication***
 - ❑ ***Vascular claudication***
 - ❑ ***Generalized ligamentous laxity***
- 

Physical examination (Local)

>>>> Fully expose the lower limbs

- ❑ **Complete examination of Knee**

- ❑ **Synovial Thickening**

- ❑ **ROM**

- ❑ **Deformity**

- ❑ **Stability**

- ❑ **Associated deformity in femur or tibia**

- ❑ **Previous surgery Scar**

- ❑ **Adjacent Joints (hip, SIJ, spine, ankle)**

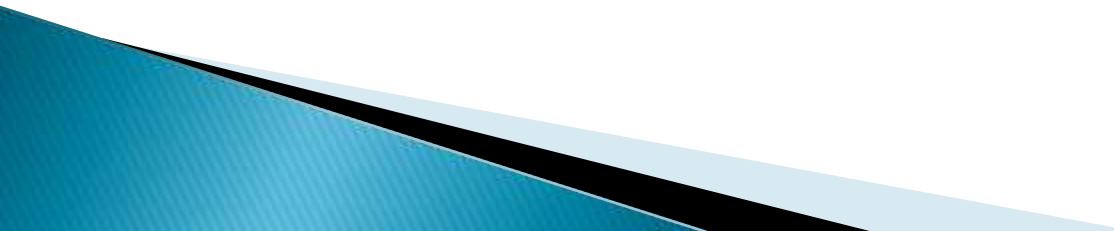
- ❑ **Peripheral vascular pulses**

Laboratory studies

- ❑ **To be done in consultation with physician and anaesthetist**

Imaging studies

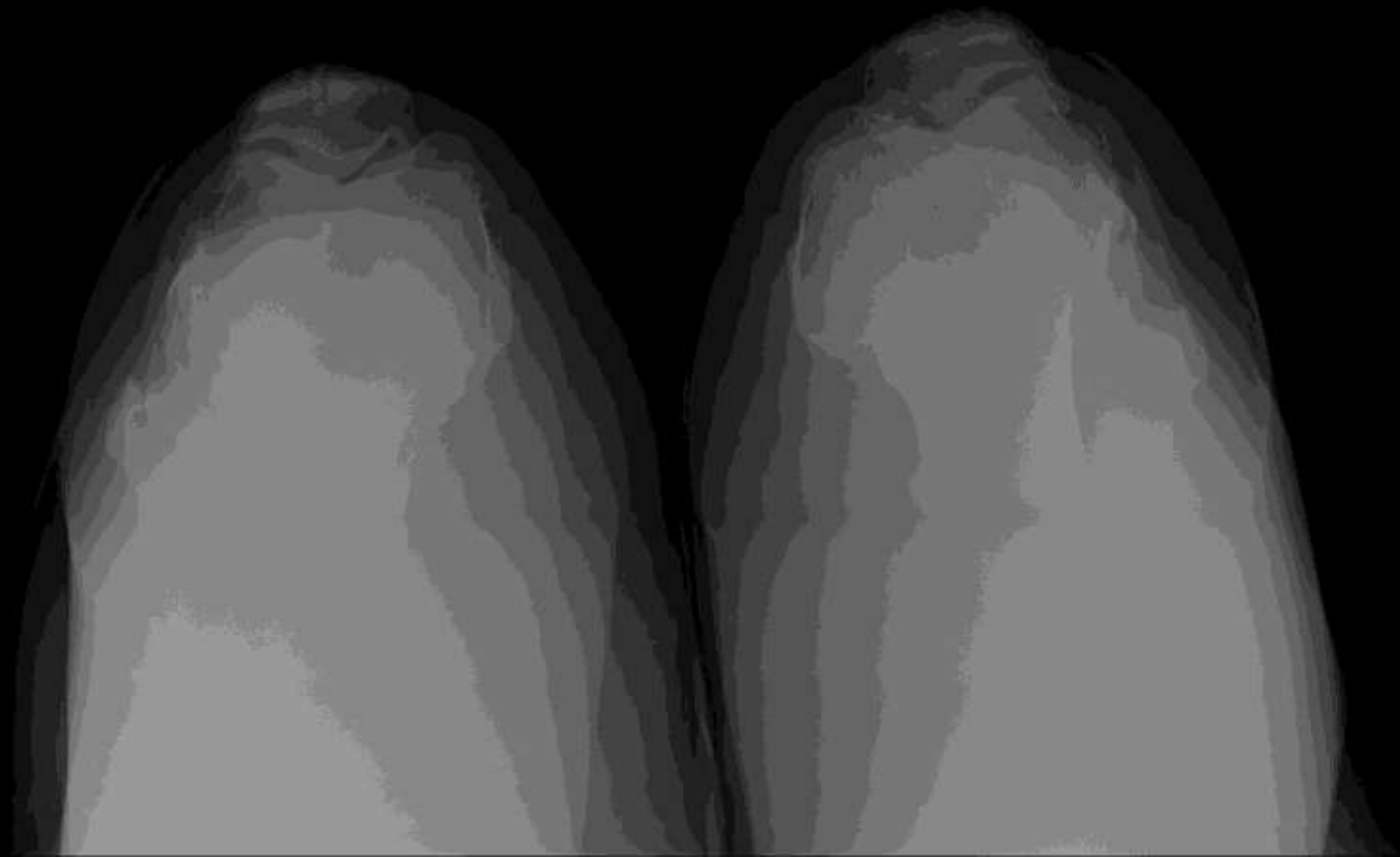
Radiographic views

- ❑ **Standing (AP) view**
 - ❑ **Lateral radiograph**
 - ❑ **Patellofemoral (skyline) view**
 - ❑ **Long leg/standard AP films to assess malalignment**
 - ❑ **Severity of bone defect**
- 

R







B. 24/03/1973

83054834

R

AP Erect

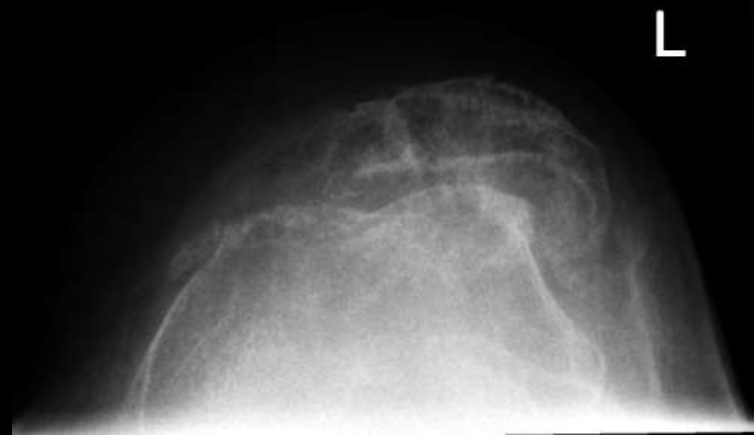
L

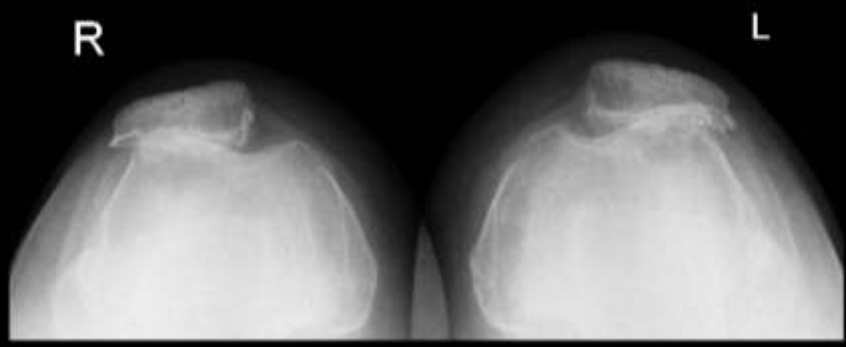


1973

1973









07, 13:53:50



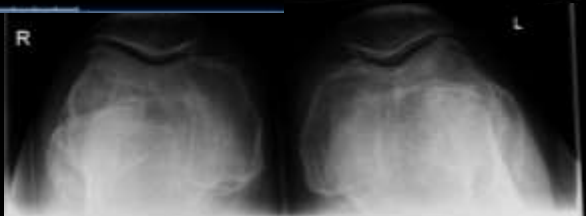
07, 13:53:50



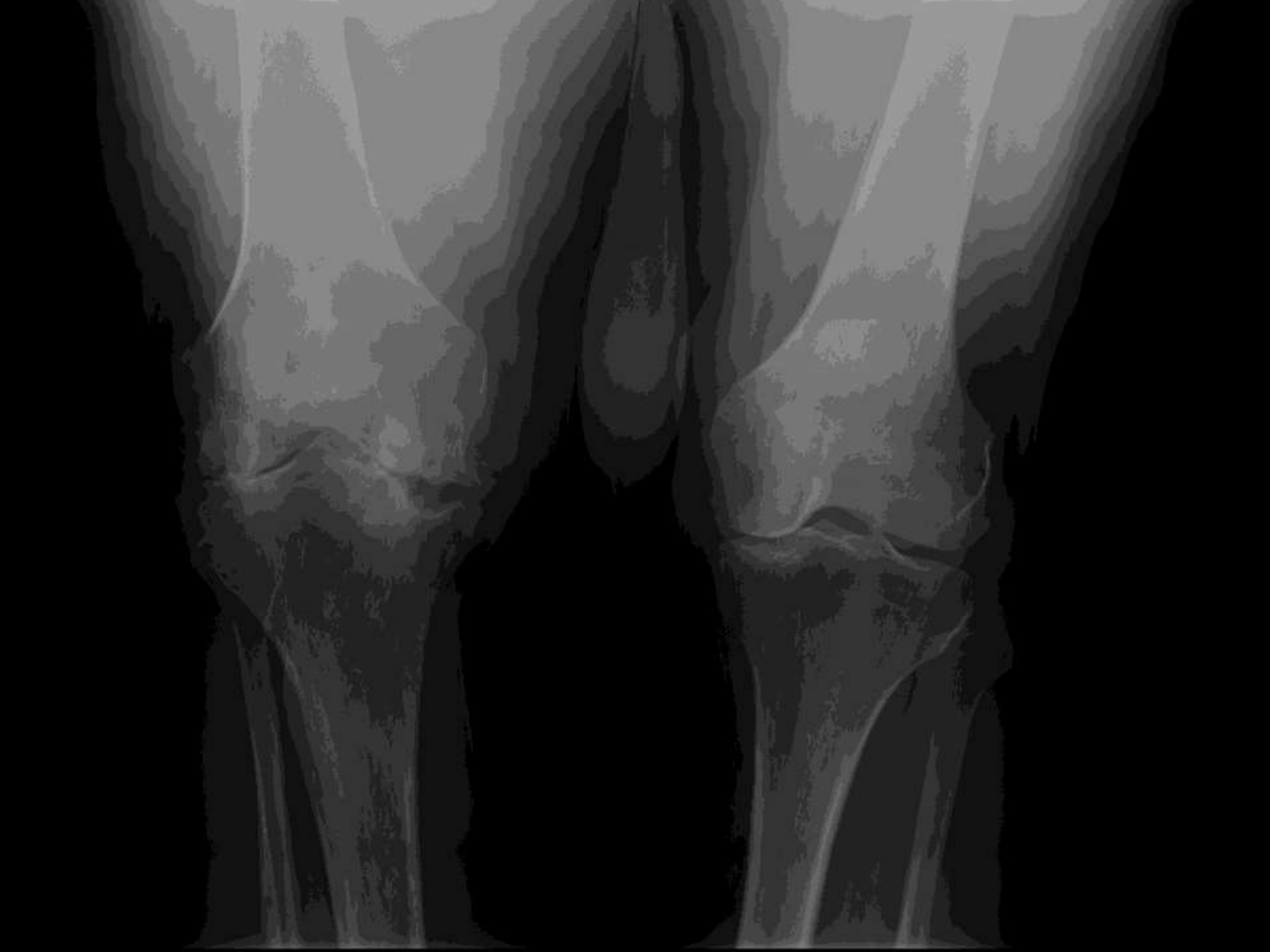
8:44

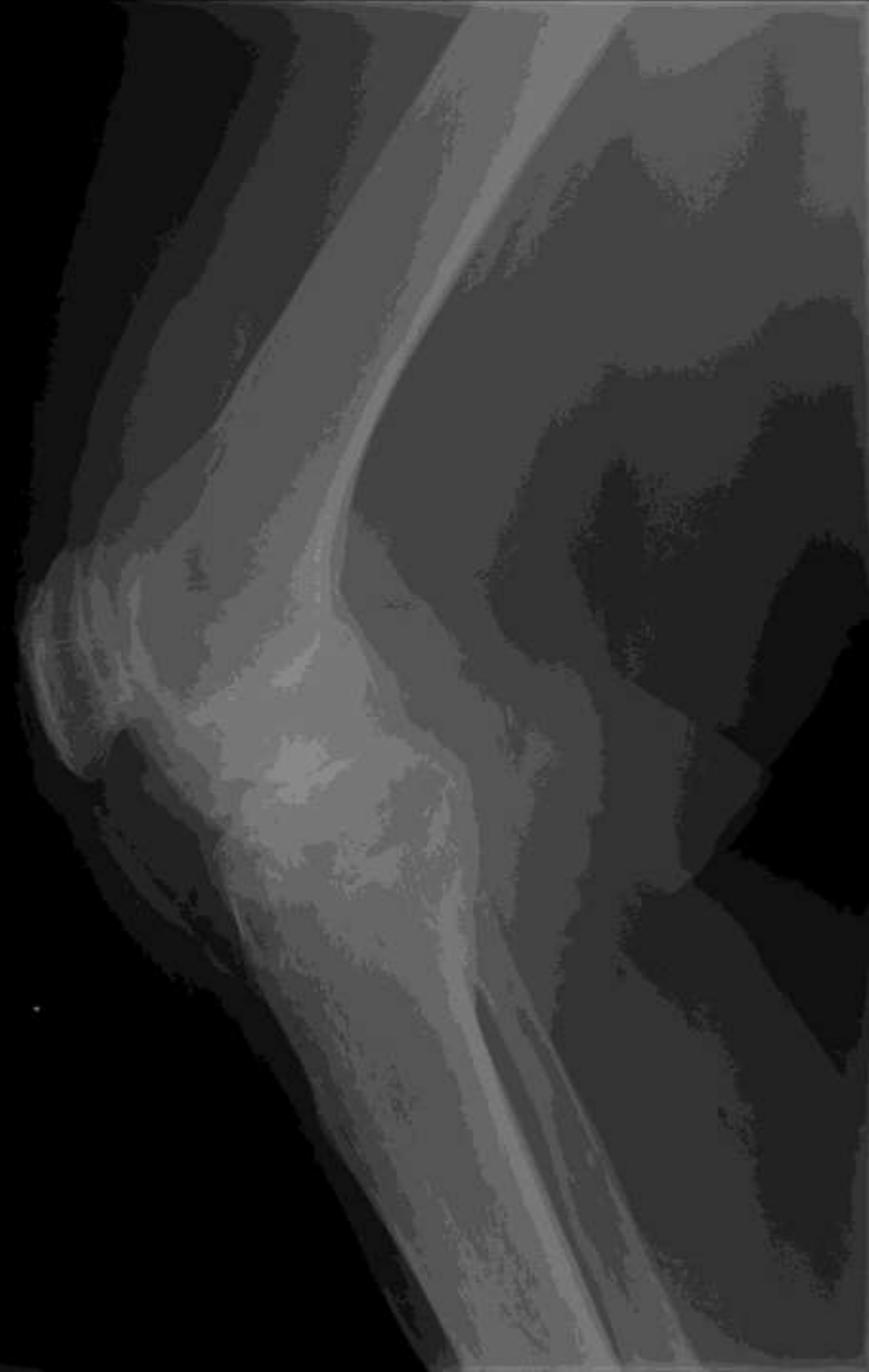


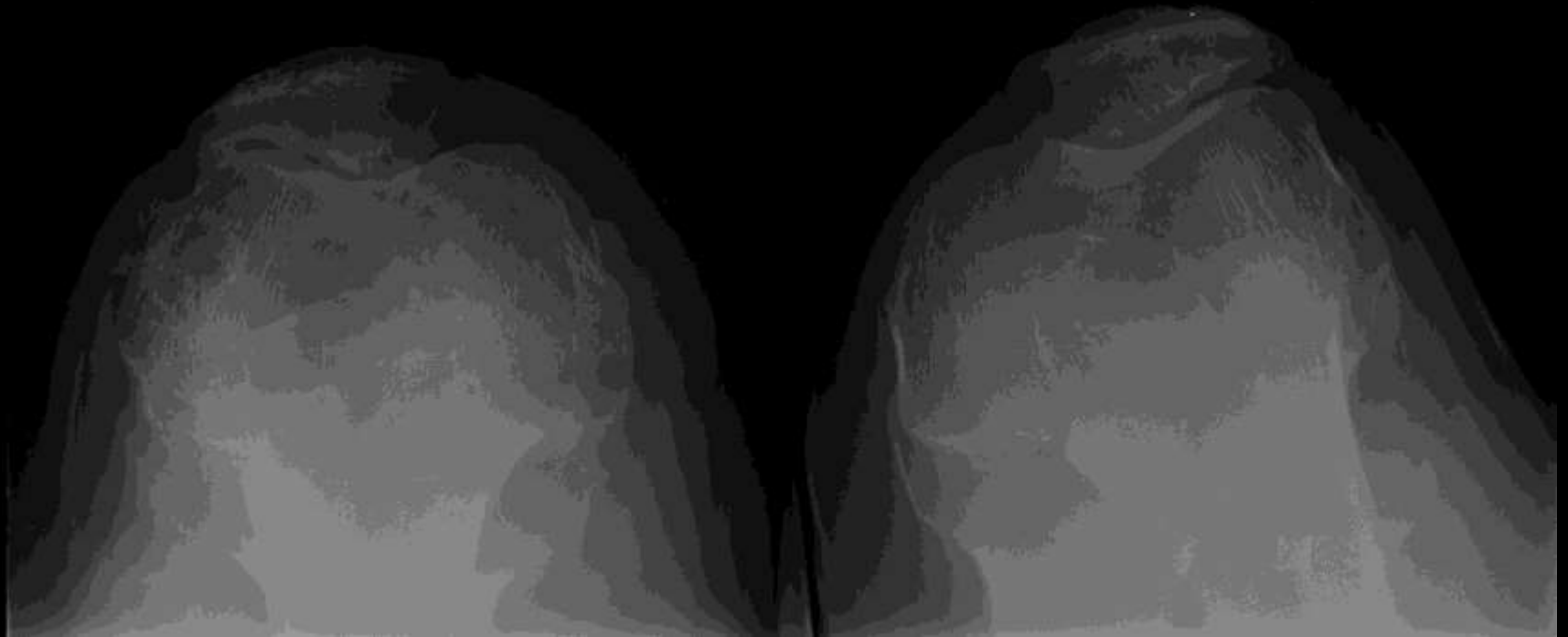
109/1956
1487











[HA]



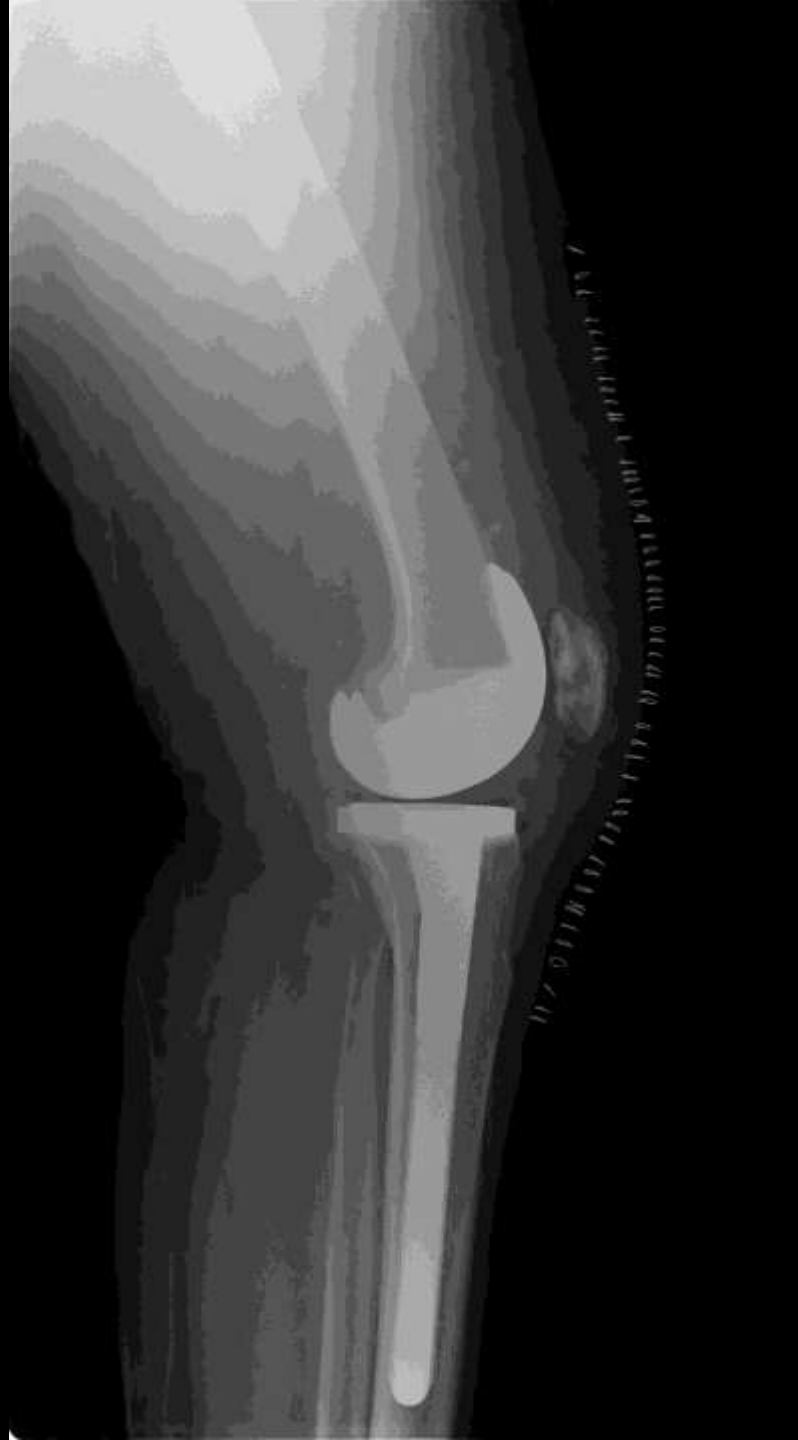
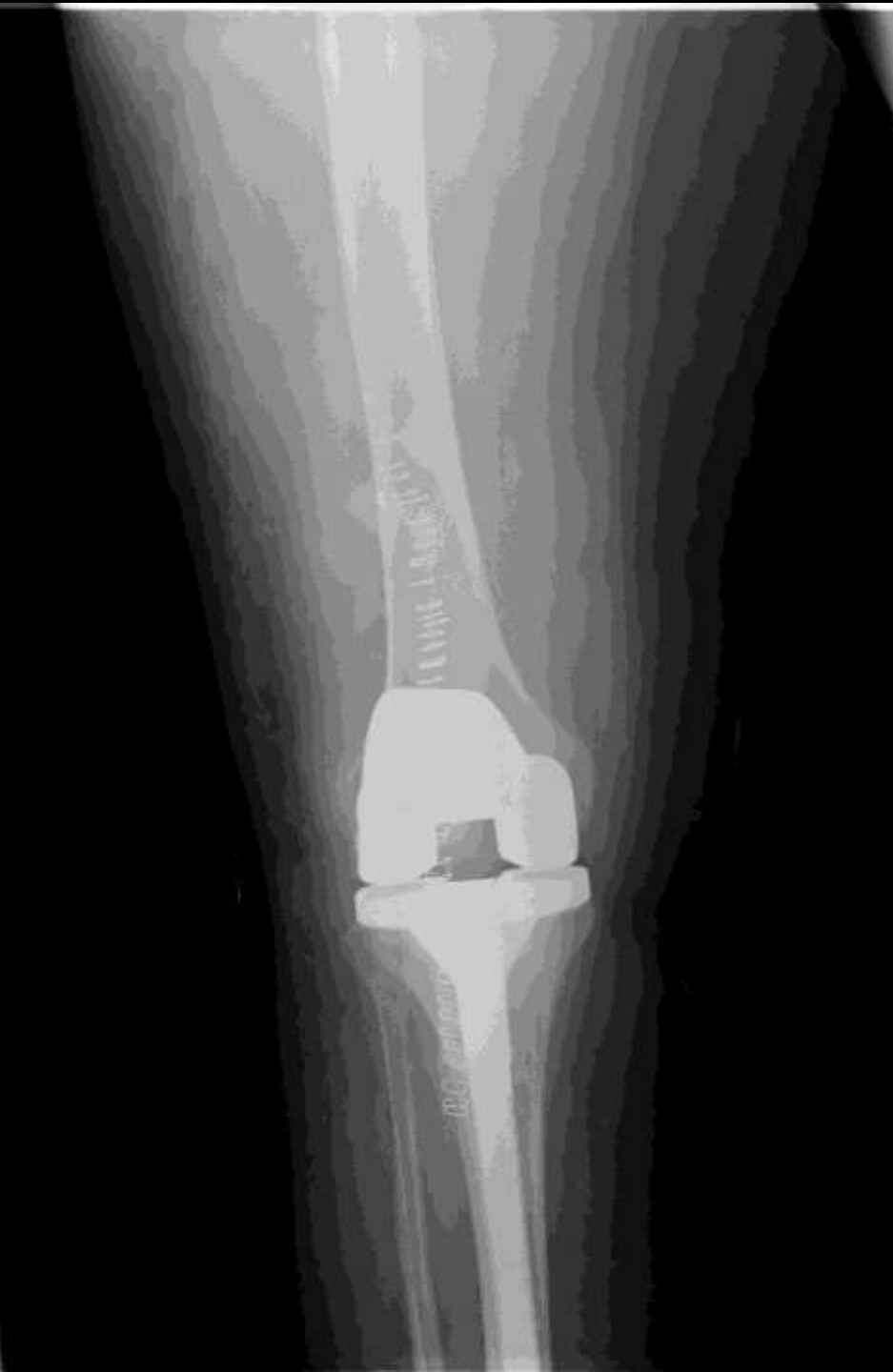
[FP]

MAX B

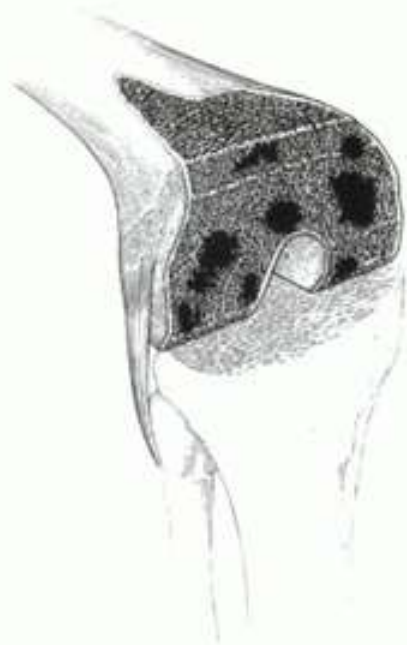


[FL]

MAX BALAJI DIA



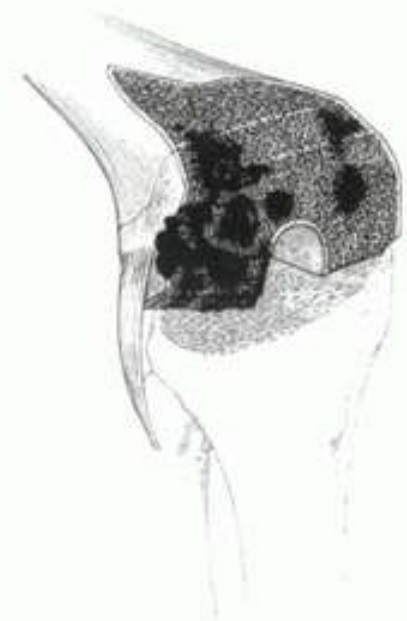




A



B



C



D

Knee x-ray as good as FLR





Effective measurement of knee alignment using AP knee radiographs

Alexandra N. Colebatch^{a,*}, Deborah J. Hart^b, Guangju Zhai^b, F.M. Williams^b,
Tim D. Spector^b, Nigel K. Arden^a

^a MRC Epidemiology Resource Centre, University of Southampton, Southampton, United Kingdom

^b Twin Research and Genetic Epidemiology Unit, St Thomas' Hospital, London, United Kingdom

ARTICLE INFO

Article history:

Received 4 April 2008

Received in revised form 23 July 2008

Accepted 24 July 2008

Keywords:

Knee osteoarthritis

Alignment

Knee radiograph

Epidemiology

ABSTRACT

The gold standard for measuring knee alignment is mechanical axis determined using full-limb radiographs (FLR). Measurement of joint alignment using antero-posterior (AP) knee radiographs is more accessible, economical and involves less radiation exposure to the patient compared with using full-limb radiographs. The aim of this study was to compare and assess the reproducibility of knee joint axial alignment on full-limb radiographs and conventional AP knee radiographs.

Knee alignment was measured in 40 subjects (80 knees) from the TwinsUK registry. Measurement of mechanical knee alignment was from FLR, and anatomic knee alignment from weight-bearing AP knee radiographs. Reproducibility was assessed by intra-class correlation coefficients and kappa statistics.

Reproducibility of knee alignment for both methods was good, with intra-observer ICC's of 0.99 for both FLR and AP radiographs. The mean alignment angle on FLR was 178.9° (SD 2.1, range 173–183°), and 179.0° (SD 2.1, range 173–185°) on AP films. 58.8% of knees on FLR and 66.3% on AP films were of varus alignment. Good correlations were seen between results for FLR and AP radiographs, with ICC ranging from 0.87–0.92 for left and right knees, and kappa statistics of 0.65–0.74.

Standard AP knee radiographs can be used to measure knee alignment with good reproducibility, and provide comparable results to those obtained from FLR. This will facilitate measurement of knee alignment in existing cohort studies to assess malalignment as a risk factor of incident OA, and in clinical practice.

© 2008 Elsevier B.V. All rights reserved.

❑ ***Occasional benefit from***

❑ ***In-WBC scan***

❑ ***CT scanning***

❑ ***MRI***

} ***bone loss or bone infection.***

Discussion of risks and benefits

□ Risks include

- ❖ Pulmonary embolism(single/staged)***
- ❖ Urinary tract infection***
- ❖ Chronic knee pain and stiffness***
- ❖ Bleeding into the knee joint***
- ❖ Nerve damage***
- ❖ Blood vessel injury***
- ❖ Infection of the knee which can require re-operation.***

Thank you

