

The Bone Infection Unit, Nuffield Orthopaedic Centre, Oxford, UK

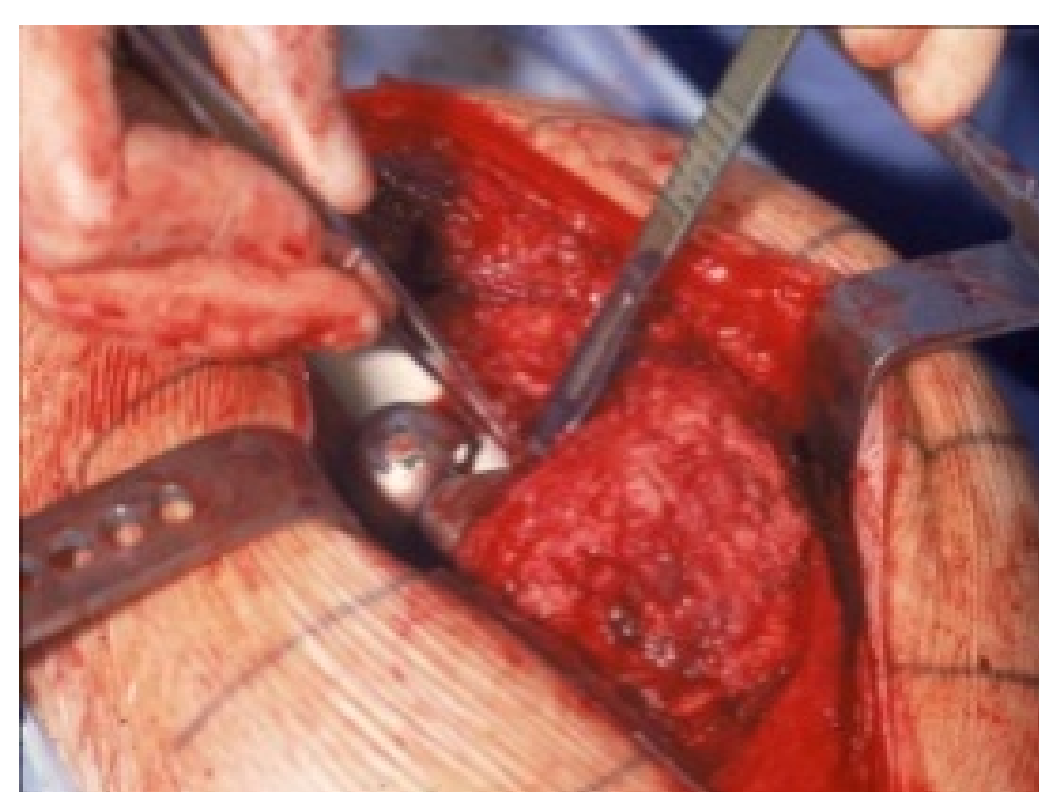
Host to the 6th Oxford Bone Infection Conference (OBIC) 31 Aug 2016 and to the European Bone & Joint Infection Society 35th Annual Meeting 1-3 Sept 2016



The **Nuffield Orthopaedic Centre (NOC)** is a specialist orthopaedic hospital and part of the Oxford University Hospitals (OUH) NHS Foundation trust. The **Bone Infection Unit (BIU)** at the NOC is dedicated to the investigation and treatment of all aspects of bone and joint infection, including chronic long-bone osteomyelitis, diabetic foot infections, spinal infections and orthopaedic device-related infection. The centre of activity of the unit is a 24-bed dedicated inpatient ward. Each patient is under the combined care of a consultant infection physician (and trainees) and a specialist orthopaedic surgeon (and trainees). Plastic surgeons are often involved. There is a multi-disciplinary team (MDT) that includes a tissue viability nurse, Ilizarov nurse, dietician, occupational therapists, physiotherapists and home IV nurses. There is a large outpatient parenteral antibiotic therapy (OPAT) programme. The BIU runs consultant ward rounds, multidisciplinary team (MDT) meetings, radiology MDT meetings, a weekly combined orthopaedic / infection / plastics outpatient clinic and an OPAT clinic. There is close liaison with infection control.

Guidelines: The unit is involved with national and international guidelines on the diagnosis and management of bone and joint infections (including advice on microbiological methods <https://www.gov.uk/government/collections/standards-for-microbiology-investigations-smi>)

The unit is integrated closely with the OUH departments of adult and paediatric infectious diseases and microbiology. This offers additional opportunities to attend weekly educational seminars with invited speakers; combined case conferences; medical and surgical grand rounds; ward rounds on the inpatient infectious diseases ward; microbiology rounds (including intensive care, transplant, and general clinical consults); and HIV, Infectious diseases, Rheumatology and Hepatitis clinics.

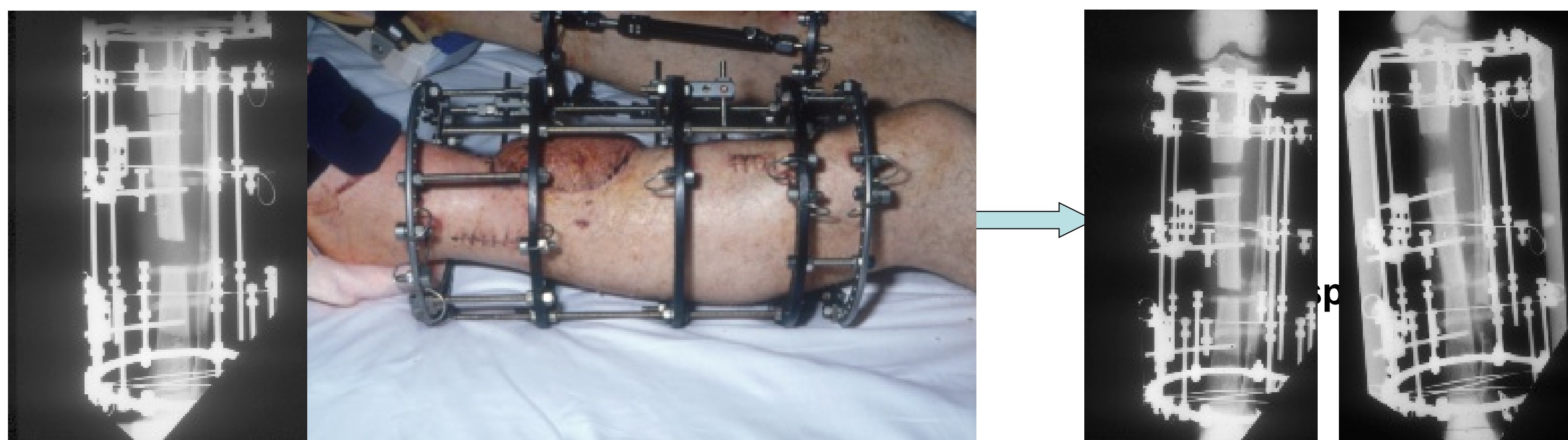


Multiple intra-operative sampling using separate instruments



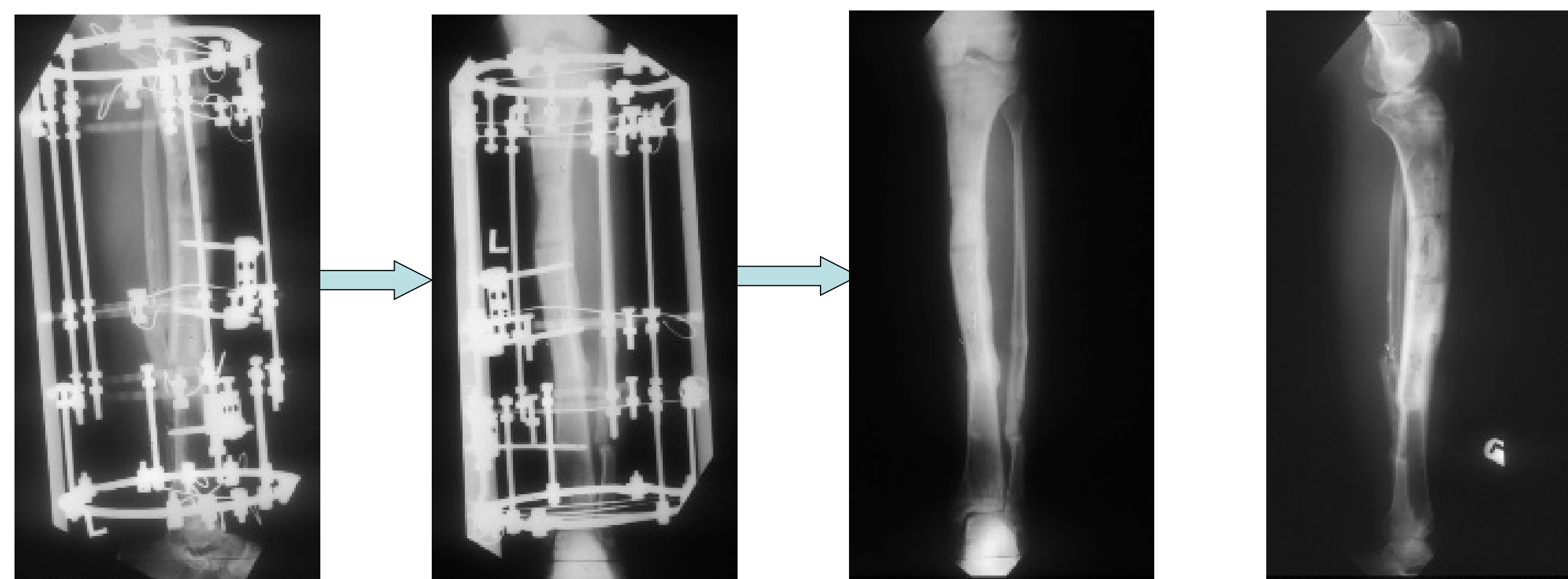
Meetings & Education : There are regular ward-based medical student and observer attachments. The unit presents the Oxford Bone infection Conference (**OBIC**) each year for microbiologists / ID physicians, orthopaedic and plastic surgeons, and nursing and allied health staff. See www.obic.org.uk & www.hartleytaylor.co.uk for more details.

Research agenda: There is an active clinical research group. The BIU is leading a multi-centre randomised controlled trial of oral versus intravenous antibiotics (OVIVA). We have described outcomes after debridement and retention or 2-stage revision, the outcomes after stopping long-term antibiotics and the microbiology of prosthetic joint infection and chronic osteomyelitis.



Osteomyelitis: Segmental resection, muscle flap.

Ilizarov bone transport



Union and consolidation

Frame off



Prosthetic Joint Infections



Diabetic Foot Infections



Spinal Infections

Selected Recent Publications

Atkins BL, Athanasou N, Deeks JJ, Crook DWM, Simpson H, Peto TEA, McLardy-Smith P, Berendt AR and the OSIRIS study group. *Prospective evaluation of criteria for microbiological diagnosis of prosthetic joint infection at revision arthroplasty.* Journal of Clinical Microbiology. 1998;36:2932-2939.

Moran E, Masters S, Berendt AR, McLardy-Smith P, Byren I, Atkins BL. *Guiding empirical antibiotic therapy in orthopaedics: The microbiology of prosthetic joint infection managed by debridement, irrigation and prosthesis retention.* Journal of Infection, Volume 55, Issue 1, July 2007, Pages 1-7

Matthews PC, Conlon CP, Berendt AR, Kayley J, Jefferies L, Atkins BL, Byren I. *Outpatient parenteral antimicrobial therapy (OPAT): is it safe for selected patients to self-administer at home? A retrospective analysis of a large cohort over 13 years.* J Antimicrob Chemother. 2007 Aug;60(2):356-62.

Collins I, Wilson-Macdonald J, Chami G, Burgoyne W, Vineyakam P, Berendt T, Fairbank J. (2008) *The diagnosis and management of infection following instrumented spinal fusion.* Eur Spine J. 17(3):445-50. Epub 2007 Dec 13

Ruparella N, Atkins BL, Hemingway J, Berendt AR, Byren I. *Pristinamycin as adjunctive therapy in the management of Gram-positive multi-drug resistant organism (MDRO) osteoarticular infection.* J Infect. 2008 Sep;57(3):191-7.

Matthews PC, Dean BJ, Medagoda K, Gundle R, Atkins BL, Berendt AR, Byren I. *Native hip joint septic arthritis in 20 adults: delayed presentation beyond three weeks predicts need for excision arthroplasty.* J Infect. 2008 Sep;57(3):185-90.

Byren I, Bejon P, Atkins BL, Angus B, Masters S, McLardy-Smith P, Gundle R, Berendt A. *One hundred and twelve infected arthroplasties treated with 'DAIR' (debridement, antibiotics and implant retention): antibiotic duration and outcome.* J Antimicrob Chemother. 2009 Mar 31.

Bejon P, Berendt A, Atkins BL, Green N, Parry H, Masters S, McLardy-Smith P, Gundle R, Byren I. *Two-stage revision for prosthetic joint infection: predictors of outcome and the role of reimplantation microbiology.* J Antimicrob Chemother. 2010 Mar;65(3):569-75.

Sheehy SH, Atkins B, Bejon P, Byren I, Wyllie D, Athanasou NA, Berendt AR, McNally MA. *The Microbiology of Chronic Osteomyelitis: prevalence of resistance to common empirical anti-microbial regimens.* J Infect. 2010 May; 60(5):338-43. Epub 2010 Mar 15.

Moran E, Byren I, Atkins BL. *The diagnosis and management of prosthetic joint infections.* J Antimicrob Chemother. 2010 Nov;65 Suppl 3:iiv45-54.

Hughes HC, Newnham R, Athanasou N, Atkins BL, Bejon P, Bowler IC. *Microbiological diagnosis of prosthetic joint infections: a prospective evaluation of four bacterial culture media in the routine laboratory.* Clin Microbiol Infect. 2011 Oct;17(10):1528-30

Bejon P, Byren I, Atkins BL, Scarborough M, Woodhouse A, McLardy-Smith P, Gundle R, Berendt AR. *Serial measurement of the C-reactive protein is a poor predictor of treatment outcome in prosthetic joint infection.* J Antimicrob Chemother. 2011 Jul;66(7):1590-3. Epub 2011 May 11.

Matthews PC(1), Chue AL, Wyllie D, Barnett A, Isinkaye T, Jefferies L, Lovering A, Scarborough M. *Increased teicoplanin doses are associated with improved serum levels but not drug toxicity.* J Infect. 2014 Jan;68(1):43-9. doi: 10.1016/j.jinf.2013.08.018. Epub 2013 Sep 3.

Minassian AM, Newnham R, Kalimeris E, Bejon P, Atkins BL, Bowler ICJW. *Use of an automated blood culture system (BD BACTECTM) for diagnosis of prosthetic joint infections: easy and fast.* BMC Infectious Diseases.2014, 14:233

Barrett L, Atkins BL. *The clinical presentation of prosthetic joint infection.* Journal of Antimicrobial Chemotherapy 2014 69 (9): i25-i27

Bose D, Kugan R, Stubbs DA, McNally MA. *Management of infected non-union of the long bones by a multidisciplinary team.* Bone Joint J 2015 97-B: 814-17.

Olesen UK, Juul R, Bonde CT, Moser C, McNally MA, Jensen LT, Elberg JJ, Eckardt H. *A review of 45 open tibial fractures covered with free flaps: analysis of complications, microbiology and prognostic factors.* Intern Orthop 2015 39(6): 1159-1166.

McNally MA, Sendi P. "Implant-associated osteomyelitis of long bones" In: Bone and Joint Infections: from microbiology to diagnostics and treatment. Wiley & Sons 2015: 303-323.

[Oral versus intravenous antibiotic treatment for bone and joint infections \(OVIVA\): study protocol for a randomised controlled trial.](#) Li HK, Scarborough M, Zambellas R, Cooper C, Rombach I, Walker AS, Lipsky BA, Briggs A, Seaton A, Atkins B, Woodhouse A, Berendt A, Byren I, Angus B, Pandit H, Stubbs D, McNally M, Thwaites G, Bejon P. Trials. 2015 Dec 21;16:583.

[An unsupported preference for intravenous antibiotics.](#) Li HK, Agweyu A, English M, Bejon P. PLoS Med. 2015 May 19;12(5):e

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