Sir,

Re: The Osseointegration Group of Australia Accelerated Protocol (OGAAP-1) for two-stage osseointegrated reconstruction of amputated limbs

M. Al Muderis, K. Tetsworth, A. Khemka, S. Wilmot, B. Bosley, S. J. Lord, V. Glatt
Bone Joint J 2016;98-B:952–60

We note the improved functional outcomes reported in this paper compared to other reports but must comment on the high infection rate. The authors report 54% adverse events with 20% requiring surgery and a 42% infection rate which underestimates the total as some patients had more than one infection.

The authors make no mention of the single stage Intra-osseous transcutaneous amputation prosthesis (ITAP)[1] based on a biomimetic study of deer antler interface[2], which produces a biological seal of skin around the implant with the goal of minimising infection. This technology has already been made available to clinical canine and feline patients[3] and in our view presents a missed opportunity for collaboration between the human and veterinary professions. The ITAP device has recently completed a clinical trial on 20 patients based at the Royal National Orthopaedic Hospital.

Further recent evolution of amputation prostheses since the application of ITAP to animals has occurred with the aims of reliable bone fixation and avoidance of osseous stress-protection for immediate weight-bearing, reliable skin on-growth, avoidance of marginal dermal stress and improved blood supply to the skin around the external spigot interface. A new device called Percutaneus Fixation To the Skeleton (PerFiTS) has been successfully implanted in more than twenty clinical veterinary patients and has been presented at veterinary and human surgical symposia, for which proceedings are available[4]. Translation of this design into human amputation implants would, we respectfully submit, increase their success, but have not been referenced even in spite of years of clinical use in veterinary patients.

The concept of One Medicine encompasses the notion that scientific data is available to both professional groups and can be disseminated across the professions for the benefit of both animals and humans. We hope that the authors might consider incorporating the available information on soft tissue integration in implanted amputation prostheses to their device, which would likely reduce the rate of infection for future human patients as it has for animal patients.

Prof Noel Fitzpatrick MRCVS DipSAS(Orth), Mr Mike Uglow FRCS(Tr&Orth)
On behalf of the Trustees of The Humanimal Trust

Co-signed by
Prof Gordon Blunn President of the British Orthopaedic Research Society

Institute of Orthopaedics and Musculo-Skeletal Science, University College London

---

[1] Cannon S., Pendegrass C., Kang N., Fitzpatrick N., Blunn G. Development Of An Intra-Osseous Transcuatenous Amputation Prosthesis (ITAP). Orthopaedic Proceedings May 2012, 94-B (SUPP XXI) 94

[2] C J Pendegrass, A E Goodship, J S Price, G W Blunn. Nature's answer to breaching the skin barrier: an innovative development for amputees. J Anat. 2006 Jul; 209(1): 59–67

[3] Fitzpatrick N1, Smith TJ, Pendegrass CJ, Yeadon R, Ring M, Goodship AE, Blunn GW. Intraosseous transcutaneous amputation prosthesis (ITAP) for limb salvage in 4 dogs. Vet Surg. 2011 Dec;40(8):909-25

[4] Veterinary Orthopaedic Society 2015, American College of Veterinary Surgeons 2015, British Small Animal Veterinary Association 2015, Combined International Orthopaedic Research Societies meeting 2015, Sam Simmonds keynote lecture 2016