

## Supplementary Material

10.1302/0301-620X.106B5.BJJ-2023-1381

**Table i.** Questions being voted upon at the Birmingham Orthopaedic Oncology Consensus Meeting.

Theme	Question
De-differentiated chondrosarcoma	How aggressive should we be with surgery on de-differentiated chondrosarcoma?
	Should we routinely use chemotherapy with de-differentiated chondrosarcoma?
Radiology of ACT	Which imaging feature gives the best positive/negative predictive value for differentiating an enchondroma from an ACT/chondrosarcoma?
	Can chondrosarcoma be safely diagnosed by radiology alone using radiology classifications e.g. BACTIP?
Pathological fractures	Does pathological fracture influence the outcome for chondrosarcoma?
	Is limb salvage safe in patients presenting with a pathological fracture through chondrosarcoma?
Treatment of ACT	Do purely intraosseous central cartilage tumours/ACT/chondrosarcoma metastasize?
	How should we treat intraosseous ACT/chondrosarcoma?
	Is it safe to avoid biopsy in radiologically typical chondrosarcomas/ACT?
Pelvic chondrosarcoma risk	Do pelvic chondrosarcomas behave more aggressively and therefore should they be treated more aggressively?
	Does navigated surgical resection (with jigs or computer navigation) of chondrosarcoma of pelvis result in better oncological outcomes?
Margins	What is a wide margin in chondrosarcoma?
	Should we vary the attempted surgical margin depending on grade of chondrosarcoma?

Local recurrence	Does local recurrence influence the prognosis for chondrosarcoma?
	How aggressive should we be in treating locally recurrent disease in chondrosarcoma?
Treatment after intralesional margins	Do intralesional margins for high grade chondrosarcoma increase risk of poor oncological outcomes?
	What is the optimal treatment following an inadvertent intralesional margin of a high-grade chondrosarcoma?
Surveillance	What is the optimal clinical and radiological surveillance following chondrosarcoma resection? Should we stratify by risk?
	Is it safe to undertake radiological surveillance in ACT? What is optimal interval between scans and when should we intervene?
Adjuvant treatment	What is the role of adjuvant therapy (radiotherapy/proton beam therapy/carbon ion/chemotherapy) in conventional chondrosarcoma?
	Is there a role for alternate treatments in chondrosarcoma (e.g. cryoablation/RFA/irradiation and reimplantation)?
Two-stage revision	Should all implants (including stems) be removed at a two-stage revision for PJI?
	How do we know it is safe to proceed with the second stage revision of PJI?
Antibiotic prophylaxis	What is the optimal antibiotic choice and duration for prophylaxis in limb oncology reconstructions?
	Should we give high risk reconstructions (e.g. pelvic reconstructions) extended prophylaxis and if so how long and what type?
Acute infection on chemotherapy	What is the optimal management of an acute PJI while the patient is still receiving chemotherapy?
	Can chemotherapy safely be continued with a low grade PJI?
DAIR	Is DAIR an acceptable way to treat PJI in oncology, how should we do it and when should DAIR be used?
	What adjuvants (e.g. local irrigation solutions, antibiotics carriers) should we use in a DAIR?
Single-stage revisions	Is single-stage revision an acceptable way to treat PJI in oncology and when should it be used?
	How long should antibiotics be administered following a single-stage treatment of PJI?
Extended antibiotics/suppression	Is there a role for prolonged antibiotics following the second stage of a two-stage revision?
	When should we consider long term antibiotic/antifungal suppression after PJI?
Risk factors for infection	What are the risk factors for PJI in oncology patients?

	Do coated (e.g. silver/iodine) implants reduce the risk of a subsequent PJI at primary implantation and should these be used routinely?
Wound management	How aggressive should we be with leaking wounds to reduce the risk of PJI?
	What wound strategies (e.g. dressings, drains) can be used to reduce risk of PJI and how long should we use them for?
Infection in biology vs EPR	Is there a difference in the rates of PJI following biological vs metallic reconstruction?
	What is the optimal management of an infected allograft reconstruction?
Organisms in PJI	Are there organisms which have a less favourable prognosis with a treatment rationale for PJI (e.g. DAIR/single-stage/two-stage)?
	Is 1.5-stage revision (interval prosthesis with local antibiotic delivery) an acceptable way to treat PJI? Is it suitable for all organisms?

ACT, atypical cartilage tumour; BACTIP, Birmingham Atypical Cartilage Tumour Imaging Protocol; DAIR, debridement, antibiotics and implant retention; PJI, periprosthetic joint infection; RFA, radiofrequency ablation.

## List of Birmingham Orthopaedic Oncology Consensus Meeting (BOOM) collaborators

Adesegun Abudu, Royal Orthopaedic Hospital (Birmingham, UK)  
Keisuke Ae, Cancer Institute Hospital, Japanese Foundation for Cancer Research (Tokyo, Japan)  
Manish Agarwal, Nanavati Max Superspeciality Hospital (Mumbai, India)  
Vivek Ajit Singh, University Hospital Kuala Lumpur (Kuala Lumpur, Malaysia)  
Toru Akiyama, Saitama Medical Center, Jichi Medical University (Saitama, Japan)  
Jose Ignacio Albergo, Hospital Italiano de Buenos Aires (Buenos Aires, Argentina)  
John Alexander, The James Cancer Hospital (Columbus, OH, USA)  
Bugra Alpan, Acibadem Maslak Hospital (Istanbul, Turkey)  
Ahmed Aoude, McGill University (Montreal, Canada)  
Apichat Asavamongkolkul, Faculty of Medicine Siriraj Hospital (Bangkok, Thailand)  
William Aston, Royal National Orthopaedic Hospital (London, UK)  
Thomas Baad-Hansen, Aarhus University Hospital (Aarhus, Denmark)  
Tessa Balach, University of Chicago (Chicago, IL, USA)  
Joseph Benevenia, Rutgers New Jersey Medical School (Summit, NJ, USA)  
Peter Bergh, Sahlgren University Hospital (Gothenburg, Sweden)  
Nicholas Bernthal, UCLA Department of Orthopaedic Surgery (Los Angeles, CA, USA)  
Odion Binitie, Moffitt Cancer Center (Tampa, FL, USA)  
Michele Boffano, Orthopaedic Oncology Unit, AOU Citta' della Salute e della Scienza (Torino, Italy)  
Jos Bramer, Amsterdam University Medical Centre (Amsterdam, Netherlands)  
Harriet Branford White, Oxford Sarcoma Service (Oxford, UK)  
Bernadette Brennan, Royal Manchester Childrens Hospital (Manchester, UK)  
Jorge Cabroler, Instituto Traumatologico Chile (Santiago, Chile)  
Jose Antonio Calvo Haro, Hospital General Universitario Gregorio Marano (Madrid, Spain)  
Domenico Andrea Campanacci, Careggi University Hospital (Firenze, Italy)  
Rodrigo Cardoso, Instituto Nacional de Traumatologia e Ortopedia (Rio De Janeiro, Brazil)  
Richard Carey Smith, Sir Charles Gairdner Hospital (Nedlands, WA, Australia)  
Nicolas Casales Fresnga, National Orthopaedic and Trauma Institute Republic University Montevideo (Montevideo, Uruguay)  
Jose Manuel Casanova, Centro Hospitalar Universitário de Coimbra, EP (Coimbra, Portugal)  
Oscar Ceballos, Instituto Traumatologico Chile (Santiago, Chile)  
Chung Ming Chan, National University Hospital (Singapore, Singapore)  
Yang-Guk Chung, Seoul St. Mary's Hospital/The Catholic University of Korea (Seoul, South Korea)  
Miguel Angel Clara-Altamirano, National Cancer Institute of Mexico (Mexico City, Mexico)  
Gillian Cribb, Robert Jones & Agnes Hunt (Oswestry, UK)  
Solomon Dadia, Tel Aviv Medical Center (Tel Aviv, Israel)  
Dietmar Dammerer, University Hospital Krems (Krems, Germany)  
Marieke de Vaal, University Hospital Münster (Münster, Germany)  
Javier Delgado Obando, Clínica Alemana (Santiago, Chile)  
Shaneel Deo, Middlemore Hospital (Auckland, New Zealand)  
Claudia Di Bella, St Vincent's Hospital (Melbourne, VIC, Australia)  
Davide Maria Donati, Rizzoli Orthopaedic Institute (Bologna, Italy)  
Makoto Endo, Kyushu University (Fukuoka, Japan)

Levent Eralp, Acibadem Hospital Group, Complex Extremity Recon. Unit (Istanbul, Turkey)

Bulent Erol, Marmara University Orthopedics and Traumatology (Istanbul, Turkey)

Scott Evans, Royal Orthopaedic Hospital (Birmingham, UK)

Will Eward, Duke University (Durham, NC, USA)

Fabrice Fiorenza, Dupuytren Teaching Hospital (Limoges, France)

Joao Freitas, Centro Hospitalar Universitário de Coimbra, EPE (Coimbra, Portugal)

Philipp Thoedor Funovics, Medical University of Vienna (Vienna, Austria)

Marcos Galli Serra, Hospital Universitario Austral / Orthopedic Oncology Unit (Buenos Aires, Argentina)

Michelle Ghert, University of Maryland (Hamilton, Canada)

Kanishka Ghosh, Newcastle Hospitals NHS Foundation Trust (Newcastle, UK)

Luis Carlos Gomez Mier, Instituto Nacional de Cancerología (Mexico City, Mexico)

Jesus Gomez Vallejo, Hospital Clinico Lozano Blesa (Zaragoza, Spain)

Anthony Griffin, Mount Sinai Hospital (Toronto, Canada)

Ashish Gulia, Homi Bhabha Cancer Hospital & Research Centre (Vishakhapatnam, India)

Maurice Guzman, University of Sydney (Sydney, NSW, Australia)

Jendrik Harges, University of Essen (Essen, Germany)

John Healey, Memorial Sloan Kettering Cancer Center (New York, NY, USA)

Adriana Hernandez, Tec Salud (Monterrey, Mexico)

Asle Hesla, Karolinska University Hospital (Stockholm, Sweden)

Chindanai Hongsaprabhas, Chulalongkorn University (Bangkok, Thailand)

Francis Hornicek, University of Miami (Miami, FL, USA)

Keith Hosking, Life Orthopaedic Hospital / Groote Schuur (Cape Town, South Africa)

Shintaro Iwata, National Cancer Hospital Japan (Tokyo, Japan)

Jake Jagiello, Royal Adelaide Hospital (Adelaide, SA, Australia)

Thomas Jenkins, University of Bristol (Bristol, UK)

Luke Johnson, South Australian Bone & Soft Tissue Tumour Unit, Flinders Medical Centre (Adelaide, SA, Australia)

Andy Johnston, Auckland City Hospital (Auckland, New Zealand)

Min Wook Joo, Department of Orthopaedic Surgery, St Vincent's Hospital, College of Medicine, The Catholic University of Korea (Seoul, Republic of Korea)

Paul Jutte, University Medical Center Groningen (Groningen, Netherlands)

Bilal Kapanci, Institut Jules Bordet (Brussels, Belgium)

Zeeshan Khan, Rehman Medical Institute and Medical College (Peshawar, Pakistan)

Hiroshi Kobayashi, The University of Tokyo Hospital (Tokyo, Japan)

Yehuda Kollender, Barzilai Medical Center (Ashkelon, Israel)

Sebastian Koob, University of Bonn (Bonn, Germany)

Daniel Kotrych, Pomeranian Medical University of Szczecin (Szczecin, Poland)

Louis-Romee Le Nail, University Hospital of Tours (Tours, France)

Pawel Legosz, Warszawski Uniwersytet Medyczny (Warsaw, Poland)

Burkhard Lehner, Orthopedic University Hospital Heidelberg (Heidelberg, Germany)

Andreas Leithner, Medical University of Graz (Graz, Austria)

Valerae Lewis, MD Anderson Cancer Center (Houston, TX, USA)

Peng Lin, The Second Affiliated Hospital Zhejiang University School of Medicine (Zhejiang, China)

Francisco Linares, Pontificia Universidad Javeriana (Bogota, Colombia)

Santiago Lozano Calderon, Massachusetts General Hospital (Boston, MA, USA)

Ashish Mahendra, Glasgow Royal Infirmary (Glasgow, UK)

Ferdiansyah Mahyudin, Airlangga University (Surabaya, Indonesia)  
Eric Mascard, Hospital Necker (Paris, France)  
Jean-Camille Mattei, Hôpital Européen Marseille (Marseille, France)  
Louise McCullough, NHS Grampian (Aberdeen, UK)  
Manuel Ricardo Medellín Rincon, Fundación CTIC Luis Carlos Sarmiento Angulo / Sarcoma Unit (Bogota, Colombia)  
Shinji Miwa, Kanazawa University (Kanazawa, Japan)  
Rhidian Morgan-Jones, Cardiff and Vale Orthopaedic Centre, University Hospital Llandough (Cardiff, UK)  
Diego Jesus Moriel Garcesco, Hospital Regional Universitario de Malaga (Malaga, Spain)  
Sophie Mottard, Maisonneuve Rosemont Hospital, Université de Montréal (Montreal, Canada)  
Robert Nakayama, Keio University School of Medicine (Tokyo, Japan)  
Prashant Narhari, Penang General Hospital (George Town, Malaysia)  
Gary O'Toole, St. Vincent's University Hospital Dublin (Dublin, Ireland)  
Vania Oliveira, Centro Hospitalar Universitário de Santo António (Porto, Portugal)  
André Olivier, Vergelegen Mediclinic (Cape Town, South Africa)  
Mohamed Omar, Hannover Medical School (Hannover, Germany)  
Eduardo Ortiz-Cruz, Hospital Universitario La Paz (Madrid, Spain)  
Harzem Ozger, Istanbul University Medical Faculty (Istanbul, Turkey)  
Korhan Ozkan, Istanbul Medeniyet University (Istanbul, Turkey)  
Emanuela Palmerini, IRCCS Istituto Ortopedico Rizzoli (Bologna, Italy)  
Panayiotis Papagelopoulos, Attikon Hospital (Athens, Greece)  
Michael Parry, Royal Orthopaedic Hospital (Birmingham, UK)  
Sam Patton, Edinburgh Royal Infirmary (Edinburgh, UK)  
Michael Mork Petersen, Rigshospitalet/University of Copenhagen/Department of Orthopedics (Copenhagen, Denmark)  
Gerard Powell, St Vincent's Hospital (Melbourne, VIC, Australia)  
Mark Puhaindran, National University Hospital, Singapore (Singapore, Singapore)  
Anand Raja, Cancer Institute (WIA) (Chennai, India)  
Raja Bhaskara Rajasekaran, Ganga Medical Centre & Hospitals (Coimbatore, India)  
Lauris Repsa, Riga Stradins University (Riga, Latvia)  
Mickael Ropars, Rennes University Hospital (Rennes, France)  
Andrea Sambri, IRCCS Azienda Ospedaliera Universitaria di Bologna (Bologna, Italy)  
Thomas Schubert, Cliniques Universitaires Saint-Luc (Brussels, Belgium)  
Ahmad Shehadeh, King Hussein Cancer Center/Orthopedic unit (Amman, Jordan)  
Geoffrey Siegel, Michigan Medicine / University of Michigan (Ann Arbor, MI, USA)  
Scott Sommerville, The Wesley Hospital (Auchenflower, QLD, Australia)  
Andre Spiguel, University of Florida (Gainesville, FL, USA)  
Jonathan Stevenson, Royal Orthopaedic Hospital (Birmingham, UK)  
Gwen Sys, Ghent University Hospital (Ghent, Belgium)  
Thomas Temple, University of Miami (Miami, FL, USA)  
Frank Traub, University Medical Center of the Johannes Gutenberg University Mainz (Mainz, Germany)  
Hiroyuki Tsuchiya, Kanazawa University (Kanazawa, Japan)  
Juan Valencia, Centro Oncológico Antioquia (Antioquia, Colombia)  
Michel Van de Sande, Leiden University Medical Centre (Leiden, Netherlands)  
Gualter Vaz, Centre Léon Berard (Lyon, France)  
Roberto Velez Villa, Hospital Universitari Vall D'Hebrón (Barcelona, Spain)

Oleg Vyrva, Sytenko Institute of Spine and Joint Pathology (Kharkiv, Ukraine)  
Hazem Wafa, Leuven University Hospitals (Leuven, Belgium)  
Wan Ismail Wan Faisham Numan, Universiti Sains Malaysia (Penang, Malaysia)  
Edward Wang, University of the Philippines Musculoskeletal Tumor Unit (Manila, Philippines)  
David Warnock, Musgrave Park Hospital (Belfast, UK)  
Joel Werier, The Ottawa Hospital (Ottawa, Canada)  
Kwok-Chuen Wong, Prince of Wales Hospital, The Chinese University of Hong Kong (Hong Kong, Hong Kong)  
Norio Yamamoto, Kanazawa University (Kanazawa, Japan)  
Zhaoming Ye, The Second Affiliated Hospital Zhejiang University School of Medicine (Zhejiang, China)  
Suraya Zainul Abidin, Singapore General Hospital (Singapore, Singapore)  
Tomas Zamora, Pontificia Universidad Católica de Chile (Santiago, Chile)  
Juan Pablo Zumarraga, Hospital Metropolitano / Departamento de Ortopedia y Traumatología (Quito, Ecuador)