

# Radiology Bulletin Oct 2018

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## Articles

The following journal articles are available from the Library and Knowledge Service electronically or in print. Please follow links to access full text online, contact me to order copies, or call into your nearest library.

## Studies

### [Choriocapillaris flow deficit in Bietti crystalline dystrophy detected using optical coherence tomography angiography.](#)

Miyata M. *British Journal of Ophthalmology* 2018;102(9):1208-1212.

[The purpose of this study was to evaluate blood flow in the choriocapillaris in patients with Bietti crystalline dystrophy (BCD) with CYP4V2 mutations using optical coherence tomography angiography (OCTA), and to explore the parameters associated with visual function.]

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### [Comparative analysis of autofluorescence and OCT angiography in Stargardt disease.](#)

Guduru A. *British Journal of Ophthalmology* 2018;102(9):1204-1207.

[The purpose of this observational study was to characterise the vasculature of the retina in patients with Stargardt disease (STGD) using optical coherence tomography angiography (OCTA) and to compare these

functional findings with fundus autofluorescence (FAF) imaging.]

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### **Conservatively treated orbital blowout fractures: spontaneous radiologic improvement.**

Young SM. *Ophthalmology* 2018;125(6):938-944.

[The purpose of this study was to determine if conservatively treated blowout fractures of the orbit undergo spontaneous improvement based on radiologic findings.]

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### **Effects of low-intensity pulsed ultrasound on knee osteoarthritis: a meta-analysis of randomized clinical trials.**

Zhou X-Y. *BioMed Research International* 2018;;7469197.

[The present study includes 5 high quality randomized controlled trials. The result indicated that LIPUS, used to treat knee OA without any adverse effect, had a beneficial effect on pain relief and knee functional recovery. More evidence is needed to prove whether LIPUS is effective in improving walking ability.]

Freely available online

### **External validation of computed tomography decision rules for minor head injury: prospective, multicentre cohort study in the Netherlands.**

Foks KA. *BMJ* 2018;362:k3527 .

[Application of the CHIP, NOC, CCHR, or NICE decision rules can lead to a wide variation in CT scanning among patients with minor head injury, resulting in unnecessary CT scans and missed findings. Until an existing decision rule has been updated, any of the four rules can be used for patients presenting minor head injuries at the emergency department. Use of the CHIP rule is recommended because it leads to a substantial reduction in CT scans while missing few potential neurosurgical lesions.]

Freely available online

### **MRI versus laparoscopy to diagnose the main causes of chronic pelvic pain in women: a test-accuracy study and economic evaluation.**

Khan KS. *Health Technology Assessment* 2018;22(40):<https://doi.org/10.3310/hta22400>.

[MRI does not add value to information already gained from history, examination and ultrasound about idiopathic chronic pain and was never a cost-effective option compared with laparoscopy.]

Freely available online

### **Multiparametric MRI to improve detection of prostate cancer compared with transrectal ultrasound-guided prostate biopsy alone: the PROMIS study.**

Brown LC. *Health Technology Assessment* 2018;22(39):<https://doi.org/10.3310/hta22390>.

[Adding multiparametric MRI as an initial test prior to prostate biopsy can reduce the proportion of men having unnecessary biopsies and improve the detection of clinically significant prostate cancer.]

Freely available online

### **Optical coherence tomographic angiography identifies peripapillary microvascular dilation and focal non-perfusion in giant cell arteritis.**

Gaier ED. *British Journal of Ophthalmology* 2018;102(8):1141-1146.

[The aim of this study was to determine the optical coherence tomographic angiography (OCT-A) characteristics of arteritic anterior ischaemic optic neuropathy (AAION) in the context of giant cell arteritis (GCA).]

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### **Optical coherence tomography angiography analysis of foveal microvascular changes and inner retinal layer thinning in patients with diabetes.**

Kim K. *British Journal of Ophthalmology* 2018;102(9):1226-1231.

[The purpose a cross-sectional study was to evaluate the correlation between inner retinal layer thinning and the foveal microvasculature in type 2 diabetes using optical coherence tomography angiography (OCTA).]

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### [Posterior vitreous detachment as observed by wide-angle OCT Imaging.](#)

Tsukahara M. *Ophthalmology* 2018;125(9):1372-1383.

[Posterior vitreous detachment (PVD) plays an important role in vitreoretinal interface disorders. Historically, observations of PVD using OCT have been limited to the macular region. The purpose of this observational cross-sectional study is to image the wide-angle vitreoretinal interface after PVD in normal subjects using montaged OCT images.]

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### [Retinal vascular alterations in reticular pseudodrusen with and without outer retinal atrophy assessed by optical coherence tomography angiography.](#)

Cicinelli MV. *British Journal of Ophthalmology* 2018;102(9):1192-1198.

[The purpose of this observational cross-sectional study was to investigate the intraretinal structural and vascular alterations in patients featuring reticular pseudodrusen (RPD), RPD with outer retinal atrophy (ORA), and drusen.]

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### [Wide-field en face swept-source optical coherence tomography angiography using extended field imaging in diabetic retinopathy.](#)

Hirano T. *British Journal of Ophthalmology* 2018;102(9):1199-1203.

[The purpose of this study was to examine the feasibility of wide-field en face swept-source optical coherence tomography angiography (SS-OCTA) with extended field imaging (EFI) for evaluation of the retinal vasculature in diabetic retinopathy (DR).]

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## **Trials**

### [Active Surveillance Magnetic Resonance Imaging Study \(ASIST\): Results of a Randomized Multicenter Prospective Trial.](#)

Klotz L. *European Urology* 2018;:S0302-2838(18)30450-0.

[The addition of MRI with targeted biopsies to systematic biopsies did not significantly increase the upgrading rate compared with systematic biopsy alone. Furthermore, 2-core targeted biopsies alone resulted in a nonsignificant trend to less upgrading than 12-core systematic biopsy ( $p=0.09$ ). In men on active surveillance, targeted biopsies identify most, but not all, clinically significant cancers.]

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### [Coronary CT Angiography and 5-Year Risk of Myocardial Infarction.](#)

SCOT-HEART Investigators. *New England Journal of Medicine* 2018;379(10):924-933 .

[In this trial, the use of CTA in addition to standard care in patients with stable chest pain resulted in a significantly lower rate of death from coronary heart disease or nonfatal myocardial infarction at 5 years than standard care alone, without resulting in a significantly higher rate of coronary angiography or coronary revascularization. ]

Contact the library for a copy of this article

### [Does Point-of-Care Ultrasonography Improve Clinical Outcomes in Emergency Department Patients With Undifferentiated Hypotension? An International Randomized Controlled Trial From the SHoC-ED Investigators.](#)

Atkinson PR. *Annals of Emergency Medicine* 2018;:10.1016/j.annemergmed.2018.04.002.

[To our knowledge, this is the first randomized controlled trial to compare point-of-care ultrasonography to standard care without point-of-care ultrasonography in undifferentiated hypotensive ED patients. We did not find any benefits for survival, length of stay, rates of CT scanning, inotrope use, or fluid administration. The addition of a point-of-care ultrasonography protocol to standard care may not translate into a survival benefit in this group.]

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## Reviews

### [Adaptive optics imaging of inherited retinal diseases.](#)

Georgiou M. *British Journal of Ophthalmology* 2018;102(8):1028-1035.

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### [Clinical imaging in dementia with Lewy bodies. \[Clinical review\]](#)

Surendranathan. *Evidence-Based Mental Health* 2018;21(2):61 - 65.

[Dementia with Lewy bodies (DLB) is a common neurodegenerative dementia in older people; however, the clinical features, particularly cognitive fluctuations and rapid eye movement sleep disorder, are often hard to elicit, leading to difficulty in making the diagnosis clinically. Here we examine the literature for the evidence behind imaging modalities that could assist in making the diagnosis. ]

Freely available online

### [Digital technologies for the assessment of cognition: a clinical review. \[Clinical review\]](#)

Chinner. *Evidence-Based Mental Health* 2018;21(2):67 - 71.

[This clinical review aimed to summarise currently available evidence on digital technologies that can be used to monitor cognition. We identified a range of pervasive digital systems, such as smartphones, smartwatches and smart homes, to assess and assist elderly demented, prodromal and preclinical populations. Generally, the studies reported good level of agreement between the digital measures and the constructs they aimed to measure. ]

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### [Peripapillary vascular changes in radiation optic neuropathy: an optical coherence tomography angiography grading.](#)

Parrozzani R. *British Journal of Ophthalmology* 2018;102(9):1238-1243.

[To investigate peripapillary vascular changes secondary to radiation optic neuropathy (RON) using optical coherence tomography angiography (OCT-A) and to propose a clinical grading of RON based on OCT-A findings. ]

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## Systematic Reviews

### [Can ultrasound measures of intrinsic foot muscles and plantar soft tissues predict future diabetes-related foot disease? A systematic review.](#)

Morrison T. *PLoS One* 2018;13(6):e0199055 .

[No direct evidence was found to indicate B-mode ultrasound measures can predict soft tissue changes in the plantar foot in diabetes, although low level studies indicate ultrasound has the potential to identify structural change. Clinical, methodological and statistical heterogeneity limit result applicability. This review highlights the need for robust prospective longitudinal research to examine the predictive validity of this method.]

Freely available online

### [Classification of Tendon Matrix Change Using Ultrasound Imaging: A Systematic Review and Meta-analysis.](#)

Matthews W. *Ultrasound in Medicine and Biology* 2018;;doi: 10.1016/j.ultrasmedbio.2018.05.022.

[Ultrasound imaging (US) is an accurate and reliable method used to diagnose tendinopathy. This systematic review was aimed at identifying common criteria and parameters used to diagnose tendinopathy, the methodological quality of studies and the predictive value of US.]

Contact the library for a copy of this article

### [Diagnostic performance of angiography-derived fractional flow reserve: a systematic review and Bayesian meta-analysis.](#)

Collet C. *European Heart Journal* 2018;;doi: 10.1093/eurheartj/ehy445.

[The accuracy of angiography-derived FFR was good to detect haemodynamically significant lesions with

pressure-wire measured FFR as a reference. Computational approaches and software packages did not influence the diagnostic accuracy of angiography-derived FFR. A diagnostic strategy trial with angiography-derived FFR evaluating clinical endpoints is warranted.]

Contact the library for a password

### **Research capacity building frameworks for allied health professionals - a systematic review.**

Matus J. *BMC Health Services Research* 2018;18(1):716.

[The aim of this systematic review was to identify existing integrated models and frameworks which guide research capacity building for allied health professionals working in publicly funded secondary and tertiary healthcare organisations. Three interconnected and interdependent themes were identified as being essential for research capacity building, including 'supporting clinicians in research', 'working together' and 'valuing research for excellence'.]

Contact the library for a copy of this article

### **[The identification and appraisal of assessment tools used to evaluate metatarsus adductus: a systematic review of their measurement properties.](#)**

Marshall N. *Journal of Foot and Ankle Research* 2018;11:25 .

[Techniques to measure metatarsus adductus included the heel bisector method, photocopies, ultrasound, footprints, dynamic foot pressure and radiographs. There was a paucity of quality data reporting the reliability, validity or responsiveness for measuring metatarsus adductus.]

Freely available online

## **Books**

### **Clark's essential PACS, RIS and imaging informatics**

Alexander Peck

CRC Press, 2018

Classmark WN155

Imaging informatics is a complex and historically rapidly changing field, knowledge of which is central to the practice of all imaging specialists. This convenient pocket guide provides the foundations of knowledge in informatics, allowing radiographers in training and in practice, assistant practitioners and other allied health professionals to understand, use and develop more efficient ways of imaging that will in turn deliver improved patient care.

### **Essentials of radiology - 4th**

Fred A. Mettler.

Elsevier, 2018

Classmark WN100

Ideal for radiology residents and medical students, as well as anyone who reads or orders radiology imaging studies, this user-friendly reference covers the basics of how to approach, read, and interpret radiological images. Using concise, step-by-step explanations and an enjoyable writing style, expert radiologist Dr. Fred A Mettler, Jr., walks you through a sequential thought process for all common indications for radiologic studies and their interpretation. Featuring thorough updates from cover to cover, this resource covers the fundamental information you need to know, as well as recent advances in the field.

### **Fast facts for the radiology nurse : an orientation and nursing care guide in a nutshell**

edited by Valerie Arne Grossman

Springer, 2018

Classmark WN110

This portable guide to radiology nursing provides comprehensive information about this emerging specialty in a concise format designed for speedy information retrieval. Written for both practicing nurses and new orientees, it outlines general procedures and protocols, along with requisite information for patient care in



specialized areas of radiology. It discusses care for all patient populations including morbidly obese, pediatric, geriatric, and oncology and addresses vascular access, infection control, teamwork, and sterile technique in the radiology setting. The book encompasses over 50 different IR procedures, and also describes emergency situations in radiology and how to respond to them.

## Journals

*Open Access Journals that may be of interest*

### [International Journal of Biomedical Imaging](#)

International Journal of Biomedical Imaging is a peer-reviewed, Open Access journal that promotes research and development of biomedical imaging by publishing high-quality research articles and reviews in this rapidly growing interdisciplinary field.

### [Cancer Imaging](#)

Cancer Imaging is an open access, peer-reviewed journal publishing original articles, reviews and editorials written by expert international radiologists working in oncology.

The journal encompasses CT, MR, PET, ultrasound, radionuclide and multimodal imaging in all kinds of malignant tumours, plus new developments, techniques and innovations.

### [Magnetic Resonance Insights](#)

[An international, peer reviewed, open access journal that focuses on all aspects of the development and use of magnetic resonance including all levels of basic and applied research, as well as all aspects of clinical research and applications in biology. This journal is a member of the Committee on Publication Ethics (COPE).]

## Guidelines

*The following new guidance has recently been published:*

### [Standards for angiography and image-guided endovascular interventions](#)

Royal College of Radiologists (RCR);2018.

[https://www.rcr.ac.uk/system/files/publication/field\\_publication\\_files/bfcr183\\_standards\\_for\\_angiography.pdf](https://www.rcr.ac.uk/system/files/publication/field_publication_files/bfcr183_standards_for_angiography.pdf)

[24/7 delivery of safe angiography and endovascular interventional services relies on appropriately trained, competent staff, in sufficient number, with access to adequate equipment and consumables. This guidance covers the end-to-end process, including patient care from pre- to post-procedure, facilities and patient hand over. This document replaces the 2011 guidance Standards in vascular radiology and reflects the numerous developments in patient safety that have occurred since that time.]

*Freely available online*

## Reports

### [Accelerating Artificial Intelligence in health and care: results from a state of the nation survey](#)

AHSN Network; 2018 .

<http://www.ahsnetwork.com/wp-content/uploads/2014/12/AHSN-Network-AI-Report.pdf>

[The report spotlights some of the opportunities AI creates and shows where it is already being used in projects across the country. It also considers some of the barriers to wider deployment of AI and proposes solutions, including the creation of a "code of conduct" for the sector.]

*Freely available online*

### [Initial code of conduct for data-driven health and care technology.](#)

Department of Health and Social Care; 2018.

<https://www.gov.uk/government/publications/code-of-conduct-for-data-driven-health-and-care-technology>

[The code of conduct contains principles that set out what the DHSC expects from suppliers of data-driven

technologies, and a set of commitments saying what the government will do to support innovators in health and care. The aim is to make it easier for suppliers to understand what is needed, and to help health and care providers choose safe, effective, secure technology to improve their services. There is a questionnaire for you to provide feedback on this initial version.]

*Freely available online*

### **[Ultrasound shows potential for confirming the diagnosis of pneumonia in children.](#)**

NIHR Dissemination Centre; 2018.

<https://discover.dc.nihr.ac.uk/content/signal-000624/diagnosis-of-pneumonia-in-children-may-be-confirmed-by-ultrasound>

[NIHR Signal. A review of the published evidence found that lung ultrasound was more sensitive (missed fewer cases) and about as specific (gave about the same number of false alarms) as chest X-ray, when used to confirm suspected community-acquired pneumonia in children.]

*Freely available online*

## **Image Challenge**

### **[Guess the x-ray: September Image Challenge](#)**

*Carestream Radiology 2018*

[This month's "Guess the X-ray Image Challenge!" is here! We welcome radiologists, technologists, RAs, MDs, PAs – or anyone who thinks they're up to the challenge – to guess the subject in this X-ray. Please leave your answer in the comment section below or on our Facebook page. The challenge will stop at the end of the month.]

*Freely available online*

### **[Man with severe abdominal pain \[Image challenge\]](#)**

Chen, C. *Emergency Medicine Journal* 2018;35(9)

[A 59-year-old man with no medical history presented to the ED with abdominal distension, vomiting and diffuse abdominal pain after drinking seven cups of white gourd drink (an authentic Asian drink composed mainly of white gourd). A chest radiograph was performed]

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### **[Eighty-nine-year-old woman with abdominal pain and vomiting](#)**

Schramm J. *Emergency Medicine Journal* 2018;35(9)

[An 89-year-old female patient presented to the ED with mild abdominal pain and a history of vomiting for 3 days. Because of dementia, further history was unclear. Vital signs were normal. Clinical examination revealed mild abdominal pain without defence or signs of peritonism. Bowel sounds were normal. Lab results showed a white cell count of 16x10<sup>9</sup>/L, otherwise normal. There was no episode of vomiting during the ED consultation. A supine AXR was performed]

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### **[Lower extremity pain and numbness](#)**

Pettit N. *Emergency Medicine Journal* 2018;35(7)

[A 45-year-old man with no past medical history presents with bilateral lower extremity pain and perineal numbness after walking 10–15 min. The pain starts in his bilateral buttocks and radiates down into his thigh and into his toes. He has no back pain, fever, difficulty urinating or stooling, incontinence or trauma. Social history is positive for smoking. Physical examination was only remarkable for non-dopplerable lower extremity pulses, and he was unable to ambulate down the ED hallway without becoming symptomatic. Ultrasound of his abdominal aorta was performed.]

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### **[Painful shoulder post fall](#)**

Mayne AIW. *Emergency Medicine Journal* 2018;35(6)

[A 32-year-old man presented to the ED after a heavy fall on his left shoulder. He presented the following day with pain and gross limitation of movement in the left shoulder. There was no history of previous injury]

to the left shoulder. This was his non-dominant limb and he worked in a manual occupation. He was neurovascularly intact.]

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### **Acute chest pain after tooth extraction**

Zaheer S. *Emergency Medicine Journal* 2018;35(5)

[A previously healthy 55-year-old woman presented to the ED with chest discomfort. She underwent wisdom tooth extraction the same morning, during which she experienced discomfort over the right side of neck, which gradually spread to the right and central chest region, and was associated with discomfort while breathing. On examination, there was tenderness over the neck and chest. Range of motion of the neck was limited due to pain. Her vitals were stable, and the rest of the physical examination was unremarkable. A frontal chest radiograph was obtained]

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### **Sudden onset paraplegia**

Bunevicius A. *Emergency Medicine Journal* 2018;35(5)

[A 75-year-old man presented with acute onset thoracic back pain, progressive leg weakness with numbness and urinary retention. His symptoms started suddenly and progressed overnight. He denied a recent history of trauma. On neurological examination he had complete loss of all sensations below Th10 level and leg paraplegia (American Spinal Injury Association grade A myelitis). Admission lateral spine X-ray and non-contrast CT were performed]

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## **Websites**

*The following website(s) may be of interest:*

### **eProton: e-learning programme to prepare staff for new proton beam therapy centres**

<https://www.e-lfh.org.uk/programmes/eproton/>

[A new e-learning programme to support education and training of staff in preparation for the opening of the first NHS proton beam therapy centres in the UK is now available. The programme has been designed for all staff groups working in NHS radiotherapy and related services, especially those in referral or support centres. Topics covered include clinical indications and side effects, treatment planning and delivery, radiation protection, along with the multi-disciplinary patient pathway. ]

*Freely available online*

### **Maryann Hardy – The thoughts of a radiography professor**

<https://maryannhardy.wordpress.com/>

[Maryann Hardy is Professor of Radiography at the University of Bradford, UK and an advocate of professional and personal advancement.]

*Freely available online*

## **Acknowledgements**

*This current awareness bulletin was produced by the Oliveira Library for IOW NHS Trust staff but may be shared with other NHS Trusts.*

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