Proffered papers: History

SP01.1 Dr James Ambrose- Unsung hero of CT

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We are familiar with Godfrey Hounsfield as the inventor of the CT scanner. As we approach the 50th Anniversary of the first Clinical CT scan it is important to recognise the Radiologist who made this possible. James Ambrose was born in South Africa and after serving in the RAF, he returned to South Africa to study medicine at University of Cape Town. Two years after graduating he came to England, where he began radiological training at the Middlesex Hospital, then as a senior registrar at Guy's Hospital. He moved to the Atkinson Morley's hospital, one of the busiest Neuro centres in London, and was appointed consultant radiologist in 1962. Jamie had a great desire to develop better non-invasive diagnostic methods for imaging the brain in patients. The techniques available at the time such as pneumoencephalography were invasive, traumatic, and of limited efficacy. On 1st Oct 1971 he carried out the first CT scan on a live patient, revealing a detailed image of a brain tumour. Without the open mindedness and positive attitude of Jamie Ambrose it is highly possible that we would never have had the development of the clinical CT scanner. This presentation will recognise the key role of James Ambrose, in the development of the CT scanner and who by carrying out the first clinical CT scan on a patient, helped create the Clinical CT scanner that has changed Radiology and Medicine over the last 50 years.

Computerized transverse axial scanning (tomography): Part 2. Clinical application Ambrose BJR 1973; 46 (552) pp: 1023-1047

SP01.2 The centenary of the British X-ray and radiation protection committee

Arpan K Banerjee
British Society for the History of Radiology

On 5th Nov 1897 the oldest radiology society in the world the Rontgen Society was formed in London. In addition to founding a journal and organising scientific meetings one of its great achievements was the founding of the British Xray and Radiation Protection committee in 1921. Soon after the discovery of X Rays the harmful effects of the radiation became apparent to some workers. Several early radiology pioneers became radiation martyrs. Sir Archibald Reid a radiologist from St Thomas's hospital, London played an important part in improving radiation protection for staff by forming this committee and was assisted by a physician and great champion of radiology Sir Humphrey Rolleston a Cambridge Professor of Medicine and President of the Royal College of Physicians who became the first chair of this committee in 1921 serving as chairman for 20 years. In 1922 he became President of the Rontgen Society an unusual honour for a physician The committee met regularly at the Royal Society of Medicine, London and in July 1921 published its list of recommendations in the Journal of the Rontgen Society. Today some of its recommendations still remain valid. The committee was disbanded in 1952. Rolleston played a major part in the formation of the British Institute of Radiology becoming its first President in 1927/28. In this presentation the development and work of the committee will be presented.

Banerjee A K, 1997, A History of the British Institute of Radiology (booklet) SP1

SP01.3 Hopwood of Bart's: Ultrasound, neutrons and high-voltage therapy.

Francis Duck

Frank Lloyd Hopwood (1884-1954) was a pioneer of British medical physics. His diverse contributions during the 1920s and 1930s deserve better recognition [1]. Son of a mining engineer and graduate from the University of North Wales, he commenced work as demonstrator in physics at St. Bartholomew's Hospital Medical School in 1905. Returning there after WWI as lecturer in physics, he was appointed as Professor of Physics at Bart's in 1924. As radium custodian, he established procedures for its safe management that were widely implemented through the Radium Commission. He performed the first experiments in Britain into high-intensity ultrasound [2]. In 1934, with the emigré physicist Leo Szilard, he carried out pioneering experiments with newly discovered neutrons. They created ^{128}I from ^{127}I using neutrons emitted from beryllium on exposure to radium or high-energy x-rays. Then they devised a new, chemical method for separation, which was subsequently used for medical radio-nuclide preparation [3]. The first 1MV x-ray accelerator in Britain was installed at Bart's under the care of another member of Hopwood's team, George Innes. Szilard went to the USA where he played a major part in the Manhattan project to build the atomic bomb. During WW2, Hopwood went with Bart's Medical School to Queens' College Cambridge, where here was Vice-Dean. He retired in 1949. The leadership of the Bart's physics department, which Hopwood had created and managed so successfully, passed to Joseph Rotblat, the reluctant Manhattan project physicist who would later be a joint

recipient of the Nobel Peace Prize.

1. Duck, F. (2020) Hopwood of Bart's. IPEM Scope, Winter 2020, 22-25. 2. Hopwood, F.L. (1929) Experiments with high-frequency sound waves. J Sci Intr 6(2), 34-40. 3. Szilard, L. and Chalmers, T.A. (1934) Detection of neutrons liberated from beryllium by gamma rays: a new technique for inducing radioactivity. Nature 134,494-495.

SP01.4 The radiograph as memento mori, time for reappraisal?

Adrian Thomas

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Background: Memento mori is a Latin phrase meaning "remember you must die". At a Roman triumph with the return of a victorious general, the people would look at the victor at the head of the column. However behind the victor an aide would be whispering into his ear "Remember, thou art mortal." Prior to radiography the inside of the body was only seen in limited places - the operating theatre, the battlefield or the graveyard.
Purpose: The discovery of X-rays by Wilhelm Conrad Röntgen on 8 November 1895 transformed our understanding of both ourselves and of the physical world. To see our living skeleton produced a strong sense of unease and of the macabre. We are now so used to seeing medical images that we can forget the impact that they had in earlier times. We see things differently with Röntgen's light. The avuncular old man holding a scythe becomes the grim reaper. The pleasant seaside scene becomes under the rays a danse macabre or Totentanz. The danse macabre or Totentanz is an allegory on the universality of death. No matter one's position in life, the "Dance of Death" unites all of us.
Summary: The impact on the popular imagination of the new photography will be assessed and illustrated with contemporary images. Does radiography still remind us of our mortality, or are our responses more nuanced?

1. Forde, K. (2012) Death, A Picture Album. Wellcome Collection, London. 2. Thomas, A.M.K. (2017) History of Radiology, in Handbook of X-ray Imaging: Physics and Technology (Series in Medical Physics and Biomedical Engineering), Ed. Paolo Russo. CRC Press, Boca Raton.

Proffered papers: GI and hepatology

SP02.1 Analysis of Imaging Modalities in the Diagnosis of Early-Stage Hepatocellular Carcinoma in Adults with Cirrhosis

Nikhil Shah[1]; Sophie Willis[2]; Edwin Abdurakman[2]

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Background: The aim of this study was to compare and critically evaluate the role of functional MRI and CT in the diagnosis of early-stage Hepatocellular carcinoma (HCC) in adults with cirrhosis. HCC is the most common primary liver cancer and has become the leading cause of death in patients with cirrhosis. Diagnosis of HCC is often delayed as patients remain asymptomatic until an advanced stage resulting in a poor prognosis. Recent advances in functional CT and MRI techniques have been introduced in clinical practice to improve the diagnosis of HCC.
Method: A systematic literature review was conducted to identify articles suitable for this evaluation. Approximately 600 articles were found across multiple databases, which were reduced to 34 after the application of inclusion and exclusion criteria, and 11 articles were selected to review.
Results: MRI was demonstrated to be the superior modality of choice for adult patients with cirrhosis due to its high sensitivity and specificity, without radiation exposure. However, limitations pertaining to scan duration associated with the addition of specialised sequences remain a challenge. Alternatively, perfusion CT imaging offers a faster scan time and has shown promise in significantly improving detection rates of small HCCs compared to conventional CT.
Conclusion: This literature review demonstrates that the optimal clinical circumstances in which to select MRI or CT for the diagnosis of HCC should be based on patient circumstances, which include (but are not limited to) acute transient dyspnea, limited breath-hold capacity, chronic kidney disease, and patient safety preferences.

SP02.2 The appropriateness of MRCP requests in investigation of suspected common bile duct stones

Ahmad-Said Ali Attia

Background: Ultrasound and LFTs are the primary investigation for patients with moderate suspicion of common bile duct stones followed by the gold standard investigation Magnetic resonance cholangiopancreatography. In cases with high suspicion of common bile duct stones do not require an MRCP before endoscopic or theatre management.
Purpose of poster: Deliver a simple educational piece of information about guidelines from the British Society of Gastroenterologists (BSG) regarding appropriateness of MRCP requests and when performing the scan may not be necessary, hence reducing the number of inappropriate requests and reducing the pressures on the radiology department especially in DGHs where there is limited capacity for possible scans per day.