

**The 1,346th Meeting of the Brighton and Sussex Medico-Chirurgical Society took place on 5TH May 2016 in the Audrey Emerton Building:
“INTERVENTIONAL RADIOLOGY – THE MODERN SURGICAL REVOLUTION”**

The president Dr. Margaret Price introduced Dr Malcolm Johnston Interventional Radiologist BSUH.

A brief outline of radiological history was highlighted starting with Roentgen in 1895 with an X-ray of his wife's hand. The image intensifier in 1955 was the beginning of IR.

IR-what is it?

Image guided diagnostic or therapeutic procedure achieved through percutaneous puncture of a vessel or organ.

The basic tools other than imaging are needles, catheters and guide wires.

Dr Charles Dotter (1920-1985) is the father of IR and nominated for Noble Prize in 1978. He performed the first reperfusion of lower limb ischemia making it on the front page of Life magazine.

Dr Andreas Gruntzig in 1977 did the first coronary stent.

A variety of stents now exist with some balloon expandable and self-expanding with nickel titanium alloys (use by magician Uri Geller for the bendable spoon trick).

A list of around 80 IR procedures are available at BSUH, varying from vascular intervention, biliary anatomy, urological procedures and embolization of tumours.

Imaging tools have developed in the form of MRI and CT angiography. Examples of these were shown. This has greatly increased treatment options available for several medical conditions that otherwise would not have had any treatment. Although difficult to prove long term survival, these patients have multifactorial disease processes that would also contribute to their demise.

IR in trauma has an important role particularly as unrecognized haemorrhage is the second commonest cause of death. From its beginning in 1972, IR has progressed with the setting of a 24 hour interventional radiology service. This covers other aspects in emergency admissions such as stroke and aneurysms, with CT scanning central to most pathways. It has become an essential diagnostic tool with a body scan taking less than 20 seconds to perform with an easy and safe access. Previously fatal thoracic aneurysms are now amenable to IR stents.

IR is used in embolization of bleeding areas as post-partum, post gastro bleeds and trauma to vessels. Several agents are now available for this purpose. Examples of this procedure were shown: one following pelvic injury; solid organ injury as in renal trauma, with the aim of organ preservation which otherwise would have resulted in its removal.

Non vascular intervention examples were shown. grossly enlarged Fibroids are a classic example which would otherwise require open surgery with a hysterectomy. Embolization would result in the shrinkage of the tumour and relief of symptoms. There is also a role in placenta previa in limiting the post partum bleeding, this could be electively planned other than just in emergency situations.

'Would IR be putting surgeons out of a job?' The message is in team working to offer the best treatment options to frail patients with joint procedures being the norm. Examples of advanced bowel and biliary/pancreatic tumour obstructions palliative procedures were shown.

In 2010, the Royal College of Radiologists has recognized IR as a subspecialty in radiology with collaboration with the European colleagues for its own training curriculum. Advantages and limitations of IR was highlighted, with difficulty in quantifying long term benefits particularly in survival. Future developments would include tumour embolization and local delivery of chemotherapy loaded beads allowing selected high dose delivery. Tumour ablation therapy using radiofrequency is an option in operable cancers as in liver tumours.

There is a national shortage in IR consultants limiting its availability particularly in a 24/7 service provision. There needs to be more funding for training and multidisciplinary collaboration is key. The advances are technology driven and hence the need for randomized trials.