EDITORIAL

Interventional Radiology: Striving To Expand Beyond Diagnosis

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Interventional radiology (IR) was set in motion some 70 years ago with the establishment of Seldinger technique in the year 1953. Improvement and augmentation of the percutaneous techniques as well as minimally invasive procedures in 1960's led to evolution of present-day IR.[1,2,3]

IR was introduced to Nepal in 1980 with commencement of image-guided biopsy at Bir Hospital. Since then IR in Nepal has experienced steady but exceptional metamorphosis and is proving to be the crux in therapeutic management.[4,5] Interventional Radiologist can now take advantage of the spectrum of imaging technologies to furnish minimally invasive and tailored treatment pertinent to the disease. This transformation not only manifests as advancement in technique but also steps into the realm of patient care, thus demanding proper acknowledgement. IR is proving to be an area of specialization which is minimally invasive to the patient, safer, swift and more efficacious substitute to open surgery in some instances, thus reshaping the paradigms in patient care. However, IR at many institutions is still confined to the domains of diagnostic radiology, undermining its capability to stand as a therapeutic pillar and support other specialties in patient treatment.

Intervention radiologists utilize real-time image guidance; USG, fluoroscopy, Computed tomography and digital subtraction angiography to navigate sophisticated devices and micro-catheters through intricate structures to manage the disease at its origin with substantial accuracy. These procedures minimize collateral damages, thus opening treatment options for patients deemed high risk for surgeries.

The core advantages of IR is that, most of the procedures are minimally invasive requiring small skin incisions; often just needle punctures; replacing large surgical incisions inconsequence reducing pain and promoting faster healing. There is significantly lower risk in IR procedures, reducing morbidity and mortality which is particularly crucial for elderly and comorbid patients. Furthermore most of the procedures are conducted in outpatient basis or require only brief hospitalization hence cutting back on duration of hospital stay.

IR is continually expanding clinical frontier and its contributions are extensive. IR is a linchpin for cancer care providing tumor ablation, chemoembolization, radioembolization and targeted drug delivery for curative or life-prolonging treatments. From life saving thrombectomy in stroke, pulmonary embolism to angioplasty, stenting in arterial diseases and hemorrhage control via embolization, IR has contributed to management of vascular conditions. Stretching its boundaries, IR has pitched in to contribute to pain management, men's and women's health; delivering prostate artery, varicocele, fibroid embolization, fallopian tube recanalization etc.

Tabulating the procedure that interventionist can do is beyond the scope of this editorial. Therefore the educational structure for IR has undergone major restructuring with few major pathways specifically neuro-, body-, vascular- and cardiac - intervention, however the expertise and competence may overlap.

Despite the revolutionary thump, IR, especially outside the capital, are facing hiccups. "Visibility" remains an issue as most of the patients and even referring clinicians are not acquainted with the capabilities of IR. Additionally there is misconception that an interventionist is well versed in all the fields of IR and can

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execute any procedure in scantly furnished cardiac cathlab. As stated above it is pertinent to recognize that most interventionist are not well versed in all fields of IR, moreover the hardware; catheters and wires; utilized are in most instances different. Nonetheless given the time, space and interest to grow they can expand their expertise. Appendectomy can be carried out even with bare minimum surgical equipments, but a routine appendectomy today involves a full surgical team including advanced equipments. Similarly, although technically feasible for interventional radiologist to utilize a minimally resourced cardiac cathlab for cerebral, body or peripheral vascular procedures, optimal outcome demands a more suitable and adequately equipped environment.

IR, despite originating from the sphere of diagnostic radiology, has faced significant impediments in establishing clinical practices. This difficulty stems from a lack of recognition, support, including time and resources. This situation presents constant push and pull for interventional radiologists. They are expected to excel at interpreting complex imaging for diagnosis while simultaneously, pioneering and executing therapeutic procedures. This hybrid professional identity often creates challenges in terms of resource allocation and recognition.[6]

IR is restructuring patient care shifting to precise, customized treatments that offers minimal invasion and quick recovery. For many patients, IR is not just an alternative, often it is the best or only hope. Integrating IR into multidisciplinary teams is necessary; this guarantees that patients are offered every treatment available. As medical fraternity advances, so will the significance of IR. On that account, healthcare systems must acknowledge, promote and invest in intervention radiology.

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