

Advancing Interventional Radiology in Pakistan: Insights from the 9th Annual Conference of the Interventional Radiology Society of Pakistan

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National Radiology Journal of Pakistan is pleased to present this special issue featuring selected abstracts from the 9th Annual Meeting of the Interventional Radiology Society of Pakistan (IRSP). This special issue showcases the breadth of interventional radiology (IR) practice in Pakistan and highlights the collaborative spirit that drives innovation and excellence in this evolving field. The abstracts included in this issue highlight the critical role of IR in addressing a variety of clinical challenges - ranging from oncological interventions, women's health, vascular disease to advances in diagnostic techniques.

This editorial aims to outline the key studies presented, highlighting their relevance to the overall theme of advancing interventional radiology in Pakistan.

The first original article, "Comparison of Cytologic Adequacy Obtained with a 21G Needle *versus* 23G Needle in Fine Needle Aspirations of Thyroid Nodules" by Khalid Mustafa *et al.*, addresses a fundamental aspect of diagnostic accuracy in the evaluation of thyroid nodules [1]. The authors retrospectively reviewed 170 cases and compared the adequacy of cytology specimens collected using 21G and 23G needles. Results showed similar adequacy rates for 21G and 23G needles (89.3% and 91.9%), supporting the use of smaller gauge needles for fine needle aspiration cytology (FNAC) to optimize patient safety without compromising diagnostic yield. This study contributes valuable local data to inform clinical decision-making in thyroid pathology, particularly in resource-constrained settings.

The second original article, "Efficacy and Safety of Uterine Artery Embolization for Symptomatic Uterine Leiomyomata in Pakistan: A Single Centre Experience" by Muhammad Ali *et al.*, presents an important contribution to women's health [2]. The study, involving 67 patients undergoing uterine artery embolization (UAE), demonstrated a significant reduction in fibroid volume post-procedure, along with an impressive clinical success rate of 91%. Notably, the study highlights the greater responsiveness of submucosal leiomyomas to UAE. These findings affirm the role of UAE as a safe, effective, and uterus-conserving option for women

suffering from symptomatic fibroids, advocating for its wider adoption within the management algorithm for fibroid disease in Pakistan.

The review article "Current Updates in Diagnosis and Management of Hepatocellular Carcinoma with Special Reference to Interventional Radiology" by Muhammad Azeemuddin *et al.* provides a comprehensive overview of the evolving landscape of hepatocellular carcinoma (HCC) management. It emphasizes the diagnostic utility of imaging modalities—such as contrast-enhanced CT and MRI—and biomarkers like AFP and PIVKA-II [3]. Importantly, the article outlines key interventional therapies, including radiofrequency ablation (RFA), trans-arterial chemoembolization (TACE), and trans-arterial radioembolization (TARE), contextualized within the 2022 Barcelona Clinic Liver Cancer (BCLC) staging framework. This review highlights the critical role of interventional radiology in the multidisciplinary care of HCC and also calls for standardized screening protocols and further research to improve patient selection and treatment algorithms.

Another insightful review, "Interventional Radiology and Urology in Suprapubic Catheterization: Bridging Expertise and Practice" by Shiraz Imran Syed *et al.*, explores the commonalities between interventional radiologists and urologists in suprapubic catheter (SPC) placement [4]. In this, we can find a detailed analysis of procedures and their outcomes, along with the complication rates. This highlights the top safety of radiographically guided SPC placement (99.6%) and lower complication rates as compared with the blinded or cystoscopically guided urological approaches. The promotion of interdisciplinary collaboration is encouraged to enhance patient care. It also stresses the fact that the choice of specialty for SPC placement should take into account patient-specific factors and anatomical complexity.

The third review article, "Advances in Interventional Radiology for Superior Vena Cava Obstruction: Pathophysiology, Techniques, and Challenges" by Oadi N. Shrateh *et al.*, renders a detailed assessment of current knowledge about superior vena cava obstruction (SVCO) [5]. The authors detail its pathophysiology, diagnostic strategies, and interventional treatment

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options, giving importance to endovascular stenting being a risk-free and effective method for minimizing its symptoms. Other than this, the authors address essential perioperative considerations, such as the need for anticoagulation and hemodynamic monitoring. Although endovascular stenting has 90-95% technical success and symptom relief rates, the need for standardized guidelines to optimize long-term outcomes and minimize complications is stressed.

The final contribution, “Angioembolization of Uterine Arteriovenous Fistula: A Case Series” by Muhammad Yousaf *et al.* throws light on a rare but clinically significant condition - uterine arteriovenous fistula (AVF) [6]. A series of cases is presented, diagnosed by imaging studies such as ultrasound, MRI, and angiography, and successfully treated by uterine artery embolization. This series further exhibits that angiography is not just a diagnostic tool but also a therapeutic intervention. Various patients were observed to have successful pregnancies after embolization, highlighting the potential of UAE to preserve fertility in suitably chosen cases.

On the whole, the research presented in this special issue indicates the progressively active and expanding role of interventional radiology in Pakistani healthcare. From diagnostic innovations to therapeutic interventions encompassing a wide range of diseases, these abstracts reflect how local expertise adds to the global body of interventional radiology knowledge. The diversity of topics ranging from thyroid fine needle aspiration (FNAC) and uterine fibroid embolization to advanced oncology treatments and vascular interventions shows the versatility of interventional radiology in addressing complex clinical scenarios.

This special issue also enhances the value of collaboration across disciplines as well as within the interventional radiology community to guarantee the safe, effective, and evidence-based delivery of interventional radiology services. With the enhanced development in this field, raising a culture of research, standardizing protocols, and sharing knowledge through platforms such as the *National Radiology Journal of Pakistan* and the IRSP Annual Meetings will assist in enhancing patient care in Pakistan.

REFERENCES

1. Mustafa K, Tahir M, Siddiqui DK, Hussain S. Comparison of cytologic adequacy obtained with A 21G needle *versus* 23G needle in fine needle aspirations of thyroid nodules. *Nat Radiol J Pak* 2025; 1(2): 44-8.
DOI: <https://doi.org/10.37184/nrjp.3007-5181.1.16>
2. Ali M, Gul R, Hussain A, Swaleh FS, Siddiqui H. Efficacy and safety of uterine artery embolization for symptomatic uterine leiomyomata in Pakistan: A single centre experience. *Nat Radiol J Pak* 2025; 1(2): 49-56.
DOI: <https://doi.org/10.37184/nrjp.3007-5181.1.29>
3. Azeemuddin M, Rauf Z, Ahmed SS, Iqbal J, Fazal K. Current updates in diagnosis and management of hepatocellular carcinoma with special reference to interventional radiology. *Nat Radiol J Pak* 2025; 1(2): 57-63.
DOI: <https://doi.org/10.37184/nrjp.3007-5181.1.17>
4. Syed SI, Ahmed K, Khan S, Jagic K, Rasheed N. Interventional radiology and urology in suprapubic catheterization: Bridging expertise and practice. *Nat Radiol J Pak* 2025; 1(2): 64-70.
DOI: <https://doi.org/10.37184/nrjp.3007-5181.1.21>
5. Shrateh ON, Zyoud MMF, McMillan-Castanares AA, Mumtaz Z, Naidu VR, Salcedo LM, *et al.* Advances in interventional radiology for superior vena cava obstruction: Pathophysiology, techniques and challenges. *Nat Radiol J Pak* 2025; 1(2): 71-86.
DOI: <https://doi.org/10.37184/nrjp.3007-5181.1.18>
6. Khalil S, Haq T, Zafar B, Yousaf M, Zafar U, Ali J, *et al.* Angioembolization of uterine arteriovenous fistula: A case series. *Nat Radiol J Pak* 2025; 1(2): 87-93.
DOI: <https://doi.org/10.37184/nrjp.3007-5181.1.28>