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Foreword

The first scientific journal dedicated to the field of Pediatric Neuroradiology

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Pediatric neuroradiology emerged as a distinct entity in the late 1960s in response to the growing clinical needs from recently specialized pediatric neurosurgeons. The demand for concomitant expertise in pediatric neuroimaging prompted a few young radiologists to devote themselves full-time to this newly defined discipline with the subsequent creation of formal fellowship training programs.

The formation of a subspecialty within radiology that is both age-related and organ specific is one of the many features that make pediatric neuroradiology unique. Its practice, both diagnostic and interventional, is an art and a privilege that should be performed by dedicated experts who embrace its history and development, recognize areas in need of improvement, and strive for continued innovation in the field. Pediatric neurointervention, in particular, requires experienced and specialized pediatric neuroangiographers sensitive to the procedural aspects specific to the child, both technical in regards to radiation dose, contrast administration, and instrumentation (catheters, wires, and needles) as well as anatomical (i.e., strong appreciation and understanding of anatomy and embryology).

The evolution of pediatric neuroradiology has been well documented and is marked by distinct eras characterized by the principal imaging modality at the time. A significant proportion of the early literature is dominated by sonography, not surprisingly given its portability, need for little or no sedation, and lack of ionizing radiation. Computerized tomography was present at the same time and provided new insights into the cross sectional anatomy and development of the brain and spine. It was, however, magnetic resonance imaging that truly shaped modern pediatric neuroradiology. This modality has emerged as a dominant imaging technique because of its enormous diagnostic potential and has opened doors to disease processes and entities previously seen only by neurosurgeons, developmental pediatricians, and pathologists.

In conjunction with these remarkable advances in neuroimaging techniques, landmark works in embryology, molecular biology, and genetics, have considerably increased our anatomical and physiological understanding of pediatric central nervous system disorders. This substantial body of information serves as the catalyst for the formation of a new journal, the Journal of Pediatric Neuroradiology, created in a fashion similar to the birth of the subspecialty itself: in response to direct clinical demands for expertise in the field.

I welcome my colleagues to the first issue of the JPNR, the first scientific, peer-reviewed journal dedicated to the field of Pediatric Neuroradiology. Published quarterly, we aim to provide a forum for the discussion of pediatric neuroimaging between all participating disciplines and explore all aspects of diagnostic, functional, and therapeutic imaging. This issue brings a collection of review and original articles on the pediatric orbit and brain development, as well as several case reports from the diagnosis of sinus pericranii to endoscopic treatment options for hydromyelia. I expect the evolution of neuroimaging to continue with the refinement of highly sophisticated techniques that provide higher

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resolution images and greater anatomical detail, the implementation of radiation reduction strategies, and the development of new treatment methods in pediatric neurooncology. I thank all the authors for their submissions and urge our readers to continue to contribute to the field of pediatric neuroscience. Only through ongoing leadership can we ensure a prosperous future; one that we define and shape and that constantly adapts to meet the current and future clinical needs of our colleagues in pediatric neuroscience.