

Preface

Imaging CNS Infection: Now more relevant than ever



Tchoyoson Lim, MBBS, MMed

Editor

As the authors were preparing and writing the 2023 issue of central nervous system (CNS) infections, they did so in the midst of the COVID-19 pandemic. Sickness, uncertainty, and fear affected us radiologists and other health care professionals just as they did all humanity; however, this difficult time can also represent an opportunity to increase our awareness of the importance of infectious diseases. For too long, these diseases have been neglected and underserved, with an unequal burden of human suffering falling on low- and middle-income countries: what might appear to be an “exotic” case to radiologists in the developed world can actually be far too common, and we don’t know about it because of our ignorance and inadequate access to advanced imaging technology.

At the same time, the COVID-19 pandemic has exposed shortcoming in practice and the widespread lack of robust primary scientific data from rigorous hypothesis-driven research in CNS infections, compared with neoplasia or stroke. Better disease registries and clinical trials are needed, so that scientific rigor in sensitivity, specificity, and generalizability of imaging features can accurately inform our radiology practice.

There are multiple possible classifications of neuroimaging in CNS infections, and this issue takes a mixed approach, by taxonomy of pathogen (bacteria, virus, parasite), anatomical

location (spine, head, and neck), and special situations (pediatrics, tuberculosis, HIV, acute COVID-19, and subacute/chronic COVID-19). Bookended by epidemiology and radiology-pathology correlation, the longest overview is the article entitled, “Imaging Patterns of Meningitis, Ventriculitis, Cerebritis and Abscess,” which serves as an anchor that links all articles. Readers are encouraged to digest the entire issue as a whole, knowing that there will be substantive overlap and oversimplification.

Clinical problem-solving based on pattern recognition has long been a core pillar of diagnostic imaging. Our knowledge of “classic” CT and MRI features and their typical anatomical distribution has enabled us to process new data in new diseases, in light of past differential diagnosis algorithms. There is also tremendous untapped potential in machine learning and the physiologic information that can be extracted from advanced imaging techniques. It is hoped that future iterations of our work will tease out the mechanisms of neuronal damage and immune response in CNS infections.

I would like to thank Suresh Mukherji, the consulting editor, for inviting me to be the guest editor, and Karen Solomon and John Vassallo from Elsevier, for their patience and professionalism. I am very grateful to this diverse group of authors (who had to endure my incessant nagging)

from Asia, Europe, and North and South America; they represent teamwork between different disciplines, hospitals, nations, and practices. This issue is dedicated to my wife, parents, and children (who have to endure all my other faults), to our health care professional colleagues who labored alongside us in the “trenches” during the pandemic, and finally, to our patients, who teach us to learn from our past. May we, with better education and research, face future pandemics with stronger

preparedness, multidisciplinary collaboration, and compassion for our patients.

Tchoyoson Lim, MBBS, MMed
Department of Neuroradiology
National Neuroscience Institute, Singapore
11 Jalan Tan Tock Seng
Singapore 308433

E-mail address:
tchoyoson@gmail.com