

Table of Contents:

Section I Neuroimaging Methods

1. Computed Tomography Imaging and Angiography: Principles
Shervin Kamalian, Michael H. Lev and Rajiv Gupta
2. Magnetic Resonance Imaging: Principles
Andrew Kiruluta and R. Gilberto González
3. Volumetric and Fiber-tracing MRI Methods for Gray and White Matter
Mykol Larvie and Bruce Fischl
4. Functional Magnetic Resonance Imaging
Bradley R. Buchbinder
5. Clinical magnetic resonance spectroscopy of the central nervous system
Eva-Maria Ratai and R. Gilberto González
6. Brain perfusion: Computed tomography and magnetic resonance techniques
William A. Copen and Michael H. Lev
7. Magnetic resonance angiography: physical principles and applications
Andrew Kiruluta and R. Gilberto González
8. Diagnostic angiography of the cerebrospinal vasculature
James D. Rabinov, Thabele M. Leslie-Mazwi and Joshua A. Hirsch
9. Neurosonology and Noninvasive Imaging of the Carotid Arteries
Javier M. Romero
10. Myelography: modern technique and indications
Stuart R. Pomerantz
11. Positron Emission Tomography
Katherine Lameka, Michael Farwell and Masanori Ichise
12. Positron Emission Tomography: Ligand Imaging
Abass Alavi and Andrew B. Newberg
13. Single photon emission tomography
Koen Van Laere

Section II Brain Diseases

14. Intra-axial Brain Tumors
Otto Rapalino, Tracy T. Batchelor and R. Gilberto González
15. Extra-axial Brain Tumors
Otto Rapalino and James Smirniotopoulos
16. Imaging acute ischemic stroke
R. Gilberto González and Lee H. Schwamm
17. Other Cerebrovascular Occlusive Disease
Aneesh Singhal and Pamela W. Schaefer
18. Hemorrhagic Cerebrovascular Disease
Javier M. Romero and Jonathan Rosand
19. Infection
Gaurav Saigal, Natalya Nagornaya and M. Judith D. Post
20. Multiple Sclerosis
Massimo Filippi Sr.
21. Other non-infectious Inflammatory Disorders
Alex Rovira
22. Imaging neuro-trauma
Rajiv Gupta and Sandra Patricia Rincon
23. Cerebellar disorders: clinical/radiological findings and modern imaging tools
Mario Manto
24. Imaging of genetic and degenerative disorders primarily causing Parkinsonism
David J. Brooks
25. Genetic and degenerative disorders primarily causing other movement disorders
Nicola Pavese
26. Genetic and Degenerative Disorders Primarily Causing Dementia
Joseph C. Masdeu
27. Neurocutaneous syndromes
Doris D. Lin
28. Cerebrospinal fluid flow in adults
William Bradley and Victor Haughton
29. Metabolic and endocrine disorders
Florian S. Eichler
30. Skull-base Lesions
Hugh D. Curtin and Hillary R. Kelly
31. Imaging of orbital disorders
Hugh D. Curtin and Mary Beth Cunnane