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Atlas of Neurology

A Case-based Approach





Includes Interactive DVD-ROM

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Satish V Khadilkar

Foreword
Bhim Singhal

JAYPEE

Contents

Section 1
Clinical 1
- Stills 3
- Videos 39

Section 2
Radiology 87

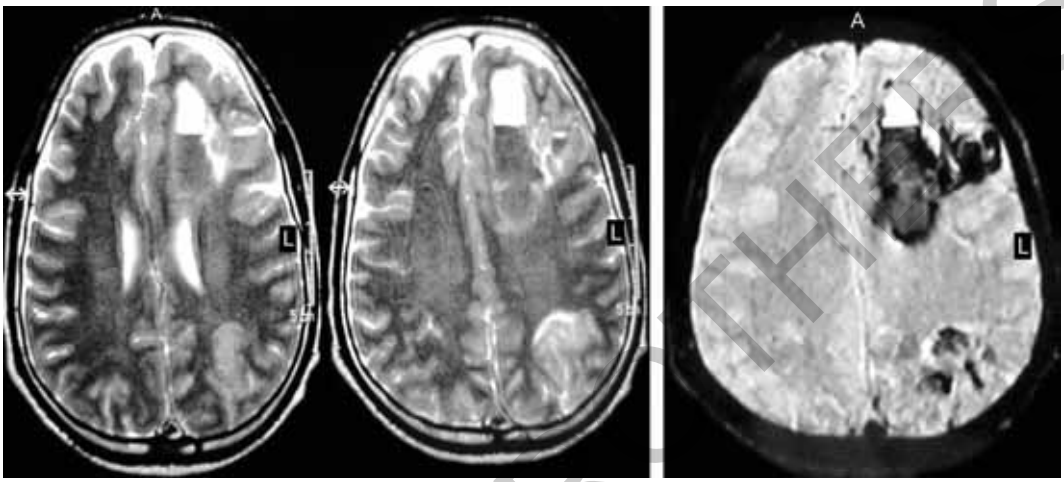
Section 3
Electrophysiology 219

Index *275*

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CASE 1

A young male suffering from acute myeloblastic leukemia developed acute headache convulsions, and right hemiparesis 6 hours after receiving L-asparginase therapy. What does the MRI scan show?



Hemorrhagic infarct in left frontoparietal and occipital cortices with thrombosis of the superior sagittal sinus.

Cerebral venous thrombosis is reported to occur in about 1 to 3% cases following this therapy and over 90% occur during induction therapy.

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CASE 2

What is the finding in plain radiograph of the lumbosacral spine?



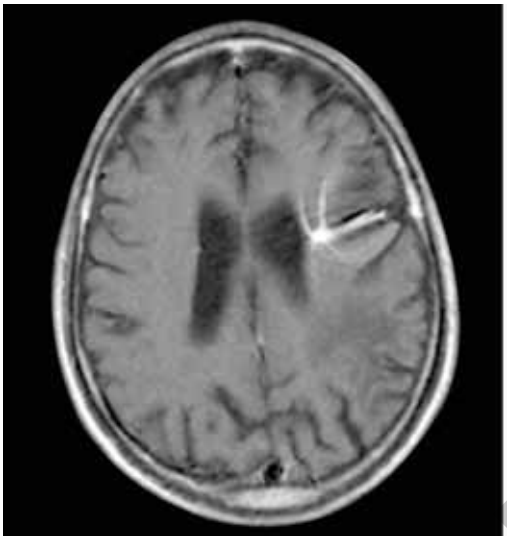
Lumbar ribs.

Lumbar ribs are rare anatomical variants and they represent transitional vertebra at the thoracolumbar junction. The costal element is the mammillary bodies. These can be unilateral or bilateral and are mostly asymptomatic and incidental finding. They may impart mechanical pressure on the adjacent kidneys and cause persistent loin pain, resembling renal stone or pyelonephritis. Lumbar ribs may be mistaken as fracture of the transverse process of the body of the vertebra and unlike cervical ribs, no neurovascular syndrome has been described in association with them.

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CASE 3

A patient with history of chronic headache underwent MRI scan of the brain. What is the diagnosis?





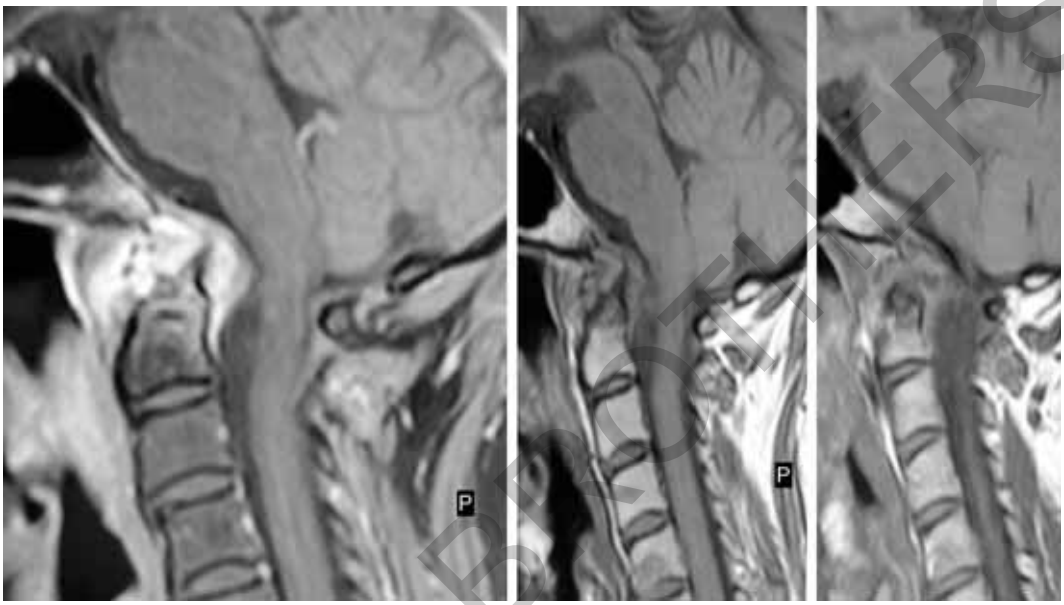
Venous angioma with characteristic Medusa Head appearance.

Medusa head appearance is due to multiple tributaries arranged in a radial fashion draining into a larger vein. This sign is best seen in contrast T1-weighted image. Venous angiomas are best found in the juxtacortical and paraventricular regions in the frontal and parietal lobes.

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CASE 4

A 45-year-old male having long standing rheumatoid arthritis developed painful restriction of neck movements, progressive spastic gait and root pains. What is abnormality?



It is Atlantoaxial dislocation in a case of Rheumatoid arthritis.

Distance between the anterior surface of the dens and the posterior surface of the tubercle of CI is usually 3 mm or less in adults and 5 mm or less in children (predentate space). Atlantoaxial instability is defined by an increase in the predentate space of greater than 3 mm in adults and 5 mm in children. These dislocations are usually treated with some form of surgical fusion of CI and C2.

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CASE 5

The subject complained of pain in posterior aspect of the thighs after prolonged walking. What does the MRI scan show?



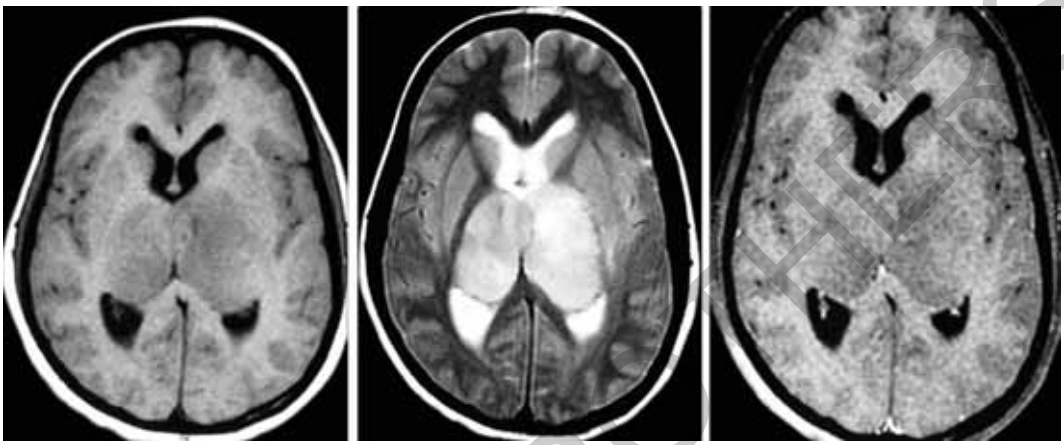
Arteriovenous malformation in calf muscles.

There are heterogeneous high signal intensity changes from mid-calf region to Tendo Achilis in the T2-weighted image. This is suggestive of AVM. These are developmental anomalies representing persistence of an embryonic pattern of blood vessels. The constituent vessels proliferate and enlarge with the passage of time.

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CASE 6

A 25-year-old male presented with insidious onset progressive personality changes, memory disturbances, social disinhibition, and tremor. What do the MRI scans show?



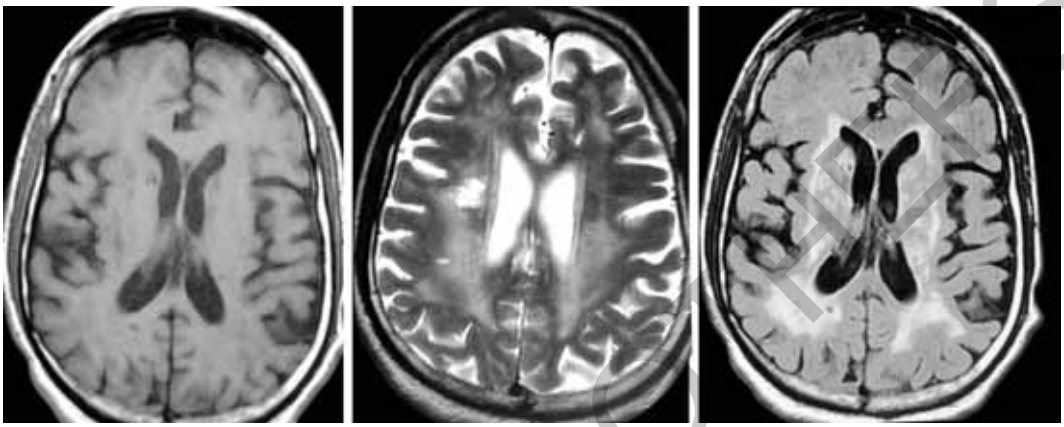
Bithalamic glioma.

The lesion appears as hypo- or isointense in T1-weighted image and hyperintense in T2-weighted image showing no enhancement with contrast. It respects the gray and white matter boundaries and is confined to the thalami. The other possibilities are deep cerebral venous thrombosis, *artery of Parcheron infarct*, germinoma, teratoma, lymphoma, toxoplasmosis, Fahr syndrome and Wilson's disease.

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CASE 7

A 50-year-old male subject presented with progressive dementia, mood disturbance, migraine, recurrent subcortical cerebral infarctions and alopecia. What is the diagnosis?



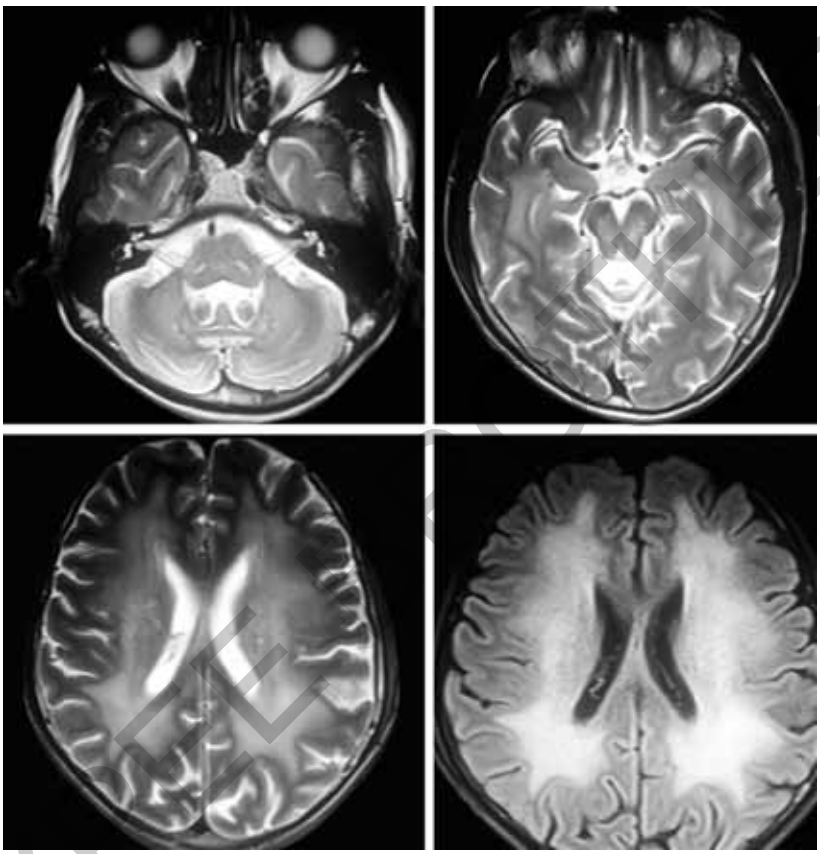
Cerebral autosomal dominant arteriopathy with subcortical infarcts and leukoencephalopathy (CADASIL).

MRI scans show hypointensity on T1-weighted images and hyperintensities in T2-weighted images, usually multiple confluent white matter lesions of various sizes concentrated around the basal ganglia, external capsule and peri-ventricular white matter. This is the commonest variety of inherited stroke disorder due to mutation of *Notch 3 gene* on chromosome 19. The differential diagnosis includes Binswanger's disease, recurrent embolization from cardiac etiology, metabolic encephalopathy and familial hemiplegic migraine.

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CASE 8

A patient with the history of psoriasis was treated with methotrexate for some years and presented later with ataxia. What does the MRI scan show?



Chronic methotrexate encephalopathy.

MRI shows T2 and FLAIR hyperintense signals in white matter, gangliocapsular region, midbrain, pons and cerebellum, which did not show diffusion restriction, blooming in GRE or contrast enhancement. This is characteristic of the condition.

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Salient Features

- A practical resource book on the subject
- Provides a bouquet of clinical materials pertaining to radiology, electrophysiology, stills and videos of interesting cases which are encountered commonly in daily practice
- Includes mostly easy-to-diagnose cases, while a few ones are comparatively rare and often esoteric in nature
- Lucid style of presentation of the text in the question and answer format
- Provides a glimpse of the protean problems seen in day-to-day practice
- Functions as a ready reckoner for the multitude of clinical problems in neurology
- Useful for the students, teachers and consultants alike.

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ISBN 978-93-86322-00-5

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