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Quadrantanopia

Quadrantanopia (or quadrantanopsia), a defect in one quarter of the visual field, suggests an optic radiation lesion. Occipital lobe pathology is the most common cause of both inferior and superior quadrantanopias, although temporal lobe pathology damaging Meyer's loop typically must be considered with a superior homonymous quadrantanopia ("pie-in-the-sky" defect). Parietal lobe lesions may produce inferior quadrantic defects, usually accompanied by other localising signs. Damage to extrastriate visual cortex (areas V2 and V3) has also been suggested to cause quadrantanopia; concurrent central achromatopsia favours this localisation.

References

Horton JC, Hoyt WF. Quadrantic visual field defects. A hallmark of lesions in extrastriate (V2/V3) cortex. *Brain*. 1991; **114**: 1703–8.

Jacobson DM. The localizing value of quadrantanopia. *Arch Neurol*. 1997; **54**: 401–4.

Cross References

Achromatopsia; Hemianopia; "Pie-in-the-sky" defect; Visual field defects

Quadriparesis, Quadriplegia

Quadriparesis or quadriplegia (tetraparesis, tetraplegia) refers to weakness, partial or total, respectively, of all four limbs which may be of upper motor neurone or, less commonly, lower motor neurone type (*e.g.* in Guillain-Barré syndrome).

- Lower motor neurone, and some acute upper motor neurone, pathologies produce a flaccid quadriparesis/quadriplegia with areflexia; urinary retention may be present.
- Upper motor neurone lesions, particularly if chronic, produce a spastic quadriparesis with hypertonia, sustained clonus, hyperreflexia, loss of abdominal and cremasteric reflexes, and bilateral Babinski's sign. As with hemiplegia, upper motor neurone quadriplegia may result from lesions of the corticospinal pathways anywhere from motor cortex to cervical cord via the brainstem, but is most commonly seen with brainstem and upper cervical cord lesions. In such circumstances, respiration may be affected. There may also be enhanced flexion defence reflexes ("flexor spasms") which may develop over time into a fixed flexion deformity with secondary contractures ("paraplegia in flexion"). Incomplete or high spinal cord lesions may evolve to "paraplegia in extension".

Cross References

Hemiparesis; Paraplegia

Quadrupedalism

Quadrupedalism, facultative quadrupedal locomotion (walking on all fours), has been observed as part of a recessive cerebellar hypoplastic syndrome associated with cerebellar ataxia and learning disability in consanguineous families in Turkey, the Uner Tan syndrome, which is genetically heterogeneous. The hypothesis that this gait pattern is an example of "devolution", an atavistic expression of quadrupedal primate ancestry, has been challenged by biomechanical analysis suggesting that the gait shows lateral sequence and not the diagonal sequence-quadrupedal gait typical of other primates.

A.J. Larner, *A Dictionary of Neurological Signs*,
DOI 10.1007/978-3-319-29821-4_17

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