Conus medullaris lesion causing bilateral lower limb myokymia

The word myokymia, derived from the Greek *myo*—muscle and *kymos*—wave, describes involuntary, continuous, slow, undulating contractions of muscle fibres.¹ Electromyography of myokymia consists of short lived and often recurrent bursts of single motor unit potentials, firing at rates of 2–60 Hz.² Myokymia can be focal or generalised and is usually associated with diffuse, central or peripheral nerve disorders. We describe a case of bilateral lower limb myokymia due to a focal lesion at the conus medullaris.

CASE REPORT

We report the case of a 69-year-old man who initially presented 26 years ago with bilateral involuntary twitching in the quadriceps muscles in the absence of muscle atrophy or hypertrophy. Neurological and systemic examination was otherwise normal and he did not complain of sweating or muscle stiffness. There was no family history to note.

Electromyography revealed continuous, spontaneous, involuntary, repetitive motor unit activity consistent with myokymia, confined to the tibialis anterior and quadriceps muscles. Electromyography was otherwise normal (fig 1). With the exception of absent somatosensory evoked potentials in the distribution of the L3 nerves bilaterally, nerve conduction studies were normal. Subsequent MRI scanning (T1 and T2 weighted sequences; Siemens 1.5 T) revealed a lesion in the posterior aspect of the conus medullaris involving the origin of the filum terminale consistent with a lipoma or hamartoma (figs 2 and 3). Other neurological investigations were normal. The imaging findings have remained unchanged despite persistent myokymia for the last 26 years, in the absence of neurological deterioration or muscle hypertrophy.

DISCUSSION

Limb myokymia heralding a focal lesion, in this case at the conus medullaris, is very rare. Limb myokymia has been reported previously in association with diffuse disease of the central and peripheral nervous system (neuropathies, including hereditary neuropathy with liability to pressure palsy, chronic inflammatory demyelinating polyradiculopathy, Guillain-Barré syndrome and vasculitis, multiple sclerosis, spinocerebellar ataxia type 3, rattlesnake venom poisoning, drugs and radiation induced plexopathy). Focal lesions have also been documented as causing limb myokymia although few cases have been reported.^{3–5}

This case emphasises the importance of imaging to locate a focal lesion in patients with limb myokymia not explained by neuropathy. In particular, in cases of bilateral lower limb myokymia, a conus medullaris lesion should be sought. In addition, the absence of muscle hypertrophy in this case highlights that this is not a universal feature of prolonged myokymia.

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Figure 1 Electromyography of right tibialis anterior shows myokymic discharges with brief repetitive firing of single motor unit action potentials with an intraburst firing frequency of 3–4 Hz. Myokymic discharges are interspersed with irregular fasciculations.

Figure 2 MRI scan (Siemens 1.5 T) T1 weighted sagittal image of the lumbosacral spine illustrating a lesion in the posterior aspect of the conus medullaris consistent with a lipoma or hamartoma.

Figure 3 MRI scan (Siemens 1.5 T) T2 weighted axial image of the lumbar spine illustrating a lesion displacing the conus medullaris.

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REFERENCES

- 1 Isaacs H. A Syndrome of continuous muscle-fibre activity. *J Neurol Neurosurg Psychiatry* 1961;**24**:319–25.
- 2 Dumitru D, Amato A, Zwarts M. *Electrodiagnostic medicine*, 2nd edn. Philadelphia, PA: Hanley and Belfus, 2001.
- 3 Medina JL, Chokroverty S, Reyes M. Localized myokymia caused by peripheral nerve injury. *Arch Neurol* 1976;**33**:587–8.
- 4 Franzini A, Scaioli V, Leocata F, et al. Pain syndrome and focal myokymia due to anterior interosus neurovascular relationships: report of a case and neurophysiological considerations. *J Neurosurg* 1995;**82**:578–80.
- 5 Natarajan MM. Conus medullaris teratoma presenting as myokymia. *Neurol India* 1999;**47**:251.