

Lipoma of the filum terminale

Fatty [filum terminale](#), also known as [lipoma](#) of the filum terminale or filar lipoma, is a relatively common finding on imaging of the [lumbar spine](#), and in most cases is an [incidental](#) finding of no clinical concern. However, in some patients it may be associated with [signs](#) and [symptoms](#) of [tethered cord syndrome](#). In such cases it is usually associated with a thickened filum and a low-lying [conus](#).

Epidemiology

Fat is seen within the filum terminale in ~5% of relevant examinations.

Clinical presentation

In most cases, a fatty filum is an incidental and asymptomatic finding. However, in some individuals, it is associated with [spinal dysraphism](#) and [tethered cord syndrome](#).

Pathology

Lipoma of the filum terminale is formed as a result of a developmental error in mesodermal cell migration.⁸

Radiographic features

A thin filum (<2 mm in diameter at the L5/S1 level) is rarely symptomatic. When the filum is thickened (with or without fat) it is much more likely to be associated with a low lying cord (tip of the conus at or below the mid point of L2) and cord tethering. As such careful assessment of the position of the conus is essential.

CT

If large enough, then fat density (-90 to -30 HU) can be seen below the level of the conus. If small, and depending on the quality of the CT scanner, the size of the patient, and the amount of quantum mottle, it may be difficult to identify.

MRI

The abnormality typically is linear and extends over some distance. Signal follows that of fat on all sequences and can demonstrate chemical shift artifact on T2* / gradient weighted sequences.

T1: hyperintense

T2: hyperintense

fat saturated sequences: signal loss demonstrated

T1 C+ (Gd): no enhancement

Treatment and prognosis

When patients have tethered cord syndrome and a low lying conus surgical intervention would be considered appropriate by most, with the filum sectioned either just at the tip of the conus or lower down in the lumbar theca.

In asymptomatic patients, management is equally simple, in that nothing need be done.

Difficulty arises in patients who have some symptoms suggesting tethered cord syndrome, but whose conus terminates at a normal level. Controversy as to the benefits of division of a fatty filum in such patients exists

Differential diagnosis

There is little or no differential when the presence of fat is confirmed, however other filum terminale lesions can be considered only to be eliminated.

paraganglioma of the filum terminale rare iso- to hyperintense on T2 but hypointense on T1 intense enhancement post contrast myxopapillary ependymoma iso- to hyperintense on T2, but hypointense on T1 enhancement post contrast

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