Radiographic predictors of early and late clinical deterioration in patients with lumbosacral lipomas

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Introduction

Lumbosacral lipomas are congenital lesions of development and the most common spinal dysraphism treated at the BC Children's Hospital (BCCH). Although patients may present asymptomatic, most will develop neurologic symptoms. Previous management has included prophylactic detethering; however, recent studies have found deterioration rates following surgery similar to non-operated patients. Given that these patients are often difficult to examine, the use of radiographic imaging may be helpful in identifying which individuals are likely to deteriorate earlier and hence benefit from pre emptive surgery rather than observation.

Methods

A retrospective review of all lumbosacral lipomas seen at BC Children's Hospital in a modern era (ie. Last 20 years) was carried out. Patients undergoing prophylactic surgery were excluded. Patients with filum lipomas were also excluded.

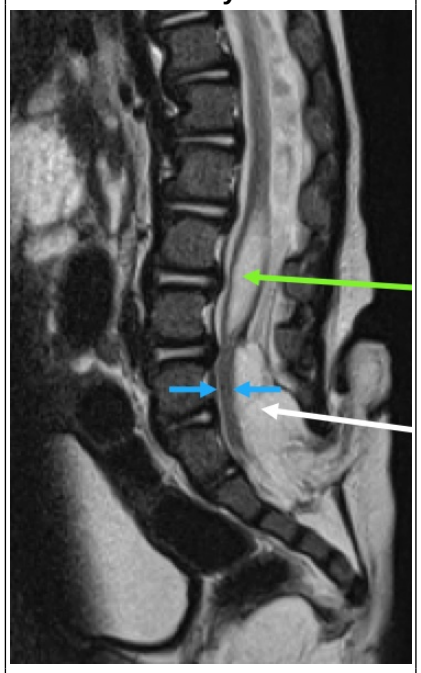
Results

23 patients with lumbosacral lipomas were identified. 11 patients worsened within 16 months of life (early deterioration), while 9 deteriorated after 30 months (late deterioration). 3 patients have been followed for over 60 months and remain asymptomatic.

Patients who deteriorated early were much more likely to have large, intradural lipomas that filled out the canal and compressed neurologic structures ($p=0.000002$). Furthermore, syrinxes were more common ($p = 0.01$) and these were much larger than in other patients ($p = 0.03$).

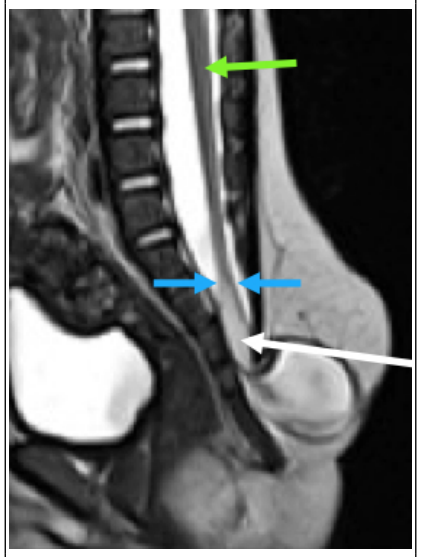
Early deteriorating patients also more frequently presented with motor deficits (82%) in comparison to late deteriorating patients (33%). Patients with delayed deterioration all developed urologic/bowel symptoms (100%).

Features for Early Deterioration



Large wide syrinx (Blue arrow) and large lipoma (white arrow) compressing spinal cord (blue arrow)

Absence of Features for Early Deterioration



Small or absent syrinx (green arrow), small lipoma (white arrow) without significant compression of spinal cord (blue arrows)

Conclusions

Given the potential for incomplete recovery after prolonged neurologic deterioration, families of patients at risk of early deterioration may be counselled to consider prophylactic surgery, while those with risk factors for late deterioration may be followed clinically. This data would also suggest that a compressive effect of the intradural lipoma may contribute to early deterioration and strategies centred on decompressing the lipoma may be considered in addition to traditional detethering surgeries.

References

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