

Tethered Cord Syndrome: True or False

Dr Timothy Lee, Singapore

Presented at the World Federation of Neurological Surgery Spine Division in 2018, Bali

Tethered Cord Syndrome (TCS) is a poorly understood and poorly known problem. Professor Shokei Yamada stated that 75% of 'failed back surgery' he came across in his practice in USA was due to TCS (Reference 1). When TCS is associated with a normal position of the conus medullaris (occult filum terminale syndrome), the diagnosis can be difficult and somewhat controversial.

The symptoms may consist of low back pain which sometimes may involve thoracic or even neck pain. The pain in contrast to sciatic pain may radiate to the groins. Typical aggravating factors which stretch the filum include crossing the legs as in a Buddha pose, bending forward, lying supine during sleep (which decreases the lumbar lordosis). Carrying an object of about 10kg or more may also aggravate the pain. There may be unexplained paraesthesia or numbness.

There may be urinary symptoms or erectile dysfunction. Occasionally control of bowel may be affected. One must enquire about the presence of nocturia and frequency of micturition during daytime.

The classical sign on examination with TCS is weakness of toes extensors as stated by Yamada. During my examination of my patients, I found that hip flexors weakness (straight leg raising) is another cardinal sign of TCS. Its presence in the absence of other factors strongly suggests TCS. Reflexes in the legs if hyperactive or asymmetric is another possible suggestion of TCS.

The first investigation of back or legs symptoms involve MRI of the spine. If there is no pathology to explain the patient's symptoms or signs, before concluding psychosomatic reasons, one should consider TCS. Sometimes MRI may show a thickened filum terminale as a white dot in T1 axial cut. I find there is an association of the presence of the white dot with TCS. Fine cut CT scan of the lumbosacral spine may reveal the presence of spina bifida. Sometimes this may be just a small discontinuity of the lamina and may take an experienced radiologist to spot this. There seems to be an association between the size of the defect and the presence of symptoms.

The third useful test is urodynamic study to assess the integrity of the sensory and motor nerves supply to the bladder.

The diagnosis of TCS cannot be made based on any single test but is based on the clinical pictures, presence of spina bifida and sometimes the presence of neurogenic bladder.

The treatment of mild or moderated TCS is conservative with avoidance of aggravating factors. Often such patients may not progress. But for severe case, division of the filum terminale offers good relief. Sometimes TCS coexists with other pathology such as spondylolithesis and treatment of the 2 pathologies can be carried out at the same time.

In my experience of about 100 such case the chance of good relief of the symptoms is about 90%. There were 2 cases of complication of CSF leakage needing re-opening of the wound and dural repair.

Reference 1: S Yamada: Tethered Cord Syndrome in Children and Adults. AANS Thieme 2nd edition 2010