

Common Peroneal Nerve Mononeuropathy due to an Amniotic Constriction Band

Susan Al-Nabhani,¹ Hamdah Al-Abri,² Instisar Al-Abri,¹ Prabhakaran Venugopal,¹ *Roshan Koul³

الإعتلال العصبي في العصب الشظوي المشترك بسبب انقباض ربطة أمنيوسية

سوزان النبهانية، حمدة العبرية، انتصار العبرية، برايهكاران فينوغوبال، روشان كول

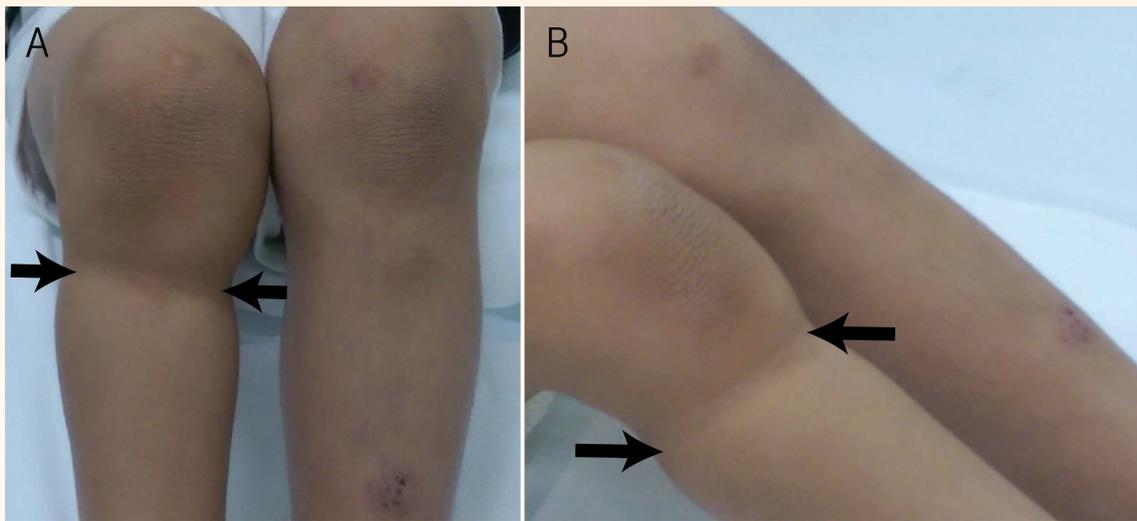


Figure 1A & B: Photographs of the (A) front and (B) side views of an amniotic constriction band (arrows) on the right leg of a six-year-old male child with associated common peroneal nerve mononeuropathy.

ASIX-YEAR-OLD BOY WAS REFERRED TO the neurophysiology clinic at the Sultan Qaboos University Hospital (SQUH), Muscat, Oman in January 2015 for an evaluation of right foot drop. His parents had noticed an abnormality in his right leg since birth. He had previously been diagnosed with foot drop and had undergone corrective surgery in August 2012. However, examination of the right lower limb revealed a ring-like band at the proximal end of the leg just below the knee [Figure 1].

Upon inspection, it was noted that the right leg was thin and there was wasting of the anterior compartment group of muscles. The child's plantar flexion was normal with a power of grade 5/5; however, there was evidence of foot drop and ankle jerk was present. The foot was also observed to be small. A nerve conduction study revealed right common peroneal nerve neuropathy, although the tibial nerve

conductions were normal. Magnetic resonance imaging was not performed as additional information regarding the status of the common peroneal nerve was not required.

Comment

Amniotic constriction band syndrome (ACBS) is caused by the entanglement of the fetus with fibrous strings of the amniotic membrane.¹ This entanglement can cause a number of birth defects which vary depending on the affected body part; the distal portion of the extremities is most commonly involved.² The effect of the constriction may be mild or severe, resulting in loss of body parts such as the fingers or limbs. Furthermore, ACBS can cause miscarriages if the band becomes wrapped around the umbilical cord. ACBS is not genetic and is unlikely to recur in

future pregnancies. Early surgical intervention is the treatment of choice for ACBS.

Compression neuropathy is thought to be one form of ACBS.^{2,3} In a case series of 83 patients with ACBS, Tada *et al.* reported club foot deformities due to compression of the common peroneal nerve in 10 patients.² Constriction bands should therefore be considered when examining children with club foot.

The current patient was the first case of ACBS resulting in peripheral nerve entrapment seen at SQUH. Post-poliomyelitis foot drop is due to the involvement of anterior horn cells of the spinal cord, resulting in a wider pattern of weakness and does not follow the distribution of a single nerve.⁴ Physiotherapy and tendon transplants are the main treatment options for this condition.

References

1. Walter JH Jr, Goss LR, Lazzara AT. Amniotic band syndrome. *J Foot Ankle Surg* 1998; 37:325–33. doi: 10.1016/S1067-2516(98)80070-7.
2. Tada K, Yonenobu K, Swanson AB. Congenital constriction band syndrome. *J Pediatr Orthop* 1984; 4:726–30. doi: 10.1097/01241398-198411000-00013.
3. Jones NF, Smith AD, Hedrick MH. Congenital constriction band syndrome causing ulnar nerve palsy: Early diagnosis and surgical release with long-term follow-up. *J Hand Surg Am* 2001; 26:467–73. doi: 10.1053/jhsu.2001.24130.
4. Trojan DA, Cashman NR. Post-poliomyelitis syndrome. *Muscle Nerve* 2005; 31:6–19. doi: 10.1002/mus.20259.