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Spinal dysraphism with tethered cord syndrome in Indian scenario: What do we want to achieve

Ajay Bajaj

Wockhardt Hospitals Ltd., India

Spina bifida is a common congenital anomaly encompassing a wide spectrum of neural tube defects. It is broadly classified as spina bifida aperta and occulta. With the prenatal screening, the incidence of aperta is gradually declining, whereas the detection of occulta has increased with the advent of magnetic resonance imaging. The estimated incidence of spinal dysraphism is about 1–3/1000 live births. The prevalence of spinal dysraphism has been in decline the world over in the last few decades due to the better nutrition for women, folic acid supplementation, improved antenatal care and high-resolution ultrasound for prenatal screening and biochemical markers. Open dysraphism presents with a swelling over the back which is noticed at birth. Symptoms are primarily referable to CSF leak or the exposed spinal cord. Tethered cord syndrome has been defined as progressive neurological deficits from the restraint of the spinal cord movement and traction due to either anatomical or physiological reasons. It may lead to progressive neurological, urological and orthopedic dysfunctions. Tethered cord can be seen in both varieties (Aperta and Occulta) of spinal dysraphism. Approximately 30% of patients present with re-tethering due to previous myelomeningocele surgery.

Patients usually presents with neuro-urological symptoms with progressive foot deformity. In our experience, the common clinical presentations include the presence of cutaneous stigmata associated with occult spinal dysraphism (70%), neurogenic bladder with the development of primary or secondary incontinence or urinary tract infection (60%), leg or foot weakness, numbness and/or spasticity (60%), leg or foot length discrepancy (10%) and foot deformity (for example, pes cavus, claw toes). One of our patients presents as auto amputations of toes of both feet. The neurological dysfunction in tethered cord syndrome is unusual, frequently having elements of both upper and lower motor dysfunction. Motor weakness is more prevalent than sensory deficits. Such motor dysfunction is usually asymmetrical.

The fundamental goals of surgical intervention in spinal dysraphism with tethered cord syndrome are as follows: 1) to improve or stabilize deficits in the symptomatic patient and 2) to prevent future deficits in the asymptomatic patient. These two goals are predicated on the fact that sectioning of the terminal filum can be conducted safely with minimal risk and a very low rate of morbidity. The incidence of neurological injury due to sectioning is less than 1%.

Detethering of the cord is an important part of surgical treatment as the major cause of neurological deterioration in these patients is due to abnormal fixation and traction on the conus and distal cord.

In conclusion, technically, detethering of the cord is not challenging but identification of the patients who will be benefitted with the procedure is really challenging. Therefore, there is a need to continue critically looking at this disease process to obtain better data through randomized prospective studies.

Biography

Ajay Bajaj has done his MCh neurosurgery degree from Postgraduate institute of medical education and research, Chandigarh, India. He had 5 publications in various national and international journals. He also participated in CRASH trial conducted by MRC London. He is active international member of CNS and executive council member of Neurological surgeon society of India. He had worked as assistant professor of neurosurgery in various medical institutes of India. Presently he is working as consultant Neurosurgeon at Wockhardt hospitals Ltd. Mumbai, India.

ajay.bajaj@wockhardthospitals.com

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