Dynamic Chiropractic

MUSCULOSKELETAL PAIN

Charcot Marie with Sacroiliac Dysfunction

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Case History

T.R. is a 25-year-old man with a two-year history of increasing lower unilateral buttock pain. Walking and standing cause his pain to increase, while sitting decreases the pain. He works as a violin repairman and does a lot of sitting.

The patient's medical history is remarkable for Charcot Marie disease, with surgery performed during childhood for bilateral plantar ray tendon releases. He was advised to undergo tendon transfer to prevent further foot deformity but refused. His wife referred him one day after she had brought their two-year-old daughter in for a spinal examination. During gait assessment of this healthy two-year-old, his wife exclaimed that she didn't know "chiropractic did that type of examination," and disclosed that she was concerned about her daughter's development because of the husband's history. T.R. consequently obtained an appointment for the following week.

On physical examination T.R. appeared to be a well-developed, well-nourished man, alert and in no apparent distress when sitting in a chair. He can forward flex fully, and extension at end-range demonstrates some increase in unilateral pain. Motor examination of the lower extremities showed weakness in tibialis anterior and peroneus bilateral. The sensory examination was decreased to vibratory sense and light touch. The distal vascular exam was normal. A compensatory, supinated gait was observed.

Chiropractic assessment yielded joint fixation of the L1-L2 vertebrae and hypermobility with pain of the left sacroiliac joint. Asymmetry in the position of the posterior superior iliac spines was noted. Yeoman's (thigh hyperextension) testing was positive for sacroiliac dysfunction. Hypertrophy of the left lumbar paraspinals was present with no apparent pain exhibited. Straight leg raises produced pain between 70-90 degrees. Calf muscle asymmetry was noted, with apparent atrophy. Examination of the feet revealed fixed, rigid first rays, high longitudinal arches, and talar fixations (less inversion and eversion).

Radiographic weightbearing imaging studies were performed to evaluate his spine. A lateral view of the lumbar spine revealed minimal disc space narrowing at the vertebral level of L4/L5.

Discussion:

Charcot Marie(Hereditary Motor Sensory Neuropathy)

This case illustrates the typical clinical findings of Charcot Marie accompanied by sacroiliac dysfunction. Although the patient does have mild mechanical low back pain, his major difficulties are related to the demylinating disorder.

Clinical Features

Patients may present with muscle cramps, difficulty in gait or deformities of the feet. Look for hip joint proximal muscle weakness and dysplasia. There is often a loss of proprioception and vibratory sensation in the lower extremities. Type I and type III disorders are due to demyelination of the peripheral nerves. EMG in demyelinating neuropathies will reveal slowing of impulse conduction. Ataxia and distal sensory loss (especially light touch, joint position and vibration sense) will develop. Weakness occurs in the hands and feet, with a mild cavus deformity or clawing of the toes developing. The abnormal foot position is initially flexible, but with increasing peroneal involvement, an equinovarus deformity gradually develops. The patient will experience pain under the lateral metatarsal heads during weightbearing and will have difficulty running. Scoliosis is seen in approximately 10 percent of patients, and toe deformities are common.

The biomechanics of the pelvis during walking demonstrate that at heel strike, the ipsilateral innominate moves posteriorly into flexion as the same side of the sacrum moves anterior and inferior. This creates a cushion effect on the forces transmitted into the femur and spine. The decreased range of subtalar pronation available interferes with this patient's ability to cushion contact.

Sacroiliac dysfunction may include joint locking with com-pensatory hypermobility in the contralateral sacroiliac joint. The locked joint often results in increased motion demands on the opposite side, consequently resulting in pain and inflammation of the hypermobile segment. The most acute pain is felt contralateral to the fixated joint. Chiropractic adjustments to the affected fixed joint as well as assessment for and correction of any sacral tilt were performed.

The muscle weakness primarily affects peroneus brevis and tibialis anterior muscles, which results in plantar flexion of the first ray. The heel must roll into varus (due to the flexed first ray and mobile lateral rays) to get the lateral metatarsals on the ground. This deformity of the hindfoot results in malposition of the talus and calcaneus. When these deformities become rigid, neither soft tissue nor adjustments will fully correct the foot. Therefore, a clinical foot evaluation for muscle strength and flexibility, especially of the hindfoot, is crucial in chiropractic management, maintenance and monitoring of mobility. The deformity is progressive and rigidity increases over time. This is most significant in early deformity of an adolescent foot, so that development of the foot is not affected. Medical co-treatment involves numerous surgical inter-ventions, including soft-tissue release, tendon transfers and osteotomies.

Detection of scoliosis and radio-graphic assessment, accompanied by a thorough neurological examination, should also be provided as part of the clinical evaluation. Semiflexible foot orthoses were fabricated for T.R. from neutral-position casts. A standard functional foot orthotic consists of a soft, flexible, semi-rigid or rigid orthotic shell that is forefoot and rearfoot posted to control foot function, and is made from a positive model of a patient's foot taken in the neutral position. For many patients, a standard orthotic adequately controls abnormal forces affecting the foot and lower extremity. For this equinovarus deformity patient, even specialized orthotics are not tolerated, because of further balance disruption on preexisting proprioceptive disorder. Cushioned inserts were added that the patient tolerated.

T.R. was treated 15 times over an eight-week period. During this time, his sacroiliac symptoms gradually lessened. At the time of discharge, he was able to walk on uneven surfaces, such as a sandy beach, and not lose his balance. His family was educated on the demyelinating and sacroiliac

conditions and provided with patient information, so that future biomechanical lesions of the spine would not go left untreated. Follow-up care of the patient was performed when necessary, outlined preventative procedures were released and a new chiropractic family was nurtured.

References

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