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Spinal Problems in Children, Part I

By Peter Fysh, DC

Although back and neck pain are not considered common childhood disorders, they can sometimes herald a serious problem and should be thoroughly investigated. Spinal problems in children can be due to many causes and can be categorized by age group. In this issue of "DC," we will discuss the spinal problems most likely to be encountered in infants, generally defined as the 0 to 2 year age group.

The diagnosis and treatment of spinal problems in children is a specialized task and should be undertaken with great care to ensure that a serious problem is not masquerading as a relatively minor complaint. Symptoms of back and neck pain in children can sometimes be difficult to interpret due to our inability to communicate effectively with the very young, and because such symptoms do not always specifically relate to spinal problems. For example, an infant with an infection in the spine may present simply with fever, irritability, and poor feeding, symptoms which are common to many childhood conditions.

Causes of Back and Neck Pain in Infants

Spinal problems in infants may present simply with irritability and poor feeding. Subluxation of spinal vertebrae is a frequently encountered condition in newborn infants.

Birth Process

The trauma of the normal birth process with its rotation, lateral flexion, and traction of the cervical spine is sufficient to induce misalignment and fixation of the upper cervical spinal segments. Such misalignments can be associated with poor feeding, regurgitation, fussiness and/or sleeping difficulties in the newborn. It is not uncommon to find an atlas (C1) subluxation in a newborn infant who is difficult to feed, spits-up consistently during and after each feeding, and who sleeps for only short periods of time. The problem with an infant who will only nurse from one breast and refuses or is difficult to feed on the opposite side can sometimes be corrected by restoring normal function to the upper cervical spinal segments. Just as an adult

with cervical spinal problems may have restriction and some pain with positional movements of the neck, likewise, an infant with such problems may have the same difficulty.

Trauma -- Falls

It is not uncommon for infants to suffer falls in the process of negotiating their way through the first two years of life. Infant falls may be due to rolling off a bed or changing table, or the trauma induced by the frequently well-intentioned actions of an overexuberant and enthusiastic sibling, or simply due to the task of learning to walk. All of these examples can be common situations encountered in the infant's life which predispose the child to spinal problems and warrant a regular spinal examination.

Motor vehicle accidents frequently involve the entire family. It is not uncommon however for infants involved in such incidents to go unchecked simply because they have no overt symptoms, while the parents and older siblings receive an appropriate evaluation because of their greater facility to communicate. Because of the increased flexibility of an infant's spinal column, spinal stretching from trauma is more likely to result in spinal cord damage, with associated neurological changes, than it is to result in damage to the vertebral segments and intervertebral motor units.

Child abuse should always be suspected in any infant with injuries which do not correlate with the patient's history. Injuries caused by abuse can sometimes be the result of the frustration of parents to control an infant's constant crying or other persistent disorder. Such infant habits frequently have a physical cause which sometimes can be correlated with early spinal trauma.

Congenital Anomalies

Congenital spinal problems frequently have an associated physical deformity or present with neurological deficits. Progressive neurological loss evident when examining an infant may suggest a congenital lesion.

Spinal cord malformation in an infant commonly results from tethering of the spinal cord, a condition where thickening of the filum terminale prevents the normal ascent of the spinal cord from the sacral level at birth to the upper lumbar region. This condition may have associated cutaneous hemangiomas or tufts of hair in the lumbosacral region. Tractioning of the spinal cord during growth produces neurological loss and diagnosis is confirmed by magnetic resonance imaging (MRI).

Spina bifida, due to incomplete closure of the spinal laminae, may involve the spinal cord and its outer coverings or meninges, in which case it can present with symptoms of neurologic dysfunction, such as weakness or paralysis of the lower extremities, loss of sphincter control and sensory changes. More commonly however the occult form of this congenital disorder, spinal bifida occulta, is asymptomatic and identified by a tuft of hair or cutaneous dimple over the spine in the lumbosacral region.

Klippel-Feil syndrome involves congenital fusion of several pairs of vertebrae in the cervical spine resulting in restricted flexibility of the neck. The patient with this condition has a short neck, low hairline and restricted range of motion. This condition is not amenable to surgery due to its location and proximity to the spinal cord and treatment is confined to stretching exercises and cervical adjustments to maintain flexibility.

Malignancy due to spinal cord tumor (astrocytoma) may present with postural deformities such as torticollis, scoliosis, or kyphosis. Intraspinial tumors most commonly occur in the first four years of life with insidious back and/or neck pain and lower extremity weakness being the most common presenting symptoms. Unexplained intermittent or persistent back or neck pain in an infant, exacerbated by being picked up, or coughing, sneezing, jumping or straight leg raising should always be evaluated for an intraspinal tumor.

Infections of the spine can be associated with meningitis or diskitis. A patient with back pain accompanied by fever must be considered to have spinal infection until proven otherwise.

Meningitis, inflammation of the spinal meninges due to infection usually with the staph aureus bacteria, may present in the very young infant with subtle signs of a tense or bulging anterior fontanel, fever, irritability, disinterest in feeding, drowsiness, and vomiting. In older infants and children, some of the characteristic signs of nuchal rigidity, extension of the head and neck (opisthotonus) and positive Brudzinski's or Kernig's signs may be present.

Diskitis, infection of the intervertebral disk, occurs mainly in the lumbar spines of young children. Infants and young children with this condition may refuse to walk or stand, have a mild fever and present with localized back pain. Here also, early diagnosis should be made by bone scan as roentgenographic changes may not be present for several weeks.

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Editor's Note: Part II of Dr. Fysh's "Spinal Problems in Children" will appear in the March 11 issue of "DC."

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