

Kinematic Imbalances Due To Suboccipital Strain In Newborns

Journal of Manual Medicine
June (No. 6) 1992, pp151-156

H. Biedermann

This author is from the Surgical Department of the University of Witten-Herdecke, Germany.

FROM ABSTRACT:

The pathogenic potential of the craniovertebral junction in newborn and young children is discussed.

The symptom complex of "kinematic imbalances due to suboccipital strain" (KISS syndrome) has a wide range of clinical signs and can in many cases be dealt with effectively with manual therapy.

The main symptoms are torticollis, unilateral face asymmetry, C-scoliosis and motor asymmetries, often accompanied by unilateral retarded maturation of the hip joints and slowed motor development.

Risk factors appear to be intrauterine misalignment, application of extraction aids, prolonged labor and multiple fetuses.

THIS AUTHOR ALSO NOTES:

This paper is based upon the evaluation of more than 600 children, all less than 2 years of age.

"The pathogenic importance of asymmetric posture and motion in small children is often played down if recognized at all."

This bent posture of babies does not correct when the patients cantilever the babies during sleep.

Prior studies show that postural correction therapies developed for children with mild cerebral damage "greatly improved the changes of rehabilitation in these little patients."

"In many cases the duration of the treatment can be shortened by combining and/or replacing it with manual therapy of the suboccipital segments of the upper cervical spine." **[Extremely Important]**

Most of the babies in this study had asymmetric posture, and the following:

- 1) Tilt posture of the head / torticollis.

- 2) The head is held in extension to the point where the baby was unable to lie on the back.
- 3) "Uniform sleeping posture, the child cries if the mother tries to change its position."
- 4) Asymmetries of movement patterns.
- 5) Asymmetric posture of trunk or extremities.
- 6) "Sleeping disorders, the baby wakes up crying every hour."
- 7) "Extreme sensitivity of the neck." [Roy Sweat scanning test]
- 8) Asymmetry or swelling of the face / head.
- 9) Asymmetries of the gluteal muscles.
- 10) "Asymmetric development and range of movement of the hips." "Retarded development of the hip joints."
- 11) Fever of unknown origin.
- 12) Loss of appetite.
- 13) Feet deformities.
- 14) Pathological reflexes.
- 15) Mobility of the cervical or other spinal regions spine reduced by more than 30%.
- 16) The parent reporting that the baby does not eat or drink well.

The suboccipital joints are most likely to be involved when the baby has a combination of asymmetry of motion, facial asymmetry, and sleeping disorders.

The history of the affected babies reveals a high incidence of birth stress/trauma, including multiple fetuses, prolonged labor, and use of extraction aids.

On these babies, "an A-P radiograph of the upper cervical spine is imperative."

"The radiological evaluation helps to find malformations and aids in determining the direction of the manipulation." **[WOW!]**

"There is no correlation between the extent of the asymmetry and the symptoms or success of the treatment."

The treatment of these babies involves "basically an impulse manipulation."

"In most cases the direction of the manipulation is determined by radiological findings (85%)."

"The manipulation itself consists of a short thrust of the proximal phalanx of the medial edge of the second finger." **[Important]**

"Selection of the direction of the treatment without x-ray seems the most plausible cause of the less encouraging results of some colleagues." **[WOW!]**

"The [manipulation] technique itself needs subtlety and long years of experience in the manual treatment of the upper cervical spine." **[WOW!]**

"In the hands of the experienced the risk is minimal; we have not yet encountered any serious complications. Most children cry for a moment, but stop as soon as they are in their mother's arms. In two cases (of \pm 600) these children vomited after treatment; this had no negative effect on the outcome in either case."

A typical radiographic analysis is included in the article. The authors determine the direction of the manipulation with an "exact evaluation of the lateral displacement of atlas and/or axis against the occiput."**[Amazing!]**

"In most children, the upper cervical spine remains a weak spot, which is why we re-examine them routinely before they start school at the age of 6."

"Suboccipital strain is not confined to local complaints or even mechanical symptoms and is not taken into account when these children show signs of restlessness and concentration difficulties, etc." **[WOW!]**

The author presents 3 case histories successfully treated by specific upper cervical manipulation, including:

- 1) 4 month old with difficulty controlling head position, using her left arm, uniform sleeping position, and asymmetry of face and skull.
- 2) 5 month old with C-scoliosis, reduced use of left arm, poor muscle tone on left side of body, poor head control, and asymmetry of face and skull.
- 3) 6 month old, unable to turn head to left (since birth), pronounced facial asymmetry, cried when picked up, severely retarded movement development, recurrent fever of unknown origin. These problems were resolved within one hour of the manipulation.

This author cites references that "stress the importance of intracerebral damage as the underlying cause of abnormal posture and asymmetric development."

"The immense pathogenic potential of the proprioceptive afferents of the suboccipital region has until now been widely underestimated."

[Not True: This has been a primary explanation of the upper-cervical subluxation in chiropractic for a century.]

Others have also drawn attention to the pathogenic significance of the cervical-occipital junction. This author uses the term KISS syndrome (kinematic imbalances due to suboccipital strain) to describe these problems. This syndrome creates a large range of clinical problems.

Suboccipital strain does not always lead to clinical symptoms.

[Silent Subluxations]

6% of British schoolchildren have significant disorders of their visuomotor system. "How many of these could profit from manual therapy of the suboccipital joints?"

[WOW!]

This author notes that babies with a contracted sternocleidomastoid muscle should not be subjected to operative measures to lengthen the muscle because they will nearly always respond perfectly to "Manipulation of the upper cervical spine." **[WOW!]**

"Head stabilization is a complex process involving the interaction of reflexes elicited by vestibular, visual and proprioceptive signals. Most of the afferent proprioceptive signals originate from the craniocervical junction. **[WOW!]** Any obstacle impeding these afferents will have much more extensive consequences for a nervous system in formation, which depends on appropriate stimuli to organize itself.

[Incredible] Most of the cerebral development [occurs after birth]; this development begins at the head." **[AMAZING!]**

Upper cervical "delicate structures undergo considerable stress during delivery." "The birth canal is one of the most dangerous obstacles we ever have to traverse."

During delivery, "A majority of newborns suffer from microtrauma of brain stem tissues in the periventricular areas." Forgotten trauma of early childhood has a significant impact on "perceptuomotor development." **[WOW!]**

"Traumatization of the suboccipital structures inhibits functioning of the proprioceptive feedback loops." Consequently, the motor development cannot develop normally. "The price for this is a reduced capacity to absorb additional stress later on. These children may show only minor symptoms in the first months of their life" like fixation of the head in one position. "Later on, at the age of 5 or 6, they suffer from headaches, postural problems or diffuse symptoms like sleep disorders, being unable to concentrate, etc."

This author notes that treating pediatric C-scoliosis and movement asymmetries, that manipulation of the suboccipital region is superior to physical therapy because "suboccipital strain is the leading factor."

Manipulation of the occipital-cervical region leads to disappearance of problems that the parents had not reported because they did not see a connection with the spine.

These parents would regularly note that their child would eat or sleep much better since the treatment. **[Great!]**

Doctors should check all children for restricted movement of the head and for increased pain sensitivity of the upper cervical spine.

"The 'typical' KISS baby is first seen at the age of 6 to 12 months. Such babies are suffering from birth problems in the widest sense."

KEY POINTS FROM DAN MURPHY:

- 1) Babies tend to injure their upper cervical spine during the birth process. This is because the upper cervical spine is the "weak spot."
- 2) The potential for injury to the upper cervical spine is greater when there is intrauterine misalignment, multiple fetuses, prolonged labor, and the use of extraction aids.
- 3) The upper cervical spine contains most of the proprioceptive afferent signals to the central nervous system. The brain requires appropriate afferent proprioceptive input from the upper cervical spine to organize itself during early development. Birth injury to the upper cervical spine robs the brain of the required proprioceptive afferent input it requires to organize itself, including visuomotor function.
- 4) Typical early signs displayed by babies with upper cervical injury include asymmetric posture, tilted head, torticollis, using only one posture for sleeping, asymmetries of movement patterns, asymmetries or swelling of the face / head, asymmetries of the gluteal muscles, asymmetric development and range of movement of the hips, fever of unknown origin, and deformities of the feet.
- 5) Typical early symptoms displayed by babies with upper cervical injury include fussiness when picked up, the baby wakes up crying every hour, extreme sensitivity of the neck to pressure, loss of appetite, the baby does not eat or drink well.
- 6) Later symptoms displayed by these children at age 5 or 6 include restlessness, concentration difficulties, a reduced capacity to absorb stress, headaches, postural problems, and diffuse symptoms like sleep disorders.
- 7) X-rays are important, "imperative." They identify malformations and identify the direction of the manipulation, improving clinical outcomes.
- 8) All children should be checked for restricted movement of the head and for increased pain sensitivity of the upper cervical spine. If positive findings are identified, the child should have a specific line-of-drive manipulation of the upper cervical spine.