Osteopathic Pediatrics

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Osteopathic Tenants from the Pediatric Perspective

- The body functions as a unit
  - A child's body is not static and changes with age
  - A child's body must be considered longitudinally as it develops
- The body has the capacity for self-healing and self-regulating
  - Needs to be considered even from the fetal perspective as it relates to pediatric development
  - Regulation comes in various stages of maturation and requires continuous observation and evaluation

Osteopathic Tenants from the Pediatric Perspective

- Structure and function are interrelated
  - Pediatric structure is constantly changing
  - A unique feature of pediatrics is seen as early developmental abnormalities can compromise later function
- Rational treatment is based on the understanding of the above tenants
  - Children are dynamic and require continuous re-evaluation during growth and development
  - “Normal” is not static in children

Osteopathic Pediatric Exam Considerations

- Various stages of maturation are incomplete at birth
  - Incomplete myelinization
  - Growth centers in membranous and long bones
  - Endocrine system maturation
- Due to incompletely developed neural and skeletal relationships, structural diagnosis and OMM are different in pediatrics

Osteopathic Pediatric Exam Considerations

- The pediatric patient's body as a "unit" includes parents and siblings
- Always consider the birth and perinatal history
- Pediatric cooperation is not assumed
- Due to the lack of chronic fixations, it is easy to overtreat muscular lesions in babies and small children
- HVLA is infrequently required in the pre-school aged child
- Pediatric OMM can often be approached as a game with children

Osteopathic Pediatric Considerations

- Pediatric immune system is also immature
- Pediatric patients experience a high number of upper respiratory tract infections
- Higher levels of secretory IgA (sIgA) have been shown to decrease the incidence of upper respiratory tract infections

Evidence-based Medicine

- JAOA March 2011 study demonstrated a positive effect of OMT on sIgA levels in persons in stressful circumstances
- Application of OMT for 20 minutes including occipitoatlantal release, rib raising and thoracic pump
- The sIgA level increased significantly by 139% after OMT

Lymphatic pump

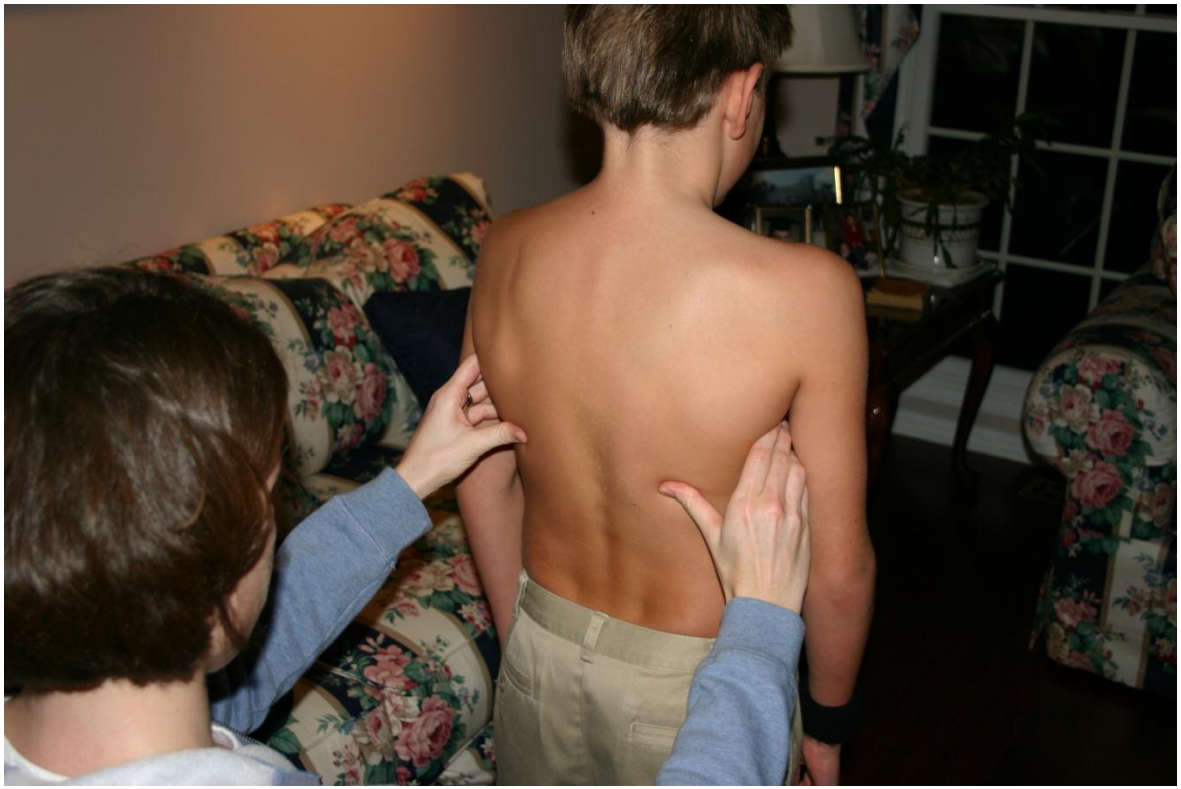
Osteopathic Pediatric exam

- Include assessment of cranium
  - Visual asymmetry of face and skull
  - Fontanels of the infant skull
  - Overriding cranial bones in newborns
  - Infants with relatively large and malleable skulls
  - Motion of cranial bones, sacrum, dural membranes and cerebrospinal fluid

Osteopathic Pediatric Exam Considerations

- Evaluate Body Symmetry
  - Structural findings in growing children are not static
  - Growth spurts affect structural exams
  - Specific segmental motion cannot be appreciated by experienced examiners until 6 months of age

Evaluate Symmetry of Landmarks



Assess symmetry of Landmarks

Pediatric Gait Assessment

- General assessment
  - Bones grow and shape based on a body in motion
  - Changes in structure are seen as the infant changes from horizontal posture, to sitting upright, and then weight bearing
  - Spinal articular surfaces develop as the pediatric patient becomes mobile
  - Gait expectations change with development

Osteopathic Pediatric Considerations

- Consider each stage independently AND as they relate to one another
  - Fetus
  - Newborn
  - Toddler
  - Child
  - Adolescent

Most Common Diagnosis for which Pediatric OMT is used

- Otitis media
- Developmental delay
- Well child: preventative
- Plagiocephaly
- Scoliosis
- Asthma
- Upper respiratory tract infection
- ADHD
- Cephalgia
- Allergies or rhinitis
- Closed head injury
- Reflux

Cranial Osteopathic Manipulative Medicine (OMM)

- Involves gentle application of force to somatic dysfunctions of the head and its impact on the body
- Has been studied as a treatment for tension headaches, infants with colic, children with cerebral palsy (CP) and sleep disorders
- Shown to be safe in children, and efficacious in some instances

Evidence-based Medicine: Cranial OMM

- JAOA 2011 study on therapeutic effects of cranial OMM, including CV-4 technique
- Statistically significant improvement in sleeping pattern of children with CP
- Cranial OMM associated with reduction of crying in infants with colic and less parental attention was required to console infants
- Statistically significant improvement in tension headache pain intensity

CV-4 Technique

- Known as compression of the fourth ventricle
- Thought to enhance motion of tissue and fluid exchange and lower the tone of he sympathetic autonomic system
- Cranial OMM technique performed by approximating the lateral angles of the occiput of the skull

Evidence-based Medicine: Adverse Outcomes

- JAOA 2006 study to determine adverse outcomes associated with pediatric OMT
- Patient age range was 1 day to 19 years old
- Most commonly used OMT in patients was cranial treatment, myofascial release, soft tissue techniques or a combination
- Muscle energy and HVLA were used to treat some adolescent patients

Evidence-based Medicine: Adverse Outcomes

- Conclusions:
  - No OMT-related complications were documented
  - 9% of patients reported OMT-associated aggravation including: soreness, increase symptoms for a few days
  - Treatment associated aggravations resolved over time
  - Patients did not require any additional visits for the aggravation and did not deter them from continuing to receive OMT
  - OMT appears safe in pediatrics when used by physicians with expertise in OMT

Question 1

1. Use of which of the following OMM techniques has been shown to result in increased sIgA levels?

   A. CV-4

   B. HVLA

   C. Muscle energy

   D. Occipitoatlantal release

   E. Strain counterstrain

Question 2

2. Which of the following is an expected finding during the osteopathic exam of a 12 month old infant's head?

   A. Asymmetry of facial features
   B. Closed anterior fontanelle
   C. Motion of individual cranial bones
   D. Open posterior fontanelle
   E. Overriding sutures

Question 3

3. At what age can segmental somatic dysfunction be diagnosed in a child?

   A. 6 days old

   B. 6 weeks old

   C. 6 months old

   D. 6 years old

   E. 16 years old

Question 4

4. Cranial OMM has been found to be efficacious in the treatment of which of the following pediatric conditions?

   A. Colic
   B. Concussion
   C. Depression
   D. Global developmental delay
   E. Migraine

Question 5

5. A 4 year old child presents with musculoskeletal rib pain after an injury. Which of the following OMM techniques is most likely beneficial without the possibility of an adverse outcome?

   A. CV-4 cranial dysfunction

   B. HVLA cervical dysfunction

   C. Lymphatic pump

   D. Muscle energy lumbar dysfunction

   E. Myofascial release thoracic dysfunction

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