Clinical Integration of Osteopathic Manipulative Medicine

Pediatrics – Otitis Media

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Intro: When working with a pediatric patient population, a common presentation is otitis media. By the age of 3, 50-84% of children have had at least one episode of acute otitis media. Recurrent otitis media is defined as at last 3 or more episodes of otitis media within a one year time frame and affects 10-19% of children. The peak incidence of otitis media is between ages 6-15 months old. According to both the American Academy of Pediatrics and the American Academy of Otolaryngology and Head and Neck Surgery, otitis media is defined as having an acute onset of signs/symptoms, middle ear effusion, and middle ear inflammation signs/symptoms.

Patient presentations:

• Ear Pain/Pulling at Ear
• Fluid Draining from Ear
• Fever, Headache
• Irritability/Excessive Crying
• Balance, Sleep, and/or Hearing Issues

Differential diagnosis:

• Upper Respiratory Tract Infection
• Otitis Externa
• Allergic Rhinitis
• Infantile Colic
• Mastoiditis
• Pharyngitis
• Sinusitis
• Respiratory Syncytial Virus Infection

Clinical pearls and diagnostic tools:

• Clinical Diagnosis- presence of a bulging tympanic membrane or signs/symptoms of a middle ear effusion or inflammation
• Tobacco smoke, wood-burning stoves, day-care, or formula feeding increase risk
• Affects boys more than girls; more common in younger population.
• Predisposing Factors: History of abnormal ciliary motion, allergies, congenital disorders/defects, tumors, nasopharyngeal infections/lesions
• Long term morbidity includes: conductive hearing loss, issues with speech and language, problems with behavioral and cognitive development

OMM Integration: Younger children are more prone to otitis media than older children. This is due to the anatomical development of the Eustachian tube. At an early age, the tube is more horizontal, which allows fluid to collect and bacteria to enter the area. The tube is also less stiff and possesses a smaller opening, which allows it to become easily blocked. Additionally, their immune system is not as developed yet. Because of this, it takes more time for the immune system to mount a significant reaction against bacterial infections.

Based on this, treatment is focused on adjusting the orientation of the Eustachian tube as well as encouraging the actions of the lymphatic system. Osteopathic Manipulative Treatment (OMT) has been found to be successful when used in conjunction with antibiotic therapy. One study conducted by Mills, et al. randomly assigned 57 subjects with recurrent otitis media into two groups- one received routine care while the other received routine care plus OMT for nine visits. It was found that subjects who received OMT had fewer episodes of acute otitis media (P=0.4) and required fewer surgical procedures (P=0.3). Additionally those who received OMT had more surgery free months (P=.01). They concluded, “It (OMT) may prevent or decrease surgical intervention or antibiotic overuse.”

In 2006, Degenhardt and Kuchera gave osteopathic treatment to all participants for a three week period. They then followed these subjects forward for a one-year period. 62.5% of subjects had no recurrence of symptoms. They found that “osteopathic manipulative treatment may change the progression of recurrent otitis media.”

A case study by Pratt Harington reported a reduction in temperature and decreased erythematous changes and edema in a 14 month old girl who presented with otitis media after receiving Gallbreath technique. Her temperature reduced from 102.8°F to 99.2°F. This occurred without medication in a half hour period following her treatment. A review of complementary and alternative treatments for otitis media by Levi et al. concluded, “osteopathy and chiropractics may lead to improvement in symptoms.”

Osteopathic Structural Examination: There are no established set of key somatic dysfunctions to assess in a patient presenting with otitis media. However, the following regions should be assessed based on the involvement of the lymphatic system and the head/neck region:

• Cranial Vault
• Sinuses
• Occipital-Atlantis; Cervical Region- focus on the C2-C3 nerve roots of the cervical plexus
• Thoracic Outlet
• Thoracic and Lumbar Regions
• Ribs, Pelvis
• Chapman’s Points – Anterior= upper edge of the clavicle where it crosses Rib 1; Posterior= upper edge of the tip of C1 transverse process
• Trigger point for the Eustachian tube= Medial Pterygoid m.

Possible Treatments Options:
• Gallbreath’s Technique
• Osteopathy in the Cranial Field- Balanced Membranous Tension
• Myofascial Release
• Balance Ligamentous Tension (BLT)
• Articulation
• Counterstrain
• Facilitated Positional Release (FPR)
• Muncie/Modified Muncie techniques- place on finger on the Rosenmuler’s fossa/posterior tonsillar pillar to achieve opening of the Eustachian tube; it is achieved via circular traction and a lateral force

Citations:


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