

Otitis Media: An Osteopathic Approach

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Introduction

Otitis media is a term for several conditions that can affect the middle ear. It can range from acute to chronic and be present with or without symptoms. It is an inflammation in the middle ear often accompanied by signs of middle ear effusion or infection. It makes no reference to etiology or pathogenesis but is a general term. Acute otitis media is inflammation of the middle ear with rapid and short onset of signs and symptoms of middle ear infection. One or more local or systemic signs are present: otalgia (ear pain), otorrhea (discharge from the ear), fever, irritability, anorexia, vomiting, and diarrhea. The tympanic membrane is full or bulging, opaque, and has limited or no mobility to pneumatic otoscopy- indicative of middle ear effusion. Otitis media with effusion is fluid in the middle ear without signs or symptoms of ear infection.¹ The tympanic membrane is most commonly opaque, retracted or convex, and again presents with impaired mobility. The effusion may be either *serous* - thin, watery liquid; *mucoïd* - thick, viscid liquid; or *purulent* - pus-like liquid.

Over the past fifteen years there has been a notable increase in the number of children diagnosed with otitis media. Otitis media is the most common reason for physician office visits by children under age 15. Office visits for otitis media increased by 150% between 1975 and 1990 in the U.S.A. to 24.5 million. Children under age 15 account for 81% of the visits and children under age 2 had the highest rate of visits to physicians for otitis media and they also had greatest increase in visits between 1975 and 1990: 224% .¹ These figures indicate otitis media's increasing prevalence in western society and how large a population it affects. So common is it that an ever-growing number of people in our society accept it as a normal part of growing up. The efficacy of the current medical treatment model needs to be evaluated and addressed.

The purpose of this article is to update the current medical thought, research, and efficacy of treatment of otitis media; and to question whether Osteopaths are justified in implementing an alternative regimen.

Review of Standard Medical Procedures And Recent Developments

The standard medical treatment of otitis media involves a two-tiered approach of drugs and surgery.² Antibiotic treatment is the American standard of care for acute otitis media and otitis media with effusion.³ Other common drugs used are antihistamines and decongestants. Anti-inflammatory agents are also often used

to manage pain and fever. The surgical methods include myringotomy, tympanostomy, tonsillectomy and adenoidectomy.² Although Otitis media is exceedingly common, and thousands of research studies have been conducted, uncertainties still persist regarding its etiology, natural history and management.

Cantekin, a researcher at the University of Pittsburgh in 1991, maintains that watchful waiting in acute otitis media is the best approach, with more than 90% of infections resolving within a few days.³ Cantekin also contends that the antibiotic, amoxicillin, for otitis media with effusion is no more effective than placebo and increases the risk of recurrences up to sixfold. The medical literature does support watchful waiting. A 1981 Dutch study found no difference in outcome between antibiotics, myringotomy, antibiotics combined with myringotomy and placebo. That study had a major effect in the Netherlands where a 1990 survey found only 31% of general practitioners treated acute otitis media with antibiotics. Nearly 98% of U.S. Physicians in the survey prescribed antibiotics. Commenting on this issue, John O'Shea, M.D., professor of pediatrics at Emory University School of Medicine, says: "We have never done the studies in this country (U.S.A.) to determine whether antibiotics are a good idea for otitis media and we are so pro-antibiotics that it would be very difficult for us to ever do the studies. We don't really have the experience that Holland and other countries have of not using antimicrobials."

A 1996 Finnish study by Olli-Pekka Alho et al. examined the natural course of recurrent acute otitis media in infancy without such prophylactic treatment.⁴ Their results showed only 4% of the 222 infants with recurrent otitis media developed chronic otitis media with effusion and an additional 12% continued having recurrent episodes. The most significant factor predicting an increased risk of recurrence was young age (less than 16 months of age). Attending day care and having siblings had a less pronounced effect. They concluded that spontaneous recovery from recurrent acute otitis media is common with increasing age. Therefore, until reliable causal evidence between recurrent otitis media and developmental disability is presented, chemoprophylaxis or tympanostomy tubes seem superfluous for most infants after the age of 16 months.

The U.S. Center for Disease Control and Prevention has drafted guidelines for the judicious use of antibiotics.⁵ They urge that antibiotics are not indicated for otitis media with effusion and proclaim that the public health message should be that each course of antibiotics increases the risk of carriage or invasive disease with resistant organisms.

In 1994 the U.S. Department of Health and Human Services developed the *Clinical Practice Guideline on Otitis Media with Effusion in Young Children*.¹ The guideline was developed by a interdisciplinary panel of 26 medical specialists following a critical review of all the literature and research that was available at that point in time. Following review, the panel concluded that most cases of otitis media with effusion resolve spontaneously, but the length of time to resolution is

variable. Research showed that only 14% of patients given antibiotic intervention showed any improved clearance of effusion compared to placebo. When this small improvement in resolution of otitis media with effusion was weighed against the side effects and cost of antibiotic therapy, they concluded that antibiotic therapy may not be preferable to observation in management of otitis media. Given this result they recommended that observation may be chosen for management of otitis media with effusion in an otherwise healthy child. Despite the lack of convincing evidence to support the use of myringotomy with or without the insertion of tympanostomy tubes, panel consensus recommended this treatment protocol under the following guidelines; to manage bilateral otitis media with effusion in an otherwise healthy child, that has lasted a total of 4 to 6 months and who has a bilateral hearing deficit (less than 20dB). Some research does show that within the first six months, hearing gains are somewhat better with insertion of tubes but after six months and on to five years there is no statistical difference.

Complications of tympanostomy include: acute otitis media (21%), general anaesthetic risks (one death per 5,000 to 10,000 procedures), psychological trauma, tympanosclerosis at a rate of up to 65% (formation of hard, dense tissue around the bones of the middle ear), localized foreign body reaction, tissue granulation, tissue hyalinization, hearing loss (temporary, permanent, or of varying degrees), persistent eardrum perforation, dislocation of tube into the middle ear cavity, blockage of the tube rendering it ineffective.² Treatment protocols that were *not* recommended by the panel of medical specialists in the U.S. Department of Health and Human Services Clinical Guidelines at any time, due to lack of evidence of effectiveness were: steroid therapy, antihistamine/decongestant therapy, adenoidectomy, and tonsillectomy.¹ In the most recent 1997 pediatric update sponsored by the American Academy of Pediatrics, Dr. S. Michael Marcy, of UCLA, School of Medicine, noted that there is good evidence that 75-85% of children with acute otitis media will get better with no treatment.⁶

Osteopathic Treatment

Most physicians use antibiotics because they view the ear infection as taking place solely within the ear itself. Osteopaths realize it's not the ear that needs the treatment, but the entire body. Fulford believes the problem actually starts with trauma at the child's birth, when the recto-respiratory reflex affects lymphatic drainage in the neck and the upper part of the shoulder. His solution is to treat and balance the sacrum, pelvis and the rib cage, which gets the lymphatic fluid flowing through the system, and then put some glycerin drops in each ear. Here is how he explains the situation : "When the sacrum is restricted, the whole primary respiratory mechanism is impaired. Along with this goes a pattern of restricted breathing, and it is the force of the breath - the rhythmic changes in the chest - that pumps the lymphatic circulation. With inadequate lymphatic circulation there is poor fluid drainage from the head and neck. Stagnant fluid

builds up in the middle ear, producing an ideal breeding ground for bacteria. You can wipe out the bacteria all you want with antibiotics, but if you don't correct the underlying problem of fluid stagnation, they're just going to come back."⁸ His success led to the production of a documentary film by the University of Arizona and over the years he has treated hundreds of children this way, and nearly all of them improved without the ill effects of drugs.

Magoun contends that maintaining unrestricted motion of the temporal bones is good preventive medicine and correcting such in the acute condition is very beneficial.⁹ He believes the site of infection is determined by lowered resistance on the side with the structural disturbance. Slow and very gentle alternating external and internal rotation of the temporal bones will sometimes bring drainage and relief. Generally a specific temporal bone lesion, among other things, will exist and need to be addressed. Magoun , describes a Eustachian tube technique to accelerate drainage for a common petrobasilar restriction within a temporo-occipital lesion which has proved effective.¹⁰ This involves rotating the temporals externally while drawing them posteriorly; and applying a gentle, slow, alternate, pumping action on the patient's glabella with the operator's shoulder. This alternate stretching and sagging of the cartilaginous portions of the eustachian tube closes and opens the tubes and tends to move any fluids present. Upon completion of the technic it is necessary to restore the temporals normal relationship by lifting them anteriorly and internally rotating them for several respiratory cycles. The operator should also drain the pterygoid plexus of veins to relieve head congestion by pulling the jaw down and forward and relaxing all associated tissues in the neck and upper thoracic. Steady the frontal bone with one hand, while pulling the relaxed jaw down and forward with the other. Repeat several times. The permitted motion is limited so do not overdo it. The external ears may be pumped with the palms of the hands. Particular attention should also be paid to any acromioclavicular lesions, the anterior cervical fascia, the thoracic inlet, the upper cervical spine and any immunity enhancement or lymphatic drainage techniques.

The Chapman's reflexes for otitis media are: The upper edge of the clavicle just beyond where it crosses the first rib and the upper edge of the posterior aspect of the tip of the transverse process of C1. These are treated with firm, gentle contact and a rotatory motion imparted by the pad of the middle finger.

Dr. Viola Frymann of California's Osteopathic Center for Children, has over 35 years of experience working with children.¹¹ Dr. Frymann says, "We get children with recurrent ear infections that started when they were six months old and have gone on for years. Parents are sick of the merry-go-round of antibiotics and ear infections. When we begin to address the structural problem, which may have originated at birth, the ear infections become progressively less frequent." In Dr. Frymann's experience, when the temporal bone is lesioned in internal rotation, fluid retention readily occurs in the middle ear and the probability of infection escalates.¹²

Heatherington, expands on T.J.Ruddy's 1962 AAO Yearbook article, regarding manipulation of the eustachian tube.¹³ This approach to manipulating the eustachian tube is through the mouth to the nasal pharynx. The procedure requires only 10-20 seconds to complete, however it is an uncomfortable procedure for the patient and may cause gagging or retching. It was originally performed under anaesthetic but a few experts can successfully complete the procedure without it. A pumping action with the index finger 4-5 times over the eustachian opening in the fossa of Rosenmuller can lyse any soft tissue adhesions, open the tube and equalizes atmospheric pressure on both sides of the tympanic membrane. Heatherington also reports on the frequent finding of associated temporal bone and/or C2-3-4 dysfunction on the involved side.

Adjunctive advice would include guidance regarding the other common and interconnected causes of otitis media which include allergy (mostly food borne), depressed immunity and nutritional deficiency. A full review of these factors is beyond the scope of this paper but mention must be made that of all foods, cow's milk and other dairy products are probably the number one contributor to childhood ear problems.² Other common food allergies include: wheat, eggs, chocolate, citrus, corn, soy, peanuts, sugar, and yeast. Passive smoking also increases the incidence of otitis media nearly three-fold. Ear drops are not generally known to cure earaches, but they can provide what most parents and children are after - relief of symptoms. One of the most effective herbs is mullein, used as drops in oil. The herb should be heated slightly by placing the bottle in warm water. Use a dropper to test that the oil is not too warm on the inside of your wrist, then place three drops in the affected ear and plug with cotton. Repeat three times per day re-using the same piece of cotton. Eardrops should not be used when there is fluid draining out of the middle ear. A specific homeopathic remedy can also prove remarkably effective in the treatment of otitis media. One other factor that may be significant, although the studies are inconclusive with persistent otitis media with effusion; is the practice of giving a child a bottle in bed. This is, in part, due to the horizontal position of the eustachian tube in a child, and the ease with which fluid backs up into the tube.

Discussion

These are only some of the specific techniques that osteopaths have been using to successfully treat otitis media since near the beginning of the professions conception. The aim of this article is not to exhaustingly list every described technique but to provide some initial information and stimulate thought. As always osteopaths should resist the temptation to diagnose and treat to a specific pathologic prescription; step one, step two, step three. That is the hallmark of other professions. As osteopaths, wherever they feel a problem exists in the body; that is where their treatment should take them. The osteopathic treatment should consider the whole body and any/all mechanical obstruction which will improve drainage of mucous or liquid from the middle ear.

Following on from this most recent research critique it can be seen that, in general, the standard allopathic treatment for otitis media, is not as effective as physicians, patients or parents, would like it to be. Osteopaths also, are acutely aware that the standard medical approach is not designed to cure this malady but to treat symptomatically.

Due to the fact that research validates observation as an appropriate protocol for uncomplicated otitis media (acute or with effusion), it is justifiable to avoid dispensing antimicrobials and to proceed with administration of Osteopathic Manipulative Medicine (OMM) under observation. This is despite the unfortunate fact that the osteopathic profession worldwide, has failed to provide a randomized, controlled study of OMM and its effectiveness on otitis media. At present all osteopaths have in regards to OMM's efficacy of treatment is their own experiences in practice and the anecdotal evidence of colleges. While clinical experiences can be the most valuable guideline and these can at times be nothing short of spectacular, the profession needs to have scientific evidence to convince the skeptics how well suited osteopaths are as practitioners to handle these cases. This notwithstanding, if observation is an accepted protocol in medical management, then why not observation combined with OMM?

Conclusions

This article shows that currently, the most common reason for a child under age 15 to visit a physician is otitis media, and the standard medical treatment has shown to be of limited effectiveness in its resolution. Osteopaths do have a justified position in observing patients and providing OMM. The osteopathic profession sorely needs a randomized, controlled study showing OMM's effectiveness in this field. Until this happens, the knowledge of the effectiveness of their patient treatment will be confined to their profession as they don't have effective studies to show the medical community or the general population at large that they could effectively deal with so many of these complaints.

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