

The Use of Osteopathic Manipulative Treatment as Adjuvant Therapy in Children With Recurrent Acute Otitis Media

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FROM ABSTRACT

Objective

To study effects of osteopathic manipulative treatment as an adjuvant therapy to routine pediatric care in children with recurrent acute otitis media (AOM).

Study Design

Patients 6 months to 6 years old with 3 episodes of AOM in the previous 6 months, or 4 in the previous year, who were not already surgical candidates were placed randomly into 2 groups: one receiving routine pediatric care, the other receiving routine care plus osteopathic manipulative treatment.

Both groups received an equal number of study encounters to monitor behavior and obtain tympanograms.

Main Outcome Measures

We monitored frequency of episodes of AOM, antibiotic use, surgical interventions, various behaviors, and tympanometric and audiometric performance.

Results

A total of 57 patients, 25 intervention patients and 32 control patients, met criteria and completed the study.

Adjusting for the baseline frequency before study entry, intervention patients had fewer episodes of AOM (mean group difference per month, -0.14), fewer surgical procedures, and more mean surgery-free months (intervention patients, 6.00; control patients, 5.25).

Baseline and final tympanograms obtained by the audiologist showed an increased frequency of more normal tympanogram types in the intervention group, with an adjusted mean group difference of 0.55.

No adverse reactions were reported.

Conclusions

The results of this study suggest a potential benefit of osteopathic manipulative treatment as adjuvant therapy in children with recurrent AOM; it may prevent or decrease surgical intervention or antibiotic overuse.

THESE AUTHORS ALSO NOTE:

Guidelines for management of recurrent acute otitis media(AOM) stress the importance of limiting antibiotic.

Antibiotic use should be restricted to children with recurrent infection.

"Because of the anecdotal experience of many osteopathic physicians, we tried to document whether an alternative or complementary approach has some merit."

"Authors of prior articles have addressed the role of structural influences on otorhinolaryngologic function and suggested osteopathic_or chiropractic manipulation."

This study is a prospective randomized controlled trial in children with recurrent AOM.

"We explore the potential effect of OMT as adjuvant therapy and monitor antibiotic use, episodes of AOM, surgical intervention, audiometric and tympanometric measures, and behavior."

Four osteopathic physicians participated in this study.

PATIENT SELECTION

"Children 6 months to 6 years old with recurrent AOM episodes, 3 in the previous 6 months or 4 in the previous year, who had no immunologic or chromosomal anomaly or congenital malformation of the head; no prior manipulation, either osteopathic or chiropractic; and no previous otorhinolaryngologic surgery were eligible."

DATA COLLECTION

Children in both groups were scheduled for 9 visits during the study: approximately 3 weekly, 3 biweekly, and 3 monthly.

At each visit, history about medications, illnesses, injuries, and changes in behavior including irritability, disobedience, ear pulling, appetite, restful sleep, hearing when spoken to, listening to conversation, talking, and clumsiness. Monthly tympanograms were also obtained.

OSTEOPATHIC MANIPULATIVE TREATMENT

"Osteopathic manipulative treatment was provided to the intervention group at each visit, as indicated by the osteopathic examination results and the child's cooperation."

"Treatments were gentle techniques on areas of restriction consisting of articulation, myofascial release, balanced membranous tension, balanced ligamentous tension, facilitated positional release, and/or counterstrain treatments."

"No high-velocity (popping) techniques were used. The entire body, with attention to the head and neck, was included in the osteopathic evaluation and treatment."

In this study, 57 patients were analyzed, 25 in the intervention group and 32 in the control group.

NEW EPISODES OF AOM

The manipulation group had a mean of 0.19 episodes of AOM per month during the study, as compared with a mean of 0.27 in the control group.

Therefore, the manipulation patients had fewer episodes of AOM, with a mean difference in episodes per month of -0.14.

The manipulation group had 16% fewer AOM episodes as compared with the control group over the course of this study.

ANTIBIOTIC PRESCRIPTIONS

The manipulation group had a mean of 0.30 antibiotics prescribed per month during the study, as compared with a mean of 0.42 in the control group.

The mean number of antibiotics prescribed per month was less in the manipulation group as compared to the control group by 17%.

SURGICAL INTERVENTIONS

One patient in the manipulation group and 8 patients in the control group underwent surgical tube insertion. **[WOW]**

TYMPANOMETRIC DATA

The manipulation group had 17% more normal tympanograms, as compared with the control patient's.

PARENT SATISFACTION

"No adverse reactions to OMT were reported during the study."

"In the final questionnaire, several parents reported pleasant effects such as relaxation or a good nap after the treatment [manipulation]."

COMMENT

The results of this outcomes-oriented study demonstrated statistically significant differences between the groups in several related clinical outcomes.

POTENTIAL IMPORTANCE OF OMT

"Much of the attention in the literature has focused on the microbiologic environment of the middle ear, abnormalities in the muscles that activate the opening of the tube, and mucosal swelling of the pharynx."

"Given the position of the auditory tube between the temporal and sphenoid bones and its relationship to the muscles of the soft palate, the tensor veli palatini, levator veli palatini, and salpingopharyngeus, it is apparent that the tube is vulnerable to extrinsic compression, presumably during birth."

"The osteopathic concept, which relates form to function, suggests a structural influence on the tube's patency, which may be amenable to OMT."

"Findings in this study suggest that OMT may provide a benefit during this window of risk for surgery."

WHAT THIS STUDY ADDS

"Current treatment guidelines for recurrent AOM management give little guidance as to how to refrain from potentially unnecessary use of antibiotics or surgery."

"Alternative and complementary medicine approaches hold promise but are poorly documented in the literature."

"Osteopathic manipulative treatment has a potential applicability in children with recurrent AOM, which can be explained by the anatomic relationships of the auditory tube."

"Results of this study suggest a potential benefit of OMT as adjuvant therapy, demonstrating improvement in episodes of AOM, frequency and timing of surgical intervention, and normalcy of tympanograms."

KEY POINTS FROM DAN MUJRPHY

1) In this study, osteopathic manipulation and treatment of children with inner ear infections showed the following:

- (A) Fewer episodes of acute otitis media 16%.
- (B) Reduced use of antibiotics by 17%.

- (C) Fewer surgical procedures by 87.5% (8 vs. 1).
 - (D) More surgery-free months
 - (E) More normal tympanograms by 55%.
- 2) The osteopathic concept relates form to function.
 - 3) OMT for AOM can potentially reduce unnecessary use of antibiotics or surgery.