THE PRESENCE OF ADENOID VEGETATIONS AND NASAL SPEECH, AND HEARING LOSS IN RELATION TO SECRETORY OTITIS MEDIA

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Abstract
This study presents the treatment of 68 children with secretory otitis media. Children underwent adenoid vegetations, nasal speech, conductive hearing loss, ventilation disturbance in Eustachian tube. In all children adenoidectomy was indicated.

38 boys and 30 girls at the age of 3-17 were divided in two main groups:
• 29 children without hypertrophic (enlarged) adenoids,
• 39 children with enlarged (hypertrophic) adenoids.

The surgical treatment included insertion of ventilation tubes and adenoidectomy where there were hypertrophic adenoids.

Clinical material was analyzed according to hearing threshold, hearing level, middle ear condition estimated by pure tone audiometry and tympanometry before and after treatment. Data concerning both groups were compared.

The results indicated that adenoidectomy combined with the ventilation tubes facilitates secretory otitis media healing as well as decrease of hearing impairments. That enables prompt restoration of the hearing function as an important precondition for development of the language, social, emotional and academic development of children.

Key words: adenoid vegetations, nasal speech, secretory otitis media

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**Introduction**

Secretory otitis media (SOM) is one of the most common childhood concerns mainly in preschool and school children. SOM is a collection of fluid in the tympanic cavity without the signs and symptoms of acute inflammation. Abnormal Eustachian tube function appears to be the most important factor in the pathogenesis of SOM. Children with SOM typically have rather elevated, fluctuating hearing thresholds of about 20-25 dB (1, 6). They complain of ear fullness or tinnitus (1, 3).

Diagnostic accuracy of SOM can be confirmed by the tympanometry. Those measurements provide an objective assessment of middle ear pressure and tympanic compliance. Usually we obtain B tympanogram, sometimes C tympanogram occurs (Berry et al., 1975). In literature, the influence of adenoids, their size and adenoidectomy on secretory otitis media seems to be controversial.

Some authors maintain that enlarged adenoid influence considerably the illness and others do not observe a significant difference in SOM occurrence with or without enlarged (hypertrophic) adenoids. (Cowenberge et al. 1995) (3).

The aim of the study is to answer the question whether the presence of enlarged adenoid influences frequency, clinical course of the disease on the bases of the treatment results of SOM (4, 5 and 6).

**Material and Methods**

Subjects of the clinical investigation were a group of 68 children at the age of 3-17. Accordingly to the clinical examination (digital assessment and nasofiberscope) children were divided into 2 groups.

The first group consisted of 29 children without enlarged (hypertrophic) adenoids and the second group consisted of 39 children with enlarged (hypertrophic) adenoids.
Kaj decata od prvata grupa bea postaveni ventilaci oni cev-iwa, a kaj decata od vtorata grupa pokraj ventilaci oni cev-iwa bej e napraveno i adenoide dektomiija. Tonal - no audiometriisko i spiv tuvaive i timpanometriija bej e napravena predi po operaci - jata so pomo{ na audiolo{ka aparatura (audiometer Hortman CA 540) i klini -ki timpanometar (Hortman tip 87). Ne postoe{e si signifikanta razlika vo ?²-testot mejusite grupi (p>0,05) (Slika 1).

Pomrejuju 68 deca so SOM, 39 (57%) imaa hi pertrofi-i-ni adenoi di, ?² testot pokaj deka SOM se pojavuva i vo dvete grupi na dece (oni e koi i naa i oni e koi nemaat hi pertrofi i-ni adenoi di). Spor edtestot na i mpendanca (?² = 0,927, p>0,05), vo grupata II vo grupata II fefcijata na pojava na SOM na ednoot ili pak na dvete u{i e sli -na (Slika 2).

Rezultati

Rezultatite se izrazeni kako prose-ni vrednosti vo razlikata pomeju koskenata i vozdu{nata sprovodlivost pred i po hirur{kiot tretman. Ne se doka{as si signifi - kantna razlika meju decata so SOM so ili bez hi pertrofi-i-ni adenoi di. Timpanomet -riski te testovi pokaj deka fefcijata na af ekci jata na ednoto ili dvete u{i e sli -na vo dvete grupi. Eval uaci jata na rezultatite od sprovodni ot tretman se ba -ziratrena na promeni te koi bea regirstri rani na timpanogramot (5).

Tie uka{aa deka tretmanot e poefiksani i restarvaci jata na sluhot e pobrza kaj deca so SOM od vtorata grupa (?²=1,62 p=0,02)

Ventilation tubes were inserted in children from the first group, and the children from the second group underwent adenoidectomy and ventilation tube insertion. The pure tone audiometry and tympanometry were performed pre and postoperatively using audiological equipment (Audiometer Hortman CA 540) and clinical tympanometer (Hortman type 87). There was not a significant difference in ?²-test between the groups (p>0.05) (Fig. 1.).

Among 68 children with SOM, 39 (57%) had enlarged adenoids, ?² test shows that SOM occurs with the same probability in children with and without enlarged adenoid. According to the independence test (?²=0.927, p>0.05) in the first and the second group, the frequency of affection of one or both ears in children with SOM are similar (Fig. 2).

Results

The treatment results were expressed as an average air bone conduction pure tone, and air-bone gap difference in pre and post surgical procedure. No significant difference was shown between children with SOM with or without hypertrophic adenoids.

All tympanograms tests showed that the frequency of affection of one or both ears in children with SOM is similar in both groups. Evaluation of treatment efficiency was conducted basing on changes registered on the tympanogram (5). They showed that the treatment is more efficient and the restoration of hearing is quicker in children with SOM from the second group. (?²=1.62 p=0.02).
**Figure 1.** Average period of SOM duration in children in groups and subgroups

**Figure 2.** Occurrence of SOM in children

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**Slika 1.** Sreden period na træwe na SOM kaj decata podelen vo grupi i podgrupi

**Slika 2.** ^estot na pojava na SOM kaj deca

(\(\chi^2=1.62 \ p=0.02\))

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**SOM (SOM)**

<table>
<thead>
<tr>
<th></th>
<th>Grupa 1</th>
<th>Grupa 2</th>
<th>Podgrupa A</th>
<th>Podgrupa B</th>
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<tbody>
<tr>
<td>Sreden period (meseci)</td>
<td>7,40</td>
<td>7,60</td>
<td>10,10</td>
<td>6,80</td>
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<table>
<thead>
<tr>
<th></th>
<th>Number of children</th>
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<tbody>
<tr>
<td>Edno uvo</td>
<td>10,6</td>
</tr>
<tr>
<td>Dve uvo (Both ears)</td>
<td>51</td>
</tr>
<tr>
<td></td>
<td>55</td>
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</tbody>
</table>
**Figure 3.** Tympanogram type B. Conductive hearing loss.

**Slika 3** Timpnogram tip B. Konduktivno na maluvawe na sluhot
Discussion

Many clinicians emphasize the great influence of enlarged adenoid on SOM occurrence. Some investigators do not agree with this theory. Lack of agreement over methodology, different selection methods can partially explain these different opinions.

In our material among children undergoing ventilation tube insertion, in the second group enlarged adenoids were confirmed and they request adenoidectomy.

All our observations and other author opinions indicate profitable influence of the enlarged adenoid removal on healing process after ventilation tube insertion in SOM (6, 7). This may result from the infection source removal and restoration of the nasopharynx and Eustachian tube.

Literatura / References