Otomicroscopic and audiometric findings 10 years after ventilation tubes (VT) insertion

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Ventilation tubes (VT) placement is one of the possibilities how to bypass eustachian tube dysfunction in patients with otitis media with effusion in children.

The main goal

Our aim was to compare findings in ears after VT and without VT and to compare audiological results in both groups to exclude serious tympanic membrane damage and hearing deterioration.

Introduction

In 2016 we designed retrospective study in children, in whom 2005 VT were placed. Only children with one episode of bilateral VT insertion were selected. From 64 addressed children we examined 26 (40.6%). We performed photos of tympanic membranes, pure tone audiometry (PTA), Czech speech audiometry (SA), tympanometry with stapedial reflex (TMP). We compared the results with group of 10 children without otologic anamnesis.

Results otomicroscopy findings

N=72 ears (both groups)

VT group
- 22 normal findings
- 19 calcification
- 15 atrophy
- 7 epitympanic retraction
- 3 diffuse scarifying
(* more findings in one ear)

Control group
- 20 normal findings in control group

Results audiometry

In both groups was in PTA hearing threshold lower than 20dB, but in VT group was higher than in control group. Statistical significant only at 2kHz (p 0.02). We didn’t find significant difference in speech reception threshold (SRT) in Czech speech audiometry. TMP were in all responders A curve.

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<thead>
<tr>
<th></th>
<th>500Hz</th>
<th>1000Hz</th>
<th>2000Hz</th>
<th>4000Hz</th>
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<tbody>
<tr>
<td>VT group</td>
<td>14</td>
<td>11,5</td>
<td>12,2</td>
<td>10,8</td>
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<tr>
<td>control group</td>
<td>11,9</td>
<td>10,7</td>
<td>10</td>
<td>10,7</td>
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<tr>
<td>p value</td>
<td>0,1</td>
<td>0,37</td>
<td>0,02</td>
<td>0,9</td>
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average SRT (in dB)

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<tbody>
<tr>
<td>VT group</td>
<td>21</td>
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<tr>
<td>control group</td>
<td>21</td>
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<td>p value</td>
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Conclusions

We didn’t find serious (perforation, cholesteatoma suspection) tympanic membrane pathology in our VT group. There is no statistical significant difference in audiology examination in both groups.

According findings in our very small group of examined children still placement of VT in management of otitis media with effusion relative safe procedure for aeration of middle ear.

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