Role of Hereditary Factors in Strabismus Occurrence

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Aim: This work was aimed to determine the frequency of hereditary factors in relatives of children who have previously underwent the examination and appropriate diagnostic procedures that proved existence of squint. Methods: Our research included 113 relatives who responded to our calls for review. Results: In 36 (31.85%) of hereditary factors in the occurrence of one or more members of the same family. Some members had appearance of hereditary factors in the cases of all three generations, while in other cases of strabismus it was present in one or two generations of the same genealogical tree. Most often represented eyeball deviation was convergent squint (72.22%), diverging at 16.66% of respondents, while mixed forms and vertical deviations were much less frequent. Conclusion: Taking into consideration that strabismus is mostly present in more than one member of family, it is necessary to undertake a wide active search among relatives of the children suffering from strabismus in order to find a role of hereditary factors among the children suffering from bulbous deviation. Key words: hereditary factors, squint, strabismus.

1. INTRODUCTION
Hereditary factors besides optical, organic, anatomy-motorial, innervations, central and outward factors, have a significant role in occurrence of squint and strabismus (1). The hereditary factor is very often present in parents, brothers, sisters and close relatives. From strabismus as a rule suffer more than one member of family (2, 3), and it is mostly a facultative complication of refraction deviation that is genetically determined in itself as well. (4)

2. AIM
The aim of our researches is to determine a role of hereditary factors among the children suffering from strabismus.

3. PATIENTS AND METHODS OF WORK
Within our work we completed research among 113 relatives of the children for whom we, in accordance with examinations and appropriate diagnostic procedures, found presence of strabismus. Data we collected by review of medical documentation and direct examination of the relatives who answered our call for such examination. The relatives who at examination had orthophoria status and cover-uncover test in order, and who from the previous period had medical documentation proving that their healing came upon implementation of orthooptic or operation as medical treatments, we also join to the group with positive family inherited risk from strabismus. The objective examination of the candidates undergoing examination included: determination of sight sharpness [5], refraction of each eye, testing of movements version-duction (5, 6), cover-uncover test, determination of PPC, determination of fixation, examination of eye bottom and measuring of deviation angle size (7). Test of covering-uncovering was the most important at defining of strabismus diagnosis (6, 8).

4. WORK RESULTS AND DISCUSSION
We found 36 (31.85%) relatives of 113 children suffering from strabismus who had some form of squint. We found strabismal fathers of 6 children, mothers of 10 children. In the case of one child both parents had strabismus. Brothers of 3 children were strabismal, and sisters of 7 children, and grandparents of 3 examined persons were strabismal.

<table>
<thead>
<tr>
<th>Strabismus in family</th>
<th>Number of patients</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Both parents</td>
<td>1</td>
<td>0.88</td>
</tr>
<tr>
<td>Father</td>
<td>6</td>
<td>5.30</td>
</tr>
<tr>
<td>Mother</td>
<td>10</td>
<td>8.84</td>
</tr>
<tr>
<td>Brother</td>
<td>3</td>
<td>2.65</td>
</tr>
<tr>
<td>Sister</td>
<td>7</td>
<td>6.19</td>
</tr>
<tr>
<td>Grandparents</td>
<td>6</td>
<td>5.30</td>
</tr>
<tr>
<td>Other close relatives</td>
<td>3</td>
<td>2.65</td>
</tr>
<tr>
<td>Total</td>
<td>36</td>
<td>31.85</td>
</tr>
</tbody>
</table>

Table 1. Distribution of patients having strabismus in family.
According to a type of deviation, convergent strabismus was mostly present: found in 26 relatives or 77.22%; divergent strabismus was present in 6 examined persons or 16.66%, mixed form of deviations (combination of horizontal and vertical declination) was present in 3 or 8.33% of relatives. One person being examined (2.77%) had a vertical upper declination of bulbous (hyperthropy). Results of our research are slightly different from results of the authors who examined relatives (1). Although, most of ophthalmologists doing researches concerning hereditary factors consider that there is no strabismus without refraction deviation, and that in numerous cases the refraction deviation is a main cause of strabismus (2, 9, 10, 11, 12).

5. CONCLUSION
When we have a little patient with strabismus, we should take into consideration a possibility that maybe someone of his relatives suffering from strabismus, too. Number of cases that were diagnosed in our work was more than we expected and led to our conclusion on significant number of hereditary factors occurred in our population. Taking into consideration that strabismus is mostly occurring in more than one member of family, it is indispensable to undertake a wide active search among relatives of children suffering from strabismus in order to find a role of hereditary factors among the children suffering from bulbus deviation.

REFERENCES