Quality of life of patients with strabismus

Qualidade de vida em pacientes estrábicos

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ABSTRACT

Purpose: To evaluate the impact of strabismus on quality of life.

Methods: This cross-sectional study included 101 individuals aged 7-67 years with strabismus. They were interviewed and made to answer a questionnaire with 20 questions intended to assess the individual’s interaction with their social and working environment, sensory perception, and limitations in their daily lives. There were five types of possible responses for each question: never, rarely, or very few times, sometimes, frequently, and always. The questionnaire was based on the AS-20 and contained 11 questions assessing psychosocial aspects and 9 questions assessing functional aspects. Among those who were interviewed, 24.8% had undergone surgical correction of strabismus.

Results: We observed a significant impact of strabismus on the quality of the life of the interviewed individuals. Feelings of sadness and inferiority because of strabismus were reported by 74.2% and 58.4% respondents, respectively. In terms of functionality, 12.1% reported difficulty in reading, 14% said they had difficulty in depth perception (stereopsis), and 17.8% frequently or always associated pain or burning sensation in the eyes to strabismus. A significant difference was detected in the quality of life scores for the psychosocial aspect among patients who had and had not undergone surgery (Wilcoxon test, 158; p<0.001). Individuals who had undergone surgery had a better quality of life from the psychosocial perspective.

Conclusions: In this evaluation, we found a significant negative interference of strabismus on quality of life from both the functional and psychosocial perspectives. This demonstrated the importance of treatment for strabismus, regardless of age, because it can interfere with the functional well-being of the individual.

Keywords: Strabismus/physiopathology; Social behavior; Quality of life; Questionnaires

INTRODUCTION

Strabismus is one of the ophthalmological problems that can affect the quality of life of individuals. The quantitative assessment of the quality of life of patients with strabismus may be an important addition to clinical examination because it allows for a greater understanding of the condition and a proper assessment of the effectiveness of treatment.

The main purpose of strabismus treatment is the alignment of the visual axes in order to achieve single binocular vision with good image fusion. Other advantages of strabismus correction include the improvement of any abnormal head posture, expansion of the visual field, restoration of stereoscopic acuity, centralization of the visual field, elimination of diplopia, improvement in ocular motility, improvement in psychomotor development, and restoration of normal appearance.

Both children and adults with strabismus suffer frequently from various psychosocial and emotional problems such as low self-esteem, negative social prejudice, school bullying, increased social anxiety, fragile interpersonal relations, and job opportunity issues. Strabismus is known by the lay population only as a physiognomic aesthetic defect that causes damaged self-esteem and hinders relationships and psychosocial relations. Many authors condemn the use of the terms esthetic or cosmetic for the treatment of strabismus because these terms mean “something made to improve or embellish.” However,
strabismus is a pathological state caused by a process from an underlying disease associated with abnormal binocular vision that leads to a change in the normal appearance of an individual and can affect the quality of life (8-12).

In recent years, many studies have evaluated the strabismus-related quality of life (SRQOL). There are some specific instruments for SRQOL assessment, which were elaborated on the basis of interviews with patients and their relatives. Feelings and expressions have been thus collected and used by doctors and researchers for the development of more objective and efficient questionnaires for measuring the impact of strabismus on the patients' quality of life (13-17).

In 2009, the AS-20 questionnaire was developed for the assessment of SRQOL. It can be used in everyday clinical practice or as a research tool and can be filled out by the patient without supervision. The full version is available without restrictions as long as it is identified by quoting its original description (13). On this basis, we developed a similar questionnaire with small changes caused by cultural differences and forms of expression in our country. The questionnaire established by our department was conducted by the researchers instead of being filled out by the patient alone. With this, we could better explain the purpose of the research and the questions, making it possible for use in children aged >8 years. The purpose of this study was to assess and compare the psychosocial, emotional, and functional consequences of strabismus in a portion of the Brazilian population.

METHODS

This study was approved by the Research Ethics Committee of the Hospital das Clínicas at Universidade Federal de Minas Gerais (UFMG) on 09/28/2011. It was conducted in the Strabismus Sector of Hospital São Geraldo at UFMG. A semistructured interview was conducted with individuals aged >7 years old after their parents provided written informed consent. The patients underwent identification and complete eye examination. A questionnaire assessing strabismus was filled out by the researchers. In addition, the patients completed a specific questionnaire with 20 questions about quality of life (Annex) that was performed specifically for the study. This questionnaire was created by the researchers on the basis of AS-20 (13). Its purpose was to assess patient interaction within social and working environments, sensory perception, and daily life limitations, with five types of answers for each question: never, rarely or very few times, sometimes, frequently, or always. This strategy aimed to facilitate the patient's understanding, make the answering of questions easier, and allow for fewer false-negative answers.

RESULTS

Totally, 101 individuals aged 7-67 years were interviewed. The average age of patients was 22.7 years, with the majority being ≤18 years (53.4%). With regard to the subgroups, a relative predominance of women (61.4%) was observed. With regard to the type of strabismus, 58.4% respondents had esotropia, 37.6% had exotropia, 2% had dissociated vertical deviation (DVD), 1% had left eye hypotropia, and 1% did not have any deviations because he had previously undergone corrective surgery. At the time of the study, the patients were interviewed in the strabismus outpatient department; 75.2% had not undergone strabismus correction surgery and 24.8% had already undergone surgery an average of 2.7 years before the interview. The number of answers for each question and the respective percentages are shown in table 1. For the first question in the quality of life questionnaire, 68.3% patients always noticed that they had strabismus, and when added together with the answers of “frequently” and “sometimes”, this number increased to 83.1%. When asked how frequently strabismus bothered them, 49.5% reported that it always did, and when combined together with the answers “frequently” and “sometimes”, this percentage increased to 74.2%. The majority of the patients (54.4%) thought that people were always staring at their eyes, and only 15.8% thought that people never noticed their strabismus. When asked if they felt...
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...inferior because of the strabismus, 41.5% reported that they always did. If we considered the answers "sometimes" and "frequently", this percentage increased to 58.4%. Of all the interviewed patients, 22.7% felt that strabismus affected their performance at school or work.

In terms of their relationships with other people, 53% patients felt that strabismus affected their interpersonal relationships at some point in their lives. Of those patients, 22% felt that this was a constant problem. They were asked if social interaction and job opportunities were diminished because of strabismus, and 44.5% answered that it always, frequently, or sometimes happened in their lives.

The majority of patients (71.2%) imagined what other people thought about their eyes, and 34.6% observed the same. The majority of the patients (62.3%) answered that strabismus never prevented them from making friends, but 16.8% felt that it always interfered. The majority of patients (62.3%) always, frequently, or sometimes felt upset when somebody asked them about their eyes, and 16.8% felt that people frequently or always avoided looking at them.

When asked if strabismus hindered their vision, 22.7% answered that they were frequently or always impaired by their problem, and 12.1% said that they had difficulty in reading because of strabismus. With regard to an increase in anxiety related to strabismus, 27.7% were always or frequently anxious. When asked about their assessment of depth perception or the evaluation of the distance between objects, 11% patients reported that they always faced this difficulty. Pain or burning sensation in the eyes was also associated with strabismus; 57.4% patients felt some kind of discomfort. Of all the patients interviewed, 84% reported that they never had to close one eye while reading. The majority of patients (82.1%) did not complain of double vision, but this always happened to 4.9%. Many patients related eye strain with strabismus, 26.7% sometimes felt eye strain, and 18.8% always felt eye strain. In addition, many patients reported attention deficits related to the problem: 19.8% always experienced them and 26.7% sometimes or frequently experienced them.

A significant difference was detected in quality of life scores for the psychosocial aspect between patients who had and had not undergone surgery (Wilcoxon test, 158; p<0.001). Individuals who underwent surgery had a better quality of life from the psychosocial aspect (the median value for individuals who did not undergo surgery was -0.467, while that for those who underwent surgery was 1.095). The same difference was detected for the total quality of life score (Wilcoxon test, 169; p<0.001). Individuals who underwent surgery had a better total quality of life (the median value for individuals who did not undergo surgery was -0.475, while that for individuals who underwent surgery was 1.21). No significant difference was detected at the 5% level in the functional aspect of the quality of life score between individuals who had and had not undergone surgery.

DISCUSSION

Some quality of life studies have demonstrated that strabismus may have a more harmful effect than diabetic retinopathy, macular degeneration, or a mild cerebrovascular accident(18). This study demonstrated that strabismus in adults was associated not only with functional effects but also with psychosocial negative effects; both can have a great influence on all aspects of the patient’s life.

Reports of the psychosocial negative effects of strabismus in adults were published in 1993; the patients said that every aspect of their lives was affected by strabismus, such as self-esteem, employment prospects, interpersonal relationships, education, and playing sports(19). More severe manifestations have been observed, including an increase in the occurrence of psychiatric disorders in young adults with strabismus, particularly exotropia. A study determined that 41.3% patients with strabismus developed mental health problems compared with 30.7% from the control group(20,21).

In order to assess the quality of life, it is necessary to focus on the problems associated with the disease of interest. Therefore, it is important to develop specific assessment tools. Previous studies have quantified the negative effects of strabismus using a variety of generic questionnaires that were nonspecific for strabismus, such as the Time Trade-Off (TTO) (how much time of their life they would use to achieve perfect vision) or the Standard Gamble (SG: what would they risk in order to achieve perfect vision). According to the former, there was a 3.7% decrease in quality of life(20,22,23).

Table 1. Answers for the 20 questions (Q1 to Q20) with absolute numbers and the percentage for each one of them in brackets

<table>
<thead>
<tr>
<th>Question</th>
<th>Never</th>
<th>Rarely or very few times</th>
<th>Sometimes</th>
<th>Frequently</th>
<th>Always</th>
</tr>
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<tr>
<td>Q1</td>
<td>16 (15.84)</td>
<td>1 (0.99)</td>
<td>12 (11.88)</td>
<td>3 (2.97)</td>
<td>69 (68.32)</td>
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<td>Q2</td>
<td>18 (17.82)</td>
<td>8 (7.92)</td>
<td>21 (20.79)</td>
<td>4 (3.96)</td>
<td>50 (49.50)</td>
</tr>
<tr>
<td>Q3</td>
<td>16 (15.84)</td>
<td>4 (3.96)</td>
<td>20 (19.80)</td>
<td>6 (5.94)</td>
<td>55 (54.46)</td>
</tr>
<tr>
<td>Q4</td>
<td>38 (37.62)</td>
<td>4 (3.96)</td>
<td>14 (13.86)</td>
<td>3 (2.97)</td>
<td>42 (41.58)</td>
</tr>
<tr>
<td>Q5</td>
<td>52 (51.49)</td>
<td>7 (6.93)</td>
<td>14 (13.86)</td>
<td>5 (4.95)</td>
<td>23 (22.77)</td>
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<tr>
<td>Q6</td>
<td>48 (47.52)</td>
<td>10 (9.90)</td>
<td>18 (18.81)</td>
<td>7 (6.93)</td>
<td>19 (18.81)</td>
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<tr>
<td>Q7</td>
<td>52 (51.49)</td>
<td>4 (3.96)</td>
<td>19 (18.81)</td>
<td>7 (6.93)</td>
<td>19 (18.81)</td>
</tr>
<tr>
<td>Q8</td>
<td>29 (28.71)</td>
<td>5 (4.95)</td>
<td>26 (25.74)</td>
<td>6 (5.94)</td>
<td>35 (34.65)</td>
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<tr>
<td>Q9</td>
<td>63 (62.38)</td>
<td>2 (1.98)</td>
<td>17 (16.83)</td>
<td>2 (1.98)</td>
<td>17 (16.83)</td>
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<td>Q10</td>
<td>36 (35.64)</td>
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<td>27 (26.73)</td>
<td>3 (2.97)</td>
<td>33 (32.67)</td>
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<td>Q11</td>
<td>59 (58.42)</td>
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<td>18 (17.82)</td>
<td>2 (1.98)</td>
<td>15 (14.85)</td>
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<td>Q12</td>
<td>58 (57.43)</td>
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<td>5 (4.95)</td>
<td>18 (17.82)</td>
</tr>
<tr>
<td>Q13</td>
<td>69 (68.31)</td>
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<td>15 (14.85)</td>
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<td>9 (8.91)</td>
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<td>21 (20.79)</td>
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<td>69 (69.00)</td>
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<td>12 (11.88)</td>
<td>3 (3.00)</td>
<td>11 (11.00)</td>
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<td>43 (42.57)</td>
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<td>6 (5.94)</td>
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<td>5 (4.95)</td>
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<td>27 (26.73)</td>
<td>6 (5.94)</td>
<td>13 (12.87)</td>
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<td>2 (1.98)</td>
<td>18 (17.82)</td>
<td>9 (8.91)</td>
<td>20 (19.80)</td>
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</tbody>
</table>
CONCLUSIONS

In our study, we managed to capture the perception of younger individuals aged >7 years, which is the age at which a child can recognize the interference of strabismus with the functional and psychosocial aspects of his or her life. Our study demonstrated that strabismus interfered with patient quality of life. A significant variation was observed in the psychosocial aspect of quality of life between patients who had and had not undergone surgical treatment. With this information, new studies can be conducted for the assessment of quality of life before and after surgical treatment in patients with strabismus.

REFERENCES