Amblyopia: the need for a new approach?

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SUMMARY  Follow-up of a series of 221 children identified by the present methods of screening, and presenting consecutively with squint and/or amblyopia, shows that there has been no demonstrable improvement in the overall incidence and severity of amblyopia 3 or more years later. A new approach to the problem is required, and this might be based on the identification and treatment of amblyopia during the 'sensitive period'.

A primary purpose of treating childhood visual disorders is reduction of the incidence and severity of amblyopia. This is a review of the overall results of treating an unselected sample of children. Although limited in content, they clearly point to the need for a fundamental change in our management of the problem.

Patients and methods

The children surveyed are an unselected group who attended the ophthalmic clinics of the Kettering district for the first time between 1 November 1971 and 31 October 1972. Their presenting features have already been reported (Ingram, 1977).

Amblyopia was recorded as the difference between the visual acuity of a pair of eyes when this was measured on a Linear Sheridan-Gardiner or Snellen chart. The total number of attendances for each child were also recorded on a master chart.

Results

Table 1 shows the number of children who were known to have amblyopia in each age group at the time they presented. In some cases, recorded as (?) amblyopia, there were grounds for suspecting amblyopia although the actual acuities were not known.

Table 2 shows the number of children and their amblyopia 3 or more years later. For ease of comparison they are recorded according to the age at which they presented. There are 5 more children in this Table, because 2 were 'missed' off the original charts which formed the basis for Table 1 and other publications (Ingram, 1977; Ingram et al., 1977), and 3 children were originally thought to be normal but were eventually found to have esotropia and/or amblyopia. Those who were considered too old for treatment when they presented were not re-examined, and it has been assumed, perhaps wrongly, that their vision has not altered significantly.

We knew the initial and final visual acuity of 91 of those children who attended reasonably regularly for treatment. The details of these children have been reported (Ingram et al., 1977) (Tables 1 and 2), but they are summarised in Table 3.

Discussion

Chavasse (1932) said: 'I think the time has come for us to admit, to ourselves at all events, that the treatment of these cases is, in the bulk, unsatisfactory'. He was talking about squint, but the same could also be said about our treatment of amblyopia. A large number of outpatient attendances have resulted in no overall reduction in the incidence or severity of amblyopia in this district. Nobody could
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Table 2  Amblyopia 3½ years after initial presentation

<table>
<thead>
<tr>
<th>Age of presentation</th>
<th>Amblyopia:</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0</td>
<td>&lt;1</td>
</tr>
<tr>
<td>0-1</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>1-2</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>2-3</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>3-4</td>
<td>6</td>
<td>4</td>
</tr>
<tr>
<td>4-5</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>5-6</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>6-7</td>
<td>2</td>
<td>6</td>
</tr>
<tr>
<td>7-8</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>8+</td>
<td>11</td>
<td>6</td>
</tr>
<tr>
<td>Total</td>
<td>42</td>
<td>28</td>
</tr>
</tbody>
</table>

Chavasse (1932) also said: 'A satisfactory understanding of the nature of squint is of primary importance'. The animal experiments started by Hubel and Wiesel may provide this, but whether squint and amblyopia are the result of an inborn neurological abnormality or an environmental factor such as blurred vision during the sensitive period (Whitteridge, 1977) is still disputed.

The fact that these children made 1487 return attendances to the clinic is a measure of the time and money spent in the doubtful improvement of a condition that had probably been established long before any defect was identified. Clearly, there is scope here for redistribution of resources in the search for more effective management of the problem. Chavasse (1932) regarded it as 'A problem of the public health', and, if this is correct, we must ultimately aim to devise a means of prevention. Screening is regarded as the key to this. For clinicians the problem is when should we screen and what should we look for?

References


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