Pseudostrabismus: an audit

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SUMMARY 331 children presenting with pseudostrabismus were assessed retrospectively; 24% of 77 ametropes developed a true convergent squint. Only 1.65% of 243 emmetropes developed a true squint, an incidence much less than in an unselected group. A close follow-up of emmetropic children presenting with pseudostrabismus would seem to be unjustified.

A perpetual problem in ophthalmology is an outpatient load of trivia mixed with other conditions that really need skilled attention. The excessive time spent on trivial cases leads to a consideration of methods of reducing the overload. Pseudostrabismus is a field in which limitation of the supervision of attenders who would be no worse off without such supervision seems to be a promising line of investigation.

It may be said that little time is wasted in supervising children with this condition, as a surgeon may take only a minute or two to examine a co-operative child but much longer if the child is fractious. Additionally, it takes further time for the patient and his mother to get in and out of the consulting room, and when the orthoptist takes over an even more liberal period is allowed for the examination. Probably of more importance is that the time spent by the surgeon and the orthoptist at each visit is small compared with that spent by the patient and his parent or parents, together on occasions with other siblings. In the clinics from which this study derives it would be reasonable to guess that the average patient waits up to 45 minutes to be seen and may spend 2 hours or so coming and returning home.

The foregoing considerations have led to a retrieval of clinical material from routine case notes to work out figures that would show either that time is wasted in the surveillance of pseudostrabismus or that the incidence of the subsequent development of squint demanding treatment actually justifies the time spent on such patients.

The reported incidence of true squint in the general population of children varies. Worth and Chavasse (1959) gave a range of 2 to 5% quoting Thomson in Glasgow, McNeil, and MacQueen and

Sutherland, all of whom reported on varying incidences ranging from 2.7% to 7.2% in groups of children living in Scotland. Pratt-Johnson and Lunn (1967) in Canada found an incidence of 4.5% of 6-year-olds, and Graham (1974) in a more recent study conducted by trained observers in Cardiff found an incidence of 5.6%. An estimate of the incidence of squint in the West Sussex Area whence the present study derives is 3.9%, but it is thought that there are an additional 1 to 2% of affected children who had squints that have been controlled. This brings the total figure up to about 5.5%, which is near the national norm.

Of new patients presenting with convergent squint in our orthoptic departments during the calendar years 1975 and 1976 62.5% showed no sign of a squint.

Patients and methods

This retrospective survey concerns 331 patients in whom the criteria for inclusion were: (1) A presenting history of convergent squint, or just squint, but not divergent squint; (2) no evidence of true squint on initial examination; (3) a follow-up of either (i) one year—71 cases; or (ii) to a time when a final orthoptic report including the visual acuity of each eye could be completed—260 cases.

Refractive errors are an important aspect of convergent squints and were tested after giving atropine ointment. In this study a refractive error is defined as one of +1.50 D or more in any meridian of the more ametropic eye. Contrariwise, emmetropia is +1.50 D or less in any meridian in the more ametropic eye. The overlap is deliberate to emphasise the arbitrariness of the level of error chosen. 0.50 D was deducted from the retinoscopy in respect of the cycloplegia and 1.00 D or more if appropriate for the working distance—i.e., 1.50 D—a working distance of 1 metre being

Table 1 *Pseudostrabismus: incidence of*

<i>Squint</i> 23/331	<i>Ametropia</i> 77/320	<i>Squint + ametropia</i> 19/320
6.9%	24%	5.94%

Table 2 *Pseudostrabismus: incidence of squints*

<i>In ametropes</i> 19/77	<i>In emmetropes</i> 4/243
24%	1.65%

assumed. With small children the working distance would be less. Various figures for the incidence of refractive errors have been reported, but authors are not always careful to define what they mean by the term. Refractive errors suggest a piece of string if not a piece of elastic—how much or how long?—and our figure which takes into account errors likely to be pertinent to convergent squint is a good criterion for the comparative purposes of this study. There were only 2 children with myopia in the whole group.

Results

The age at which the children were first seen varied from 2 months to 5 years. A family history was deemed to be positive if any relative, however distant, was said to be affected by a squint. Of 284 cases in which information was available 113 (39.8%) had a positive family history. Of 54 patients with refractive errors 30 (55.6%) had a positive family history. Of 230 without refractive errors 83 (36.1%) and of those 17 cases in whom a squint was subsequently confirmed 12 (70.6%) had a positive family history. Suggestive though they may be, the figures are insufficient to be statistically significant.

There are too many positives to make the family history helpful in cases of pseudostrabismus.

Of the 321 cases only 23 were found to have a convergent squint or phoria on follow-up. These figures are illustrated by Table 1. However, the really interesting figures are presented in Table 2. Of emmetropes with pseudostrabismus only 4 of 243, that is 1.65% subsequently developed squint—a figure much less than the average incidence in a non-selected group of children.

Discussion

The above findings indicate that we can manage patients referred as convergent squints and who on initial examination are thought to have pseudostrabismus (that is over 60% of them) as follows: (1) Refract them; (2) discharge the emmetropes; (3) follow-up the ametropes. Thus we can save 243/320, that is, 76% of patient visits, and a colossal amount of parent time.

The more cautious ophthalmic surgeons may suggest to the parents that they bring their emmetropic child for a vision test at the age of 4 years.

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