With this issue, the Journal of Pediatric Ophthalmology & Strabismus inaugurates a new section. Our purpose is to provide a forum for presentation and exchange of viewpoints, concerning our subspecialty, which are important but may not lend themselves to formal presentation of a scientific paper.

Several times during the year, guest experts will be invited to discuss a particular topic.

The nature of this section implies that definitive data and Supreme Court “legal” documentation are probably not available at this time to solve the particular problem. It is hoped that authors will “let their hair down” and say exactly what they do in their practice with these particularly perplexing issues.

We began with the classic “controversy” in pediatric ophthalmology — the timing of surgery in congenital esotropia. We are fortunate to have two distinguished experts and their presentations are clear and thought-provoking. As an added bonus, we are able to gain some insight into the European thinking about strabismus.

Suggestions for future topics are encouraged.

A.L.R.

The Optimum Time for Surgical Alignment in Congenital Esotropia

Joseph Lang, M.D.

To begin with, I would like, as suggested by the editor, to say exactly what I do in my practice.

In patients with congenital esotropia, I usually operate at the age of two and a half years. I perform a bilateral medial rectus recession, sometimes a unilateral recession-recession, sometimes an operation on three horizontal rectus muscles with or without the obliques.

There is one occasion when I operate earlier, namely, in cases of deep amblyopia of one eye, not responding to occlusion; even after prolonged occlusion, the amblyopic eye is in a convergent position. I then operate on the convergent eye by a resection-recession procedure followed immediately by occlusion of the fixating eye.

Otherwise, I am not rigidly restricted to an operation at two and a half years of age. When parents ask for earlier or for later surgery, I do so.

What are the reasons for my choice of time?

For the ophthalmologist not familiar with strabismus treatment on the European Continent, I would like to remind them that some 15 years ago, it was the policy to delay surgery until the orthoptic age, which means until the age of four — five years, as reflected in the Transactions of the First International Strabismus Symposium in 1966 in Giessen. Excellent results were reported.

Nowadays, the tendency toward very early treatment has begun, be it with a fadenoperation or by nasal sectors. And, again, excellent results are reported; with sectors, even better results than with surgery!

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Since my results with orthoptic treatment were not satisfactory at that time, I did not feel it necessary to wait until the orthoptic age.

There are several important points regarding the timing of operation: surgery should be done before a child suffers from other children’s teasing because he squints. This is usually not the case before age two and a half.

There is a minor but similar point: parents should not suffer too much from the presence of squint in their children. In my practice, parents usually are very sensible and do not insist on early surgery based on this reason. As a rule, they prefer to wait until a certain age since they, right or wrong, feel that surgery is tolerated better at a later age.

There is a last point. When every ophthalmologist operates very early, then the surgeon who delays the operation until age two and a half, will, sooner or later, have no congenital strabismus to operate on: This may be the case in other areas, but fortunately not in mine!

Why do I not usually operate before age two and a half?

(1) I have been very interested in the congenital squint syndrome, which is characterized by dissociated vertical divergence, latent nystagmus, exocylorotation of the non-fixing eye, anomalous head posture, etc. The angle of squint is not stable during the examination and even less during growth. I have seen patients go spontaneously from esotropia to exotropia.

We do not know enough of the pathogenesis of this syndrome. My hypothesis is that there is a predominance of the extra-geniculostriate over the geniculostriate visual system. 2

(2) There is also the problem of glasses. My policy in congenital squint is not to give glasses at an early age, except for high refractive errors. In infants with alternating strabismus, I wait and watch. In monolateral strabismus, I strive for alternation by patching and/or atropinization. I tell the parents that after surgery, children have to wear glasses, and I install alternate calibrated occlusion with graded density filters (sneak out occlusion) until the age of 10 years, which means until a child can read fluently with each eye. I am afraid of those hidden reading-amblyopias, where a child is fairly good in distinguishing optotypes at distance even with the non-dominant eye but has serious problems in reading with that eye.

(3) Now we come to the problem of binocular vision. It is claimed that the earlier surgical alignment is performed, the better the stereopsis result.

The view of Chavasse that one has to straighten the eyes at a very young age in order to have normal binocularity develop was worth trying 50 years ago, but presently, almost everybody agrees that these patients end up with a microtropia or monofixation syndrome.

In studies of primary and consecutive microtropias, I have learned that patients with a small angle usually do not alternate but are monolateral. Therefore, there is a danger of amblyopia which, in early aligned patients, may be greater as the parents are satisfied by the cosmetic result and do not care about amblyopia. I have seen several such cases, even when the parents are physicians.

One can not pass by the very interesting and industrious study by Malcolm Ing. 3 He states that patients aligned after 24 months of age demonstrated a significantly lower percentage with evidence for binocularity (P<.001).

Since eight of my patients are included in his study, I feel somewhat authorized to express my view.

The methods of stereopsis examination are not yet satisfactory. On one side, stereopsis with random dots has not been tested. I have seen that random dot stereopsis is much more sensitive than contour stereopsis and, as shown in anisometric versus microtropic amblyopia, really divides orthotropes from microtropes.

On the other hand, there is, in daily life, very useful stereopsis which is not shown by the Titmus test, but which can be demonstrated by the two-pencil test. So patient No. 106 in Ing’s study, operated on at the age of 6.7 years (the father resisted surgery that long), showed a good two-pencil test under binocular conditions, but failed when the deviating eye was covered. (This was demonstrated by a movie in my Costenbader lecture in 1982.) I am sure that some more elaborate device than the two-pencil test will, in the near future, clarify this question.

The four different age groups in Ing’s study are of different sizes and what is more important, are a selection of best results out of an unknown number of patients, the criterion being a residual deviation of less than 10 prism diopters. Clinically speaking, a selection of the best cases out of an unknown number of cases operated upon can hardly be significant.

The most important point is that as many children as possible reach good monocular and binocular vision by as few operations as possible, and not that some of them attain excellent results whereas an unknown number of others may end up with amblyopia and consecutive divergence.

I feel that the question of best time of surgery depends very much on the temperament of the ophthalmologist. On one side of the spectrum, you find surgeons who prefer to operate even if it is not absolutely necessary. On the other side, there are those who prefer to wait and see instead of doing something unnecessary. Most, of course, are somewhere in between.

For me, an acute, non-accommodative squint starting at the age of three is almost a surgical emergency in order to restore pre-existing binocularity; this is not the case in a congenital squint. 4 As long as we do not know more about congenital strabismus and have better examination techniques, the question is still unsettled.

References