Conclusion

I have used graded "Press-On" transparencies for 12 months, and 6/24 "Con-Tact" for at least 4 years. Transparencies have been especially of value in all adult work, and when used post-operatively. By encouraging the failing eye, a transparency gives the patient comfort with good appearance, and a firm hold on binocular vision which he retains when use of the transparency is reduced and finally abandoned.

For allowing me to use these cases and for their advice and interest, my thanks go to Dr. Graeme Reedshaw and Dr. John Apel.

REVERSAL AMBLYOPIA

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Presented in Sydney, 1971

This paper was prompted by six cases of reversal amblyopia seen in the past year. In each of these, fixation of the originally fixing eye became eccentric after a period of occlusion.

This condition was first described as occlusion amblyopia by Costenbader (1958) and later by Von Noorden (1964, 1966, and 1970) and Burian (1966). H.M. Goodier (1966) reported twenty one cases of reversed amblyopia, all over the age of 3 years. The average age of patients at the time of reversal was 4½ years.

G. Roper-Hall (1970) saw eight children, all under the age of 2 years and 8 months, the average age of change in amblyopia being 2 years 4 months. Children of this age are perhaps too young for accurate assessment of visual acuity although not too young for visuscope examination.

The six children here reported four girls and two boys were all between the ages of 3 years 3 months and 4 years 7 months. Onset of squint was at birth or during the first year. Binocular vision was not present in any one of these cases. Five of the six patients were right handed and had a left convergent squint, the sixth case was left handed and had a right convergent squint.

All children were fairly co-operative and we were able to obtain accurate visual results. The average age at the time of reversal of amblyopia was 4 years 3 months. The length of time for which fixing eye occlusion was ordered is not necessarily significant. One child had 8 months of fixing eye occlusion, but this was not worn constantly. The average amount of constant fixing eye occlusion given before reversal took place was 2½ months. (See Table)

There was no indication that there would be any change in the state of fixation; on all visits prior to the change in fixation, visuscope observations of the originally fixing eye were central and steady. There was rapid change over to eccentric fixation with loss of vision. All patients were seen at intervals of 2 months or less.

TABLE OF FINDINGS BEFORE AND AFTER REVERSAL OF AMBLYOPIA

Case No.	Age of onset months	Age at first occlusion yrs mths	Refractive Error R.E. L.E.	At first visit: Deviation	Visoscope	Visual acuity	Occlusion up to reversal (months)	On reversal: Visuscope	Visual acuity
1	9	2 : 6	+2.00 +1.00 / +1.00	L.C.S.16°	R central L paracaecal	R 6/6 L light perceptn	Inverse 2 Fixing eye 2	R paracaecal L parafoveal to central	R 6/60 L/3/9
2	12	4 : 4	+6.00 +6.00	R.C.S.15°	R paramacular L central	R 6/24 L 6/12	Fixing eye 3½	R central L paramacular nasal	R 6/12 L 6/36
3	13	4 : 6	+2.50 +2.00 / +0.75 +1.50	L.C.S.10°	R central L paramac nasal	R 6/9 L 6/36	Fixing eye 4	R parafoveal sup.nasal L central	R 6/18 L 6/6
4	10	3 : 9	+3.00 +2.50 / +1.00 +0.75	L.C.S. 4°	R central L parafov sup.nasal	R 3/9 L 3/12	Fixing eye ½ day 2 constant 2	R parafoveal nasal L central	R 6/24 L 6/9
5	6	3 : 6	+3.50 +4.00 / +1.00	L.C.S. 7°	R central L paramac nasal	R 3/6 L 3/36	Inverse 3 Fixing eye 2½	R paracaecal L central	R 6/60 L 6/12
6	10	3 : 10	+2.25 +2.25 / +0.25 +0.50	L.C.S.11°	R central L paramac to paracaec	R 3/9 L 3/60	Fixing eye 8	R paramac L central unsteady	R 6/36 L 6/9

Remarks

Case 1 Had surgery in May, 1970, when the visual acuity was equal. The result was cosmetically good. However the left visual acuity deteriorated to 3/60 post-operatively.

Case 2 Is now using a small angle abnormal retinal correspondence and has equal vision.

Case 3 Has central fixation in both eyes. After surgery performed in June 1970, the patient was cosmetically excellent. The right vision has deteriorated slightly and there is a residual right convergent squint.

Case 4 Now has central unsteady fixation in each eye with equal vision at 6/12. She continues to have part time alternate occlusion and is cosmetically good.

Case 5 Is unreliable, although is now fixing with the right eye, and on the visuscope has unsteady central fixation in each eye. Is cosmetically very good. Alternate occlusion for half a day is being carried out.

Case 6 Has central fixation either eye and continues to have alternate occlusion for half a day. Visual acuity is 6/18 each eye and is cosmetically fair.

Treatment

Alternate occlusion was given for two weeks in all cases. Four cases had fixing eye occlusion for two days and amblyopic eye occlusion for one day. This resulted in a return to the original fixation pattern. In the other two cases occlusion was alternated each half day for a fortnight. The result was central unsteady fixation in each eye.

Two cases have recently had surgery for cosmetic purposes.

In Case 1, as stated previously, the visual acuity in the originally amblyopic eye has deteriorated. Visuscope fixation in the left eye is paramacular nasal and unsteady. As co-operation with occlusion was not good, atropine to the right eye was given as well as right lens occlusion for half a day because it was felt inadvisable to give constant occlusion so soon after surgery. Case 3 had central fixation in both eyes post-operatively with equal vision and is cosmetically very good.

Conclusion

It is hard to form a theory for the cause of reversal amblyopia. However, it is interesting to note that the average age at the time of reversal was four years three months and this can be compared with those cases of H.M. Goodier where reversal occurred at the age of four years and six months. One could assume that this is an unstable period in the development of the fixation reflexes. As mentioned earlier there is no significant anisometropia. It is felt that once the visual acuity of the amblyopic eye has improved, it may gain dominance over the originally fixing eye. As we can see from the tables this does not continue, as the originally fixing eye quickly regains dominance after occlusion.

As these patients were in no case left for longer than two months between visits, it appears that it is wise to see young patients more frequently.

The author would like to thank those at the Children's Hospital who gave help in writing this paper.

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