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Research Article

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VERTICAL INCOMITANCE FOLLOWING SQUINT SURGERY: WAY TO PREVENTION

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ABSTRACT

Aim: Vertical incomitance can occur after muscle surgery, reasons remain unknown. In a prospective study, incidence and treatment was analysed**. Material and methods:** 40 consecutive esotropes where uniocular recession and resection was done were included in this study. First 20 had standard recession –resection and the rest 20 had hang back medial rectus recession along with resection andsplitting of lateral rectus resection in the same eye. **Results:** 4 cases in the first group and none in the other had postoperative vertical deviation. **Conclusion:** Splitting of maximally resected lateral rectus stabilizes the eyeball and prevents postoperative hyper deviation in large esotropes without any complication.

KEYWORDS: Vertical incomitance, resection andsplitting, uniocular recession.

INTRODUCTION

Vertical incomitance after surgical correction of large angle esotropia is a known complication.[1] It mostly occurs after unilateral maximal recession and resection of horizontal muscle and the commonest manifestation is upward drifting of the operated eye. The aetiopathogenesis is still unknown, though two hypotheses have been postulated, firstly it could be due to alteration of insertion site and secondly it may be pre-existing but overlooked.[2] However, looking up into the literature much could not be found, though this complication has been a complication of few of our surgeries. Our aim of this study was to evaluate the incidence and effect of surgical modifications on this "consecutive hypertropia".

MATERIAL AND METHODS

40 consecutive cases of large angle esotropia (more than 30 degrees deviation) attending our OPD were included in this study. All the cases had routine ophthalmic examinations along with detailed orthoptic examinations. First twenty cases had undergone standard monocular medial rectus rectus recession of maximum 5.5 mm and resection of lateral rectus (max 10 mm) depending on the angle of deviation. Another 20 cases had maximum recession – resection alongwith splitting of the lateral rectus muscle avoiding the muscular vessels. Two slips of the resected muscle are sutured to the insertion site with 6/0 Vicryl. Postoperative follow-up was carried out till 1 year.

RESULTS

There were altogether 40 cases. They were comparable to each other as far as the age; sex and visual status are concerned. Mean age was 13.4 years. Male: female ratio was 1:2.60 % of these squint cases had amblyopia with best spectacle corrected visual acuity <6/18.4 cases from the first group i.e. maximum monocular recession and re cession had vertical deviation (20 –30 PD). Their axial length was below 22.0 mm. No cases of the second group i.e. muscle splitting group. However, this group had a mean age of 15 years .In the first group the mean age was 11.5 years and mean axial length was 22.8 mm.

Illustrations

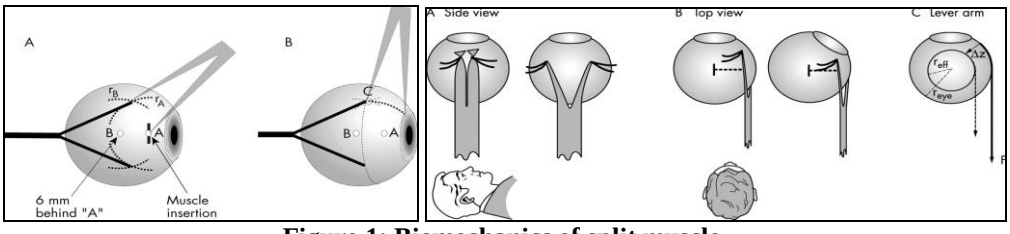

Figure 1: Biomechanics of split muscle.

Figure 2: Lateral rectus resection and Y-split.

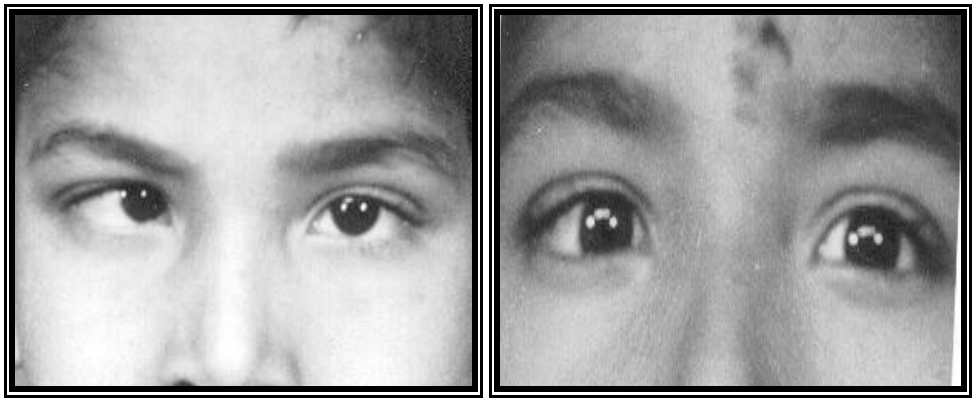

Figure 3: Y-split group: no consecutive hyper deviation.

Figure 4: Uniocular Max rec-res: consecutive hypertropia.

DISCUSSION

This study has shown that consecutive hypertropia can sometime complicate surgery for esotropia when done on single eye. Muscle splitting (maximally resected lateral rectus) can prevent this without jeopardizing the muscular vessels. Muscle splitting though considered as an weakening procedure biomechanics explains the stabilising effect on globe.[4] However, the cause of this hyper deviation could not be determined in this study. Possibility of faulty insertion was ruled out as the insertion site was marked before disinserting the muscle. The possible aetiopathogenesis could be: Maximally resected lateral rectus becomes tight and slips over the relatively smaller globe in these cases (22mm), as in cases of Duane's syndromes.[3] All had a smaller globe and slightly higher age; so, secondary changes in the soft tissues along with smaller globe could be predisposing factor. Pulley system as described recently could have some role in this type of secondary deviation[5] (Illustrations). This needs further investigations. This is prevented by this modification of muscle resection. Bifurcating maximally resected and suturing one slip to the globe above its original insertion and the other slip

below prevent the slippage of the globe thus preventing consecutive hypertropia.

CONCLUSIONS

Maximum amount of monocular recession and resection causes consecutivehypertropia. The reason may be smaller eyball with secondary soft tissue changes giving rise alteration of pulley system. This complication can be prevented by bifurcating maximally resected muscle and reattaching upper slip above the upper margin of muscle insertion and the inferior slip to the lower margin of insertion. This in turn contrls the slippage of globe thus preventing consecutive hypertropia in large amount of uniocular recession -resection procedure. This procedure may be functionally analogous to prevention of upshoot in Duanne's syndrome by Y split.

REFERENCES

1. GK von Noorden: Binocular vision and ocular motility.4th edition. Mosby Co., 1990; 316.
2. Renee Richards: A text and atlas of strabismus surgery. First edition. Chapman and Hall. London, 1991; 7.
3. Jampolsky A .Unusual eye movements in alert humans with attached and detached eye muscles. In Ravault AP and Lenk M (eds) Transactions of the fifth International Orthoptic Congress. Lyon. LIPS, 1984; 245-8.
4. T Haslwanter, R Hoerantner, S Priglinger. Reduction of ocular muscle power by splitting of the rectus muscle I: Biomechanics. Br J Ophthalmol, 2004; 88: 1403–1408
5. Demer JL, Oh SY, Poukens V. Evidence for active control of rectus extraocular muscle pulleys. Invest Ophthalmol Vis Sci, 2000; 41: 1280–1290.