Summary and Conclusion

Twenty eyes of twenty patients with horizontal strabismus were selected from patients attending to the out-patient clinic at the department of ophthalmology Benha faculty of medicine during the period form Jan 2004 to
Dec. 2004.

Cases with diseases affecting corneal topography were excluded from the study. Computer assisted analysis of the corneal topography using OCTS was performed.

The age of them ranged from 8 to 28 years with a mean age 18.4 ± 6.31 SD.

6 cases presented by exotropia while 14 cases presented by esortopia.

According surgical procedures, they were classified into 3 groups:-

Group (A):-

Included 12 cases underwent double muscle surgery (resection – recession procedure) and further subdivided into two sub groups:

(A_1) : included 6 cases underwent medial rectus. recession and lateral rectus resection.

(A_2) : included 6 cases underwent medial rectus resection and lateral rectus recession

Group (B):-

Include six cases underwent lateral recture resection.

Group (C):-

Included two cases underwent medial rectus recession.

The mean sim K astigmatism and its axis and topographic changas in both central zone and peripheral areas opposite the recti muscles were studied with OCTS preoperative, one week, one month and two months postoperatively.

In group (A_1):

There was insignificant increase in with the rule astigmatism in the first week that regressed after one and two months.

There was significant steeping both in the central zone and peripheral area opposite the resected lateral rectus muscle while there was significant flattening opposite the recessed medial retus muscle at one week postoperatively. These changes regressed toward their preoperative colour map after one and two months.

In group (A_2):

There was insignificant increase in with the rule astigmatism in the first week that regressed after one and two months to near the preoperative level.

There was significant steeping both in the central zone and peripheral area opposite the resected medial rectus muscle while there was significant flattening opposite the recessed lateral retus muscle one week postoperatively. These changes regressed toward their preoperative colour map after one and two months.

In group (B):

There was insignificant increase in with the rule astigmatism one week postoperatively then increasd significantly at one month postoperatively and finally regressed after two month postoperatively to near the preoperative level.

There was significant steeping both in central area and in the area opposite the resected lateral rectus muscle while there was flattening in the area opposite the medial rectus muscle one week postoperatively and these changes showed regressions after one and two month postoperatively.

In group (C):

There was increase in against the rule astigmatism one week postoperatively that regressed one month postoperatively and after two months it is returned to near its preoperative level.

There was flattening both in central zone and peripheral area opposite the recessed medial rectus muscle while there was steeping opposite the lateral muscle and these changes regressed after one and two months postoperatively to near the preoperative colour map.

Conclusion:

In double muscle surgery (i.e M.R. and L.R. recession resection) there was central zone steeping that regressed till two months postoperatively where the corneal colour map returned back to its preoperative parameters.

- Single muscle recession leads to flattening of the corneal curvature, while single muscle resection leads to steeping in the central zone.
- The topographic effect of horizontal extraocular muscle surgery is expected.
- Induced astigmatic changes may be present, they may be small and transitory or it may persist unfortunately in few cases. So, strabismic surgery patients should be informed preoperatively about the possibility of reduced visual acuity in the surgically treated eye.
- Refraction and glasses should be verified after surgery to adjust for the changes in the corneal shape that could occur.