The Reservoir Restoration Procedure for Conjunctivochalasis (CCh) induced Dry Eye that:

- Resolves tissue interference with the tear meniscus and tear clearance
- Reestablishes the inferior fornix, restoring the anatomical tear reservoir which supplies the tear meniscus
- Produces a smooth and comfortable ocular surface

Overview

Most eye care practices have patients with recalcitrant dry eye symptoms, for whom maximum medical therapy has produced little to no improvement of their symptoms. These are very unhappy patients who have often been to several practices looking for the right doctor who has the expertise to help them get some relief. A large number of these patients have conjunctivochalasis. Some have both CCh and aqueous tear deficiency (ATD). If they have both CCh and ATD you will not be able to successfully treat their ATD until you resolve their CCh.

Conjunctivochalasis (CCh) is a mechanical problem caused by the degeneration of Tenon’s Capsule due to high matrix metalloproteinase activity. The unhealthy Tenon’s causes the conjunctiva to loosen and create folds that can interfere with the tear meniscus, block the punctum preventing tear clearance and occupy the fornix diminishing it’s volume and ability to adequately replenish the tear meniscus. Over time the loose conjunctiva contracts further shortening the fornix. Often accompanying CCh will be orbital fat that has prolapsed under the conjunctiva. Procedures that eliminate the folds by shrinking or removing some of the conjunctiva may offer some improvement of symptoms but run the risk of further diminishing the tear reservoir and do little to prevent fat prolapse.
Surgical Steps

1. Apply 2% lidocaine gel
2. Place a 7/0 Vicryl corneal traction suture
3. Inject (2%) lidocaine with (1/10,000) Epinephrine sub-conjunctiva in the area to be dissected.
4. Start your incision with a relaxing incision at the outside edge of the dissection (Fig. 1)
5. Begin a peritomy 1-2mm from limbus taking care to preserve the limbal stem cells (Fig. 2, 2a)
6. Trim about 1-2mm of conjunctiva (enough to recess it’s edge into the fornix) (Fig. 3, 3a, 3b)
7. Aggressively dissect and remove all abnormal Tenon’s fascia from the episcleral surface (Fig. 4, 4a, 4b)
8. Cauterize prolapsed orbital fat to further deepen the fornix (Fig. 5)
9. Cauterize the leading edge of Tenon's and edge of conjunctiva (Fig. 6, 6a)

10. From either an AmnioGraft® AG-2025 (2.5 x 2.0 cm) or Ag-3535 (3.5 x 3.5 cm.) (Fig 7, 8), cut and glue* down a small piece of AmnioGraft® about (1.5 cm x 1.0) cm to cover the area of the rectus muscle insertion (This will replace Tenon's and prevent muscle restriction). (Fig 9, 9a, 9b, 9c, 9d, 9e, 9f, 9g, 9h)

11. Cut and glue down a larger piece of AmnioGraft® to cover the entire surgical site. (Fig. 10, 10a, 10b, 10c, 10d, 10e)
12. Make sure edges other than in fornix are covered by 1mm of conjunctiva
13. Glue down the small flap of conjunctiva at limbus
14. Check edges of conjunctiva to be sure they are glued down
15. Remove all excess glue
16. Remove traction suture
17. Place bandage lens on cornea

*When gluing down AmnioGraft®
- Less glue is better
  Be sure to push excess glue away from fornix