A False-Positive Seidel Test After Ahmed Valve Insertion

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Abstract. An 80-year-old monocular man with longstanding open angle glaucoma underwent successful filtering surgery in his sighted right eye in 1980. He subsequently developed a cataract and had an uncomplicated clear cornea phacoemulsification with posterior chamber intraocular lens in 1996. Post-operatively, the filtration bleb remained very avascular but shallowed; the intraocular pressure increased and remained uncontrolled despite maximally tolerated medical therapy. His vision improved to 6/7.5 and automated perimetry revealed a less than 5º small central island of vision. His left eye was phthisical with no light perception. [Ophthalmic Surg Lasers 1999;30:313-314.]

CASE REPORT

Two months after his cataract extraction, he was referred for glaucoma consultation. The filtering bleb was needled from a superior entry with a 27 gauge needle. The intraocular pressure decreased transiently into the high teens, but then returned to the mid twenties. Seidel tests 2 days and 5 days after needling were negative.

An Ahmed implant with pericardial graft was then inserted. The conjunctival incision was made 6 mm posterior to the limbus in the superotemporal quadrant to avoid the previous filtering bleb which extended superiorly from eleven to two o’clock. The implant was secured 10 mm posterior to the limbus in the superotemporal quadrant. Prior to inserting the tube into the anterior chamber, the tube was partially constricted by placing a 6-0 nylon stent suture into the tube, constricting the tube with a 7-0 Vicryl suture and then removing the nylon stent. The tube was then inserted into the anterior chamber at 10:30 through a 22 gauge paracentesis tract. A pericardial graft was placed over the tube and the conjunctival wound was closed with a running 9-0 nylon suture (Figure 1A). The wound was Seidel negative at the conclusion of the case. No antimetabolites were used during the surgery.

On post-op day #3 while routinely testing the wound for leakage, two seemingly Seidel positive areas 4 mm posterior to the suture line and overlying the filtering plate of the Ahmed implant were noted. Over the next two weeks, the patient was reported to have from one to three Seidel positive areas on the filtering bleb (Figure 1B). These Seidel positive areas were unexpected since the intraocular pressure was in the mid-teens and the anterior chamber was deep.

It soon became apparent that the sites of leakage were actually the ductule orifices of the palpebral lobe of the lacrimal gland and did not represent bleb leaks.
DISCUSSION

The Seidel test was first described in 1921. It demonstrated passage of aqueous through the conjunctiva from filtering blebs after successful Elliot trephination procedures.\(^1\) A positive Seidel test indicates a conjunctival wound leak by the streaming of clear aqueous into the fluorescein-stained tear film.

When inserting glaucoma drainage implants, the conjunctival incision is often made at the limbus. There is usually little reason to perform a Seidel test over the posteriorly located filtering blebs since they lie far from the incision site. In this case, the conjunctival incision was made closer to the plate location, six mm posterior to the limbus, to avoid a marginally functioning superiorly located filtration bleb. While testing the conjunctival wound, the entire quadrant was painted with fluorescein. When the apparent Seidel positive areas were noted, there was concern that intraoperative manipulation of scarred conjunctiva may have led to the leakage sites. Since the valved Ahmed implant is not occluded when it is inserted, it was thought that perhaps the aqueous flow in the immediate post-operative period may have exacerbated any leaks. The post-operative intraocular pressure in the mid-teens and the deep anterior chamber, however, did not support the findings of a significant wound leak.

Anatomy, however, provided the answer. The leakage we detected was actually the normal tear drainage from the palpebral lobe of the lacrimal gland. The anterior border of the palpebral lobe of the lacrimal gland lies high in the superotemporal conjunctival fornix.\(^2\) It can be manually prolapsed and seen through the conjunctiva when the upper eyelid is elevated or everted.\(^3\) In this case, the Ahmed plate was beneath the palpebral lobe of the lacrimal gland and the areas thought to be Seidel positive were actually the orifices of the lacrimal gland ductules. This false positive Seidel was not a consequence of the surgical intervention; these ductules can be identified with fluorescein in normal individuals (Figure 2).

In this case, Seidel testing in the superotemporal quadrant was performed after Ahmed valve placement with a limbus based flap. Seidel testing in the superotemporal quadrant may also be performed after trauma, trabeculectomy or other surgical interventions. It is important to identify that the false positive Seidel is a normal finding and not a marker of wound leak. And so the case of the “leaking lacrimal gland” was solved.

REFERENCES