Many steps are the same for Ahmed and Baerveldt tube placement. However, there are some differences. This table shows the steps for each procedure and highlights the key differences between them.

University of Iowa Health Care
Department of Ophthalmology and Visual Sciences

Ahmed		Baerveldt		Comments/Explanation
1. Mark superior and temporal limbus prior to traction suture	00:15	1. Mark superior and temporal limbus prior to traction suture	00:12	This helps with orientation throughout the case.
2. Place limbal traction suture	00:21	2. Place limbal traction suture	00:16	
a. Create loop and secure inferiorly with hemostat to exposure superotemporal quadrant	00:29	a. Create loop and secure inferiorly with hemostat to exposure superotemporal quadrant	00:27	The suture should be deep (~80%) but not full thickness.
3. Position corneal shield	00:40	3. Position corneal shield	00:38	
4. Incise conjunctiva starting with either temporal or superior radial incisions	00:45	4. Incise conjunctiva starting with either temporal or superior radial incisions	00:44	
a. Undermine the conjunctiva with blunt dissection, and extend incision along limbus	00:56	a. Undermine the conjunctiva with blunt dissection, and extend incision along limbus	00:54	This is done with a reverse scissoring technique to avoid damaging the rectus muscles.
b. Second radial incision to mobilize the conjunctiva	01:12	b. Second radial incision to mobilize the conjunctiva	01:08	
5. Use Steven's scissors to create a large pocket for the tube	01:47	5. Use Steven's scissors to create a large pocket for the tube	01:19	
6. Scleral electrocautery for hemostasis	01:58	6. Scleral electrocautery for hemostasis	01:30	
7. Identify and mark the insertion of the superior and lateral rectus muscles	02:05	7. Identify and mark the insertion of the superior and lateral rectus muscles	01:39	
8. Prime tube with BSS	02:23	8. Flush tube with BSS to ensure patency	01:59	Ahmed must be primed with BSS or it will not work. For consistency, we also like to flush the Baerveldt tube.
		9. Tie off Baerveldt tube	02:07	Baerveldt must be tied off since there is no valve in it to restrict flow. It is designed to have a delayed onset (6-8 weeks).
		a. Pull first suture throw tight	02:16	
		b. Confirm first suture throw is watertight	02:21	
		c. Lock knot by completing the remaining 3 throws	02:27	
		d. Final check to ensure knot is watertight	02:41	
9. Mark 10 mm from limbus	02:34	10. Mark 10 mm from limbus	02:47	If placing a tube inferonasally, the plate will be positioned 8 mm from the limbus, rather than 10 mm.
10. Position Ahmed between superior and lateral rectus muscles	02:43	11. Place Baerveldt under superior and lateral rectus muscles	02:54	Baerveldt is larger and must be placed under the extraocular muscles. Ahmed is smaller and can fit between the extraocular muscles.
		a. Visualize correct placement under superior and lateral rectus muscles	03:13	
11. Suture Ahmed in place	02:49	12. Suture Baerveldt in place	03:21	
a. Suture is a partial thickness scleral bite	02:57	a. Suture is a partial thickness scleral bite	03:27	To have the most control, it is helpful to choke up on the needle. You should never lose sight of the needle within the scleral pass.
b. Bury knots to decrease risk of erosion	03:18	b. Bury knots to decrease risk of erosion	03:41	
12. Release corneal traction suture and remove shield	03:29	13. Release corneal traction suture and remove shield	03:57	
13. Cut tube to length	03:33	14. Cut tube to length	04:04	This should be trimmed bevel-up for all tubes placed in the anterior chamber or within the vitreous cavity. If placing within the sulcus, will be trimmed bevel-down.
14. Temporal paracentesis	03:40	15. Temporal paracentesis	04:12	
15. Sclerotomy	03:45	16. Sclerotomy	04:19	
a. Prepare sclerotomy by bending a 23-gauge needle (not shown)	03:45	a. Prepare for sclerotomy by bending a 23-gauge needle	04:19	
b. Perform sclerotomy with 23-gauge needle	03:45	b. Perform sclerotomy with 23-gauge needle	04:25	
16. Insert tube through sclerostomy	03:54	17. Insert tube through sclerostomy	04:35	Ultimate tube position should be snug against the iris (okay if it touches the iris).
		18. Use needle to make 3 full-thickness fenestrations (optional)	04:43	Since the Baerveldt has a delayed opening, we prefer to make fenestrations in the tube to allow for some early pressure lowering (optional).
17. Corneal patch graft	04:01	19. Corneal patch graft	04:53	The number of sutures to secure the corneal patch graft differs in each video. In general, 2-4 sutures are used depending on the stability of the graft as determined during surgery.
a. Position corneal patch graft. Use utility scissors to trim appropriately if needed	04:01	a. Position corneal patch graft. Use utility scissors to trim appropriately	04:53	
b. Suture corneal graft into place	04:09	b. Suture corneal graft into place	05:07	
18. Use Gill knife to roughen up the surface of the limbus	04:38	20. Use Gill knife to roughen up the surface of the limbus	05:34	This is done to help with wound healing.
19. Conjunctival closure	04:51	21. Conjunctival closure	05:45	
a. Position conjunctiva for closure	04:51	a. Position conjunctiva for closure	05:45	
b. Place partial thickness scleral wing suture at limbus for conjunctival closure	05:01	b. Place partial thickness scleral wing suture at limbus for conjunctival closure	05:50	
c. Trim tail, run suture to close radial incision	05:22	c. Trim tail, run suture to close radial incision	06:19	
20. Use BSS to bring eye to physiologic pressure if necessary	06:04	22. Use BSS to bring eye to physiologic pressure if necessary	06:56	
21. Use viscoelastic to fill ~30% of anterior chamber	06:11			Since the Ahmed starts working immediately, we fill the anterior chamber with dispersive viscoelastic to decrease the risk of early hypotony.
22. Remove traction suture and finish with sub-conjunctival injection of Ancef/Decadron into inferior fornix	06:23	23. Remove traction suture and finish with sub-conjunctival injection of Ancef/Decadron into inferior fornix	07:05	Post surgical medications include moxifloxacin, prednisolone, and Maxitrol ointment. One drop of atropine is also used immediately post-operatively for Ahmed cases to reduce the risk of early hypotony.