Commentary: Intraluminal stenting of non-flow restrictive glaucoma drainage devices

Non-flow restrictive/non-valved glaucoma drainage devices are associated with higher incidence of post-operative hypotony compared to flow restrictive/valved devices. The hypotony in non-flow restrictive devices occurs due to excess aqueous outflow after dissolution of tube ligature. This complication could be transient due to inflammation, which resolves with enhanced topical steroids therapy and the hypotony eventually resolves when the bleb capsule thickens and resists outflow. However, the hypotony could be persistent with serious consequences like choroidal detachment, hypotony maculopathy, cataract formation. Persistent hypotony would need surgical intervention; several methods that have been tried include religature to the tube, stenting of the tube with 3-0 Nylon, Prolene, or Supramid sutures.

A modified technique for flow restriction also includes a combination of intraluminal tube stenting with 3-0 Supramid and external tube ligature with 6-0 vicryl. This dual mode of tube occlusion provides gradual drop in IOP even after the dissolution of external ligature. Conventionally, this
intraluminal tube is inserted by an external approach at the tube outlet present at the tube plate junction and the free end of the suture is placed in a subconjunctival pocket reaching the inferior fornix. This intraluminal stent is removed at a later time through a conjunctival nick.\[3]\n
The current article describes a modification of this dual technique, wherein the intraluminal occlusion is achieved by stenting the tube with a short Supramid suture at the tube inlet with a portion of the stent protruding into the anterior chamber.\[7\] When indicated, the intraluminal stent is removed by an anterior chamber approach through a paracentesis. The advantages of this modification are, no exteriorization of the suture into the subconjunctival space and hence avoiding conjunctival incision for suture removal, and possible leak. The disadvantage being need for a paracentesis and an intraocular intervention for stent removal though a short procedure. Even with this technique stent removal may result in hypotony which may require repeat stenting. Repeat stenting can also be performed through the anterior chamber approach rather than the conjunctival route.

Other techniques described to occlude the tube are tube ligatures (with or without stenting) by an anterior chamber approach with Prolene sutures to decrease the size of the lumen thereby decreasing the outflow rather than causing complete occlusion.\[4,6\]

While preventing hypotony is a major advantage of dual tube occlusion, intraluminal stent at the inlet of the tube may also be associated with complications like anterior migration of the suture into the AC, corneal touch with progressive endothelial loss, and infection.\[9\]

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