

# Delayed adjustable suture technique: A win-win for patient and surgeon

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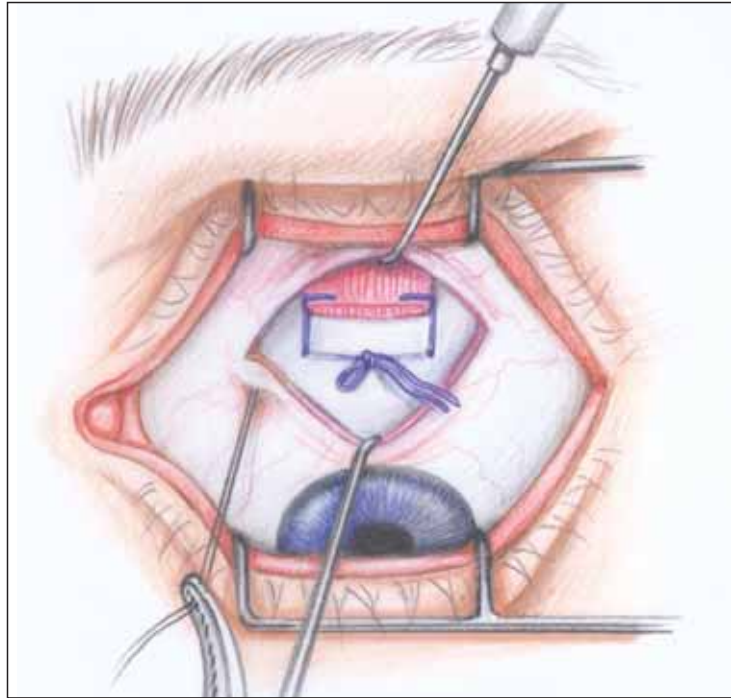
DELAYED adjustable suture techniques are a safe and effective option in the treatment of strabismus, according to Shira L. Robbins MD, speaking at the 2005 American Association for Paediatric Ophthalmology and Strabismus (AAPOS) annual meeting.

“Improving outcome and decreasing risk...as a surgeon, I’m always striving for that combination,” said Dr Robbins, UCSD Anne and Abraham Ratner Children’s Eye Center, La Jolla California.

She presented the results of a large multicentre retrospective review of the closed conjunctival delayed adjustable suture technique for complicated strabismus repair. This eye muscle surgery technique is a refinement of the traditional adjustable suture technique which allows finetuning of surgical outcomes in the immediate postoperative period.

If a patient is deemed to have a suboptimal outcome within the first two weeks after surgery, an “adjustment” is performed in the outpatient setting. The adjustment is done by re-opening the conjunctiva and moving the slip knot controlling the eye muscle position prior to complete re-attachment of the muscle to the sclera.

This study evaluated outcomes associated with 440 operations performed at four US centres from 1992 to the present, by five surgeons (Shira Robbins MD, David



Courtesy of Shira L. Robbins MD

Granet MD, Christine Burns MD, Richard Freeman MD, and H. Sprague Eustis MD).

The study population ranged in age from 10-91 years. Post-operative ocular adjustments, required in less than 27% of the cases, were performed from two hours to 14 days after surgery. Adjustments were an average of 2.5 days after surgery. Individual surgeon rates of adjustment ranged from 13.25% to 56.86%. The majority of the adjusted patients, 83.78%, experienced no diplopia in target gaze and/or had cosmetic improvement during the one to

three-month follow-up visit.

Reported complications were transient, including dellen, poor conjunctival appearance, filamentary keratitis, infection, granuloma, exposed suture, and corneal abrasion. She found one case each of corneal microperforation and retinal detachment in patients with severe predisposing ocular disease.

Dr Robbins cited several potential advantages to the adjustable suture technique including the decreased risk of infection owing to immediate conjunctival closure, decreased interference from pain and oedema

on postoperative measurements, and less physician and patient time due to the decreased need for postoperative adjustment.

“Additionally, since no patching is required the sensory and motility systems have the opportunity to work hand-in-hand for optimal binocular adaptation. This may lead to a more stable post-operative motility examination from which to decide if an adjustment is needed.”

“Technically, it’s not that different from the technique that ophthalmology surgeons are currently using. This is an enhancement and a chance to ‘fine tune’ the outcome a little later in the postoperative period,” she added.

## The historical perspective

In the 1970s, Dr Arthur Jampolsky repopularised the adjustable suture technique which enables the strabismus surgeon the opportunity to improve surgical outcomes. This approach, now considered the traditional method, includes patching the operative eye in the immediate postoperative period, followed by a mandatory second procedure for alignment adjustment within the first 24 hours.

Once the patch is removed, the patient has minimal time for binocular adaptation and the motility examination from which the decision to adjust often is affected by eye splinting, irritation, swelling, or postoperative discomfort. The exposed suture can be uncomfortable to patients.



Shira L. Robbins

Finally patients may experience vasovagal responses during the adjustment procedure.

The closed conjunctiva over adjustable suture technique, originated by Drs Saunders and O’Neil; refined by Dr Burns, and re-visited by Drs Granet and Eustis, offers delayed adjustment and increased patient comfort, without the risk of additional surgical manipulation.

“In order to gain general acceptance, a randomised trial is needed prospectively to evaluate this technique vs. the traditional adjustable suture and permanent suture approaches. Additional studies should include the permanent suture technique as a control group, while comparing adjustable suture with the delayed closed conjunctival adjustable technique,” Dr Robbins said.

Essentially by closing the conjunctiva over the new eye muscle position, this approach eliminates the need for an additional procedure – the adjustment – in many cases. A few more minutes on the operating room table may have significant benefits to patients and surgeons.

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