Slippage of the lateral rectus muscle as a complication following convergent squint surgery correction may not always be recognized. Unlike a slipped medial rectus where there is an obvious consecutive exotropia, the signs of this problem may be subtle and mistaken for an undercorrection. The entity is defined as a disinserted rectus muscle that, after reattachment to the globe, retracts posteriorly within its Tenon’s capsule while the empty capsule remains attached to the sclera. This article reports 2 cases of presumed slipped lateral rectus following previous squint correction operations for an esotropia.

CASE REPORTS

Case 1

In 1992, a 2-year-old girl presented with a right convergent squint. On examination, she was noted to have a moderate right esotropia measuring 42 prism diopters (Δ). Ocular motility examination detected a "V" pattern. On refraction, she was +4.00 hypermetropia with a corrected visual acuity of 6/9 OD and 6/6 OS. In January 1994, she underwent a right medial rectus recession of 5 mm with a right lateral rectus resection of 5 mm. Postoperatively, she had a persistent esotropia measuring 38 Δ. Since the patient’s mother was unhappy with the result, in November 1995 the child underwent a further left medial rectus recession of 4 mm with a left lateral resection of 6 mm. In 1998, she presented to our team requesting further surgery. Prism cover test demonstrated an esotropia measuring 20 Δ for near and 30 Δ for distance. Ocular movements detected an abduction deficit of the right eye with inferior oblique overaction. She subsequently underwent exploration of the right eye and, surprisingly, the lateral rectus was noted to be inserted at 11 mm from the limbus; it was also thin, tenuous, and adherent to the inferior oblique tendon. The medial rectus was inserted 10 mm from the limbus. The lateral rectus was readvanced to 7.5 mm from the limbus. Two weeks postoperatively she had a mild esotropia of 25 Δ. Although there was only a minor objective improvement in her esotropia, cosmetically both the patient and mother were happy with the result.

Case 2

In August of 1998, a 35-year-old man presented requesting improvement of a right convergent squint that he had from childhood. He had previous surgery to correct a convergent squint at 8 years of age, but unfortunately, no records were available. The squint had deteriorated over the years and he was eager for further cosmetic surgery. His refraction was −5.25/−2.00 × 120 with 6/6 corrected visual acuity OD, and −7.25 DS with 6/18 OS. Prism cover test with spectacle correction detected an esotropia measuring 40 Δ for near and 35 Δ for distance; without spectacle correction the deviation was 18 Δ near and 35 Δ for distance (Figure 1). Ocular movements showed a limitation of right eye abduction with associated widening of the palpebral fissure (Figure 2). Initially the differential diagnosis...
included a type 1 Duane's syndrome, heavy/myopic eye syndrome, and thyroid eye disease. Thyroid function tests and a CT scan of the head and orbits were both normal (Figure 3). At surgery, the medial rectus was found at 8 mm from the limbus; unexpectedly, the lateral rectus was 11 mm from the limbus. It was thin, atrophic, and adherent to the inferior oblique tendon. The lateral rectus was dissected free, resected 2 mm, and then realigned to 0.5 mm from the limbus. Six months after surgery there was a small residual esotropia measuring 20 Δ.

**DISCUSSION**

One of the most serious complications of squint surgery is the loss of one of the rectus muscles. This may occur either during the surgical procedure itself or in the immediate postoperative period when the muscle slips from its new insertion. A slipped lateral rectus muscle can present with a convergent deviation, absent abduction, and a widened palpebral fissure that enlarges on attempted abduction. Saccadic velocity and active force of the muscle are also reduced.\(^5,6\) This apparent widening of the palpebral fissure is caused by a lack of pull from the affected muscle and simultaneous relaxation of its antagonist. Characteristically, the initial surgical result is satisfactory but in a few hours a return of the squint with incomitance develops. It is hypothesized that slippage occurs when a muscle or a tendon is not included in the firm-locking sutures.\(^5\) This can occur when the needle is passed only superficially within the muscle capsule into the potential space between the capsule and tendon. In the early postoperative period, muscle function returns and fibers contract the belly of the muscle, which retracts within the anchored fibrous capsule. The lateral rectus does not completely retract within its sheath but retains attachment to the inferior oblique muscle via the intermuscular septum.

Computed tomographic scanning is the investigation method of choice to determine the exact position of muscle and presence of any attachment to the eye. Although a slipped muscle can be suspected from the clinical features, definitive diagnosis can only be made at the time of surgery. The slipped muscle may be located by first finding the nearby oblique muscle and following its attachments.

To reduce the likelihood of muscle loss, there are several surgical techniques that can be applied including careful full-thickness locking bites of each muscle suture, ensuring that sutures are not inserted into the capsule only—spreading the muscle onto a Chavasse hook assists this. Additionally, the Tenon's capsule anteriorly should be removed to facilitate visualization of the muscle.\(^2,7\) Management of the slipped muscle requires early and careful exploration. This is important because the fragile capsular attachments of an actively contracting muscle may not remain adherent to the globe for a long period, although some time must be allowed for recovery of the muscle that has undergone surgery. Additionally, if left for any period, antagonist contraction may alter the surgical outcome.\(^4\) Once the diagnosis has been suspected clinically and confirmed surgically, repair is accomplished by resecting the empty capsule and advancing the true tendon to or toward the original insertion.
CONCLUSION

Slippage of the lateral rectus following surgery is often an occult complication. It results in less than anticipated reduction in angle following resection resection surgery for esotropia. Once suspected clinically, confirmation of the diagnosis should be made with early exploratory surgery.

REFERENCES

1. Murray AD. Slipped and lost muscles and other tales of the unex-