Immediate Preoperative and Postoperative Management for Strabismus Surgery

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Moderator: Rudolph S. Wagner, MD

Wagner: Our topic today is immediate preoperative and postoperative management of patients having strabismus surgery. What is your routine practice? Do you measure them at all on the day of surgery?

Burke: I like to have a measurement within 1 month of a surgical procedure. According to one of the presentations at this meeting, that recommended time frame may have changed. If the patient has an angle that seems to be variable, then I will remeasure two or three times until stable. I don’t feel the need to measure them the day of the surgery.

Wagner: Have you ever brought a prism bar with you on the day of surgery?

Burke: No.

Friedman: I generally also measure within 1 month of surgery. I like to bring the patient back a couple of weeks before because I find that patients can be nervous and distracted on the day of surgery. Even if I brought a prism bar early in my practice, I never felt like I was getting really great measurements.

The fixation is variable, so I have stopped doing it. This morning’s presentation confirmed that when you measure probably doesn’t matter all that much.

Suh: I typically take measurements approximately 2 weeks before the surgery and then I usually have another measurement prior to that. So I would have two measurements prior to surgery. On the day of the surgery, I carry my prism bars with me. One reason is that my mentor David Guyton did that. A second reason is that one of the biggest concerns that I have is not so much the exactness of the measurements, but wrong site surgery. So I do another measurement to confirm that it is truly a hypertropia of the left eye, whether it’s esotropia or exotropia. Then I explain to the parents exactly what I am planning on doing. I show them what I just measured and it helps me to explain the procedure to the parents.

Wagner: I think that’s a good point. Using the prism bar is a really good way to emphasize that. Have you ever had a patient clearly scheduled for bilateral recessions and everything was explained in the office well, but on the day of the surgery the mother was surprised to find that you were going to operate on both eyes?

Burke: Yes. If they see the esotropia is in the right eye, they may question why we have to operate on both eyes. I explain to them about the angle, the size, and the symmetry and they’re always okay with that. Even though you’ve explained it previously in your office, you may need to go over it again just so the parents feel they understand what and why you’re doing it that way.

Wagner: What about preoperative medications? Do you use any antibiotics before surgery or maybe a sterile technique?

Friedman: For strabismus surgery, I generally don’t give any preoperative medications. My general technique is to do a really good scrub on the patients on the day of surgery, including betadine in the eye. I have not found that I’ve needed to do more than that and I try to minimize the amount of instructions and confusion that there may be prior to surgery with the patients.

Suh: I also do not premedicate any of these patients preoperatively. I check with their pediatricians and sometimes they do have...
to be premedicated, such as if they have certain heart defects or dental problems that predispose them to having infections. If the pediatricians recommend that the patient be medicated, then I support their decision. But I typically do not premedicate for routine muscle surgeries on a healthy patient.

Burke: I don’t premedicate.

Wagner: Do you put betadine in the eye?

Burke: Yes. Preoperatively and postoperatively.

Suh: Yes, 5% betadine.

Wagner: When I first started operating most surgeons were preparing around the eye but not using betadine. I think most of us realize that it’s an important part of the procedure now. How about dilating the pupils before surgery?

Friedman: I will often put phenylephrine in, not necessarily for dilation, but for hemostasis. I find that it just makes it easier, particularly when I am working with residents and the surgery may take a little longer. By the end of the case, they’re often dilated.

Burke: I find that phenylephrine 2.5% is useful. The issue is to make sure to give it at least 15 minutes before you start cutting the conjunctiva. Otherwise it really doesn’t make any difference, at least for the first eye.

Suh: I also use betadine on a routine basis.

Wagner: If you’re doing surgery with residents or if you just feel the need to take a look inside the eye at the end of the procedure, having the drops in there prior to surgery will make that easier. How about postoperative medications?

Suh: For the past 5 years, I’ve been using tetracaine. The patients wake up better and they’re less irritated. So I use a drop of tetracaine and then I use some type of steroid-antibiotic combination ointment.

Wagner: You apply that in the operating room?

Suh: Yes, right after the surgery for comfort.

Wagner: What instructions do you give them after that as far as when they’re home?

Suh: I have everything printed out. Sometimes I even have pictures of the drops and the ointment. I typically do the antibiotic drops three times a day until the bottle runs out and then I have them use the ointment that I just applied to the patient because it’s a leftover. If I don’t give it to someone, it gets thrown away. I recommend that they use it at nighttime for comfort.

Wagner: So both are a combination of steroid and antibiotic?

Suh: The drops are just straight antibiotics such as quinolones. At nighttime they use a steroid-antibiotic combination medication ointment.

Burke: At the conclusion of the surgery, I put a drop of tetracaine in the eye and then I wait approximately 20 seconds and then I use the betadine. For primary cases, I use azithromycin and then follow that by tobramycin-dexamethasone ointment. So, postoperatively at home I prescribe azithromycin in the morning and tobramycin-dexamethasone ointment at night. As Dr. Suh said, I think it’s a great lubricant if they can get it in. But for reoperations or complicated cases where I think there might be more inflammation, I use loteprednol-tobramycin three times per day and then tobramycin-dexamethasone ointment at bedtime. In both cases, they use the medications for 1 week.

Friedman: I also put a drop of tetracaine in the eye immediately and then usually either tobramycin-dexamethasone drops or ointment and I give the bottle and the tube to the parents. In our patient population, tobramycin-dexamethasone ointment is cost prohibitive, so I give them the option to use either medication three or four times a day for the first week. Then I monitor progress and sometimes stop it when the bottle runs out. I find that the combination is much easier for the parents because it combines both medications and the patients feel better quickly afterwards. It helps with compliance.

Wagner: When do you routinely see your patients postoperatively?

Friedman: I see them 1 day postoperatively. If not, definitely by postoperative day 2 and then usually about a week later. After that it depends how they’re doing. But reoperations sometimes need to come back a little more often because they’re taking medication longer. It just depends on the patient.

Burke: I trained with Joe Calhoun, who saw patients 1 month after surgery, so for the past 37 years I have been doing the same. I have them call 2 to 3 days postoperatively. Assuming everything is going as expected, I see them back in 1 month. I probably have 5% who I do see before that first month follow-up because they want me to see or they’re describing something to me on the phone that I feel the need to look at.

Suh: At 1 day postoperatively, all of my patients get a phone call from my nurse making sure that they’re okay. Typically, endophthalmitis will be apparent between 4 and 6 days. We tell them that every day the symptoms of irritation and
redness should get better, but if it worsens, they need to give us a call and we have an open-door policy so they come back. Then I typically see them in my clinic 2 weeks following the surgery.

Wagner: There can be a wide range, but as long as there is a mechanism to identify and address problems quickly I think that’s reasonable. Have any of you ever had the need to do cryosurgery for a suspected perforation?

Suh: According to the literature, the incidence of perforation during strabismus surgery varies significantly from 1% to 5%. I think it is much less than that, but it has happened to me. If I thought there was a perforation, I would look at the fundus. If I didn’t see any signs of obvious perforation, I would not do cryotherapy.

Burke: I think the incidence is much less in the hands of an experienced surgeon. Maybe it would be higher for a resident. I have never had to use cryotherapy.

Friedman: I had one case of perforation that occurred with a resident. I knew the second that the perforation happened and I looked at the eye right away. There was a drop of blood at the puncture site and I called the retina specialist. We decided to do cryotherapy, even though we both felt it might have been okay with observation. The retina specialist was convinced that the vitreous would have taken care of the perforation, but we did cryotherapy anyway just to be positive because the patient was only 2 years old.

Wagner: We have retina specialist Paul Chan sitting in with us, so I would like to hear his recommendation as to what he thinks we as pediatric ophthalmologists should do with a suspected perforation.

Chan: When I was a resident, I witnessed a case of perforation during strabismus surgery. They immediately called the retina specialist, who performed an examination with indirect ophthalmoscopy and applied cryotherapy to the perforation site. Generally speaking, I think that you’re anterior enough that a small area of cryotherapy to the site that you entered will do the trick and you may not need more than that. I don’t think that you need to put a gas bubble in the eye, and applying cryotherapy may be fine in addition to monitoring the patient postoperatively to make sure nothing else develops (eg, retinal detachment or endophthalmitis).

Wagner: It’s important to see the patient quickly, the next day perhaps. I haven’t used cryotherapy for so long that I wouldn’t know which size probe to use or how long to hold it on there. I guess my option would be to call the retina specialist from the operating room and ask him for advice or if he’s available to come in and do it.

Chan: In some institutions, you have the luxury of having a retina specialist nearby. I think it’s easier to apply cryotherapy or laser while you’re in the operating room under sterile conditions than doing it in the office later. You also know exactly where the perforation is located when you’re in the operating room.

Friedman: You’re going to have to take a child back to the operating room, regardless, for cryotherapy so it’s easier to do it on the spot.

Chan: Right.

Suh: I’d like to point out that most of these cases are done at a children’s hospital and retina surgeons don’t always have access to the children’s hospital. In addition, cryotherapy is not even available anymore in many children’s hospitals.

Wagner: No, it wouldn’t be.

Suh: At a recent midwestern symposium with approximately 10 pediatric ophthalmologists who had the experience of more than 100,000 cases, laser treatment or even observation was recommended, assuming the perforation is small and localized to one particular area.

Chan: Yes. And it’s very important to look at the retina right away.

Wagner: The next day.

Suh: We did a study and found that 25% of the sutures were contaminated by the end of the case.

Burke: I remember that.

Suh: Therefore, my main recommendation for other surgeons is not to pass the suture through if you see a perforation.

Wagner: I think those are good points. I’m glad we had the retina consultant here when we needed him.

Chan: It’s an interesting discussion.

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