Cyberspace Chat

Sharon A. Keene, MD *Tucson, Arizona*

The following cyber-correspondence raises the question of how best to manage patients on the anti-platelet medication Plavix.

Safe management of patients on Plavix® (clopidogrel) for hair restoration surgery (HRS)

Dr. Mel Mayer began the thread by commenting about his approach to anticoagulation: "Anticoagulation is a challenge I am facing more all the time—maybe my population is getting older. For years I would not do a transplant unless bleeding times and INRs (international normalized ratios) were within normal limits. Usually I will work with their internist or cardiologist and coordinate a program of long-acting heparin (Lovenox) 6 days before surgery as Coumadin is discontinued. Over the past 2 months I have performed HTs on two anticoagulated patients, one with an INR of 1.7 and the other 2.3. I left the 1:50,000 epi solution in for 15 minutes prior to incision and site preparation; I had no oozing or popping problems. I keep these cases under 2,000 grafts in the event I would encounter more problems. Plavix is a different story. I insist that they are off for at least 10 days, preferably 2 weeks. With so many stent patients, most cardiologists want 6-12 months solid on Plavix."

Following this commentary, Dr. Marc Avram responded: "I have done many excisions of skin cancers with patients on Coumadin. I have done no hair transplants on a patient on Coumadin or Plavix. It has come up several times and I have passed. The potential risks outweigh the benefits to me."

Dr. Bob Haber then shared his experience: "I don't worry about aspirin very much, but thus far I've managed to avoid patients on Coumadin. I tried a tiny session on a patient on Plavix once, and it was a disaster. That's my only 'never' scenario."

In response, Dr. David Perez wrote: "Obviously the patients on anticoagulants are high-risk patients and we must be very careful. I have done some HTS with patients on Coumadin with no problems at all. I always requested a medical clearance including comments and suggestions of the cardiologist or internal medicine doctor or general surgeon. The average case is less than 2,000 grafts. Also I have a strict control with epinephrine, it usually is 1:300-400,000; pulse oximeter and decreased surgery time are also important. Also I have done several cases with aspirin (81mgs, 325mg, or 500mgs) with minimal problems; I always follow what I mentioned above. If I find additional risk(s) for the HTS, I delay or cancel the surgery altogether."

As the thread continued, Dr. Paul Cotterill shared his case experience and approach to the management of Plavix: "I had a patient a few years ago that was off Plavix for 1 week and then started it up again the day after surgery…. Two days after surgery he had a significant bleed through his suture line. I now have them stop Plavix, with their doctors' permission, for 10 days before surgery and for 8 days after (I usually remove sutures at day 7)."

Finally, Dr. Mike Beehner had this to share: "My understanding (and my experience with one case) is that you cannot do the surgery with the patient having Plavix on board, and I thought the patient had to be off of it at least 7-8 days before surgery. Does anyone else have a good experience doing surgery with fewer days off the drug? I will let people with an indication be on baby aspirin (80mg) right up to the day of surgery, and, if they need more in the way of protection leading up to surgery, then Lovenox (injectable heparin) is used with their doctor's guidance and permission."

Conclusion

The consensus of cyber-opinion is that HRS doctors must work in conjunction with the prescribing primary care physician, cardiologist, or surgeon to determine if it is safe to temporarily discontinue this medication prior to elective surgery. A brief review of the medical literature and the manufacturer's web information can help us to safely manage patients on Plavix who seek hair restoration surgery.

Accurate assessment of risk/benefit is of primary importance in these cases, and understanding the indications and duration of therapy for a patient who is on Plavix is part of that process. As practitioners of cosmetic, elective surgery, it is important to maintain high safety standards for patient selection in order to avoid unnecessary risks to patients. For example, in patients with coronary artery disease who are placed on Plavix post stent placement, it is critical to understand when they were stented and the type of stent placed. Certain types of drug eluting stents have a high risk of occlusion if anti-platelet therapy is stopped prior to endothelialization of the stent. There are several series of patients who had cessation of anti-platelet therapy for noncardiac surgery within months of stent placement who went on to occlude and suffer fatal myocardial infarction from stent occlusion. The American College of Cardiology now recommends that patients who have these types of stents avoid any elective dental or surgical procedures within 1 year of stent placement that would necessitate discontinuation of therapy. (Prevention of premature discontinuation of dual antiplatelet therapy in patients with coronary artery stents, *J Am Coll of Card*. 2007; 49:734).

In review, clopidogrel is an anti-platelet agent that works by irreversibly inhibiting binding between adenosine diphosphate (ADP) and its platelet receptor, thus preventing development of the glycoprotein IIb/IIIa complex that promotes platelet aggregation. Since the receptor modification is irreversible, all platelets impacted by the medication are

rendered nonfunctional for platelet aggregation for their lifespan, which is approximately 7-10 days. The manufacturers estimate that on a daily dose of 75mg there will be approximately 40-60% platelet inhibition, so 40-60% remain functional on Plavix alone. The half life of the drug is 6 hours, and its efficacy is affected by pharmacogenetics (*Thrombosis Journal,* 2007; 5:6). Recommendations from the manufacturer are that if anti-platelet activity is not desired, the medication should be discontinued for 5 days prior to surgery. Furthermore, in a study on coronary artery bypass surgery patients who had Plavix discontinued for 5 or more days before surgery, there was no significant difference in bleeding complications compared to those who were not on Plavix, but an increase in bleeding was noted for those who stayed on Plavix within 5 days of surgery. Therefore, a minimum of 5 days off Plavix is necessary to prevent bleeding complications, but 7 days off Plavix would likely further improve the pool of functional platelets if this is tolerable in terms of risk to the patient. Confirmation of platelet function, if desired, is measured with a bleeding time. (The INR, which measures coagulation function with warfarin, will not be useful in this circumstance as it measures the function of clotting factors, not platelet function.) In terms of restarting the medication after surgery, again there is a risk/benefit consideration. Platelet inhibition can be seen 2 hours after a 75mg oral dose of Plavix is consumed, and steady state of platelet inhibition is reached between 3-7 days on regular dosing regimens. Platelets are very important in the early phases of wound healing, both for their hemostatic role as well as their role in leading to collagen fibril construction and providing the necessary platform for phase 2 wound healing, which involves the inflammatory response. Platelets are the first line of wound healing, and their role in primary wound healing can last for several days. Nevertheless, reviewing recommendations and practices from other specialties indicates that most surgeons will restart Plavix 1-2 days after surgery, but clinical judgment should be used as well as input from the prescribing physician. (www.csmc.edu/11261.html; www.ctsnet.org/portals/thoracic/surveys/surveyresults/survey_results_2009_01.html)

As with any patient who has a medical history that includes serious medical conditions, medical clearance for elective cosmetic surgery is indicated. In my personal experience, I have operated on 2 patients who were taken off Plavix for 5 and 7 days prior to surgery with approval of their cardiologist, and restarted 24 hours after surgery. As suggested by others, I limited the size of the surgery to limit the amount of surgical trauma, and duration of the surgery, too. I did not experience any complications with this regimen, but recognize that platelet inhibition can predispose to increased bleeding from any type of wound trauma in the postoperative period, and extra caution on the part of patients should also be exercised.✧