Bleeding Disorders Are Not a Barrier to Mohs

BY SUSAN LONDON
Contributing Writer

VANCOUVER, B.C. — Some patients undergoing Mohs micrographic surgery have undiagnosed bleeding disorders, but careful history taking, vigilance during surgery, and tailored management can prevent complications in most cases, according to results of a study of more than 2,500 patients.

Dr. Carl Vinciullo and his colleague, Dr. Ross Baker, both of Royal Perth Hospital in Australia, prospectively assessed the prevalence of bleeding disorders among 2,517 patients undergoing Mohs surgery between 2003 and 2007. The investigators obtained a detailed bleeding history from all patients and performed a hematologic workup in those who had a positive history or who had unexplained excessive bleeding during their Mohs surgery.

A total of 18 patients (0.7%) had a previously undiagnosed bleeding disorder. Eleven of them had a positive bleeding history, while seven had a negative history but bled excessively during surgery. Dr. Vinciullo noted that most of the affected patients had normal routine coagulation profiles on hematologic testing and that one patient had even undergone general surgery uneventfully 2 years earlier.

The hematologic workup further revealed that 6 of the 18 patients had von Willebrand disease (alone or with other abnormalities), three had acquired platelet abnormalities with myelodysplasia and other abnormalities, two had suspected increased capillary fragility, one had a clopidogrel-like platelet secretion defect, and one had suspected impaired vasoconstriction with hereditary hemorrhagic telangiectasia.

Another two patients—one with refractory immune thrombocytopenia and antiplatelet antibodies, and another with disseminated intravascular coagulation, thrombocytopenia, and cancer-associated fibrinogen deficiency—were treated with radiation therapy instead because their disorders were judged to be contraindications to surgery.

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DR. VINCIULLO

Finally, three of the patients had no definable hematologic abnormality. "This does not mean that they do not have a bleeding abnormality," Dr. Vinciullo said of the last group. "It is quite conceivable that there are bleeding abnormalities which are yet not possible to define with the investigations available to us."

Among the patients who were surgical candidates, those with von Willebrand disease were treated with preoperative desmopressin infusion, oral tranexamic acid, or a combination thereof. Those with platelet function abnormalities were all treated with preoperative platelet infusions; one also received desmopressin, and another also received additional platelet cross-matching, recombinant factor VIIa, and tranexamic acid. The remaining patients were given tranexamic acid or were not treated, Dr. Vinciullo reported at the annual meeting of the American College of Mohs Surgery.

With this management approach, 17 of the 18 patients did not experience initial or additional excessive bleeding and did not require further intervention, according to Dr. Vinciullo. The remaining patient, who had an acquired platelet function abnormality, antiplatelet antibodies, low factor XII levels, and myelodysplasia, was hospitalized for 3 days because of surgery-associated bleeding, despite all measures.

Summing up the study's findings, Dr. Vinciullo said that the incidence of undiagnosed bleeding disorders is low in Mohs surgical patients, but physicians nonetheless should be alert for such disorders—even when a bleeding history is negative and the results of routine coagulation studies are normal.

"Hematology assessment is essential, and specialized prophylactic treatment can prevent the vast majority of bleeding complications," he said.

However, he added, routine preoperative hematologic testing is not warranted in patients with a negative bleeding history. "The most sensitive sign is a positive history, so you must take a detailed bleeding history," he emphasized. (See box.) "The sort of questions I listed are the questions you need to ask. It's absolutely incredible how many of these patients have simply never been asked those questions, or the physician knows they bleed but has never done anything about it."

Finally, Dr. Vinciullo advised, "unexplained excessive bleeding during Mohs surgery should be investigated." He noted that a watery consistency of the blood and bleeding from suture holes can be additional telltale signs of underlying bleeding disorders.

"If you have a patient where you place a stitch and blood comes out of the suture hole, to me, that's a reason to send [that person] off for a hematology investigation," he said.

Dr. Vinciullo reported no conflicts of interest in association with the study. ■

Take a Detailed Bleeding History

Ask patients if they have had excessive bleeding during any of the following:

- ► Menstrual periods or childbirth?
- ► Nosebleeds?
- ► Skin surgery?
- ► Dental work, tonsillectomy, or general surgery? And also ask:
- ► Have you had to return to a physician's office or hospital because of bleeding?
- ► Do you bruise excessively?
- ► Do you take supplements or complementary products (vitamin E, garlic, ginkgo biloba)?
- ► Do you have a family history of bleeding, hemophilia, or von Willebrand disease?
- ► Do you have any blood disorders or leukemia?

Source: Dr. Vinciullo

Study Affirms Safety of Local Anesthesia for Mohs Surgery

BY SUSAN LONDON
Contributing Writer

VANCOUVER, B.C. — A new study finds that the local anesthesia used for Mohs surgery appears to be safe, with serum levels of lidocaine remaining well below the threshold for toxicity and an absence of any drug-related adverse events.

Although Mohs procedures are routinely performed using lidocaine anesthesia without any complications, few studies have looked at lidocaine levels specifically in this context, said study author Dr. Murad Alam, chief of cutaneous and aesthetic surgery at Northwestern University, Chicago.

Research on tumescent anesthesia suggests that a greater vascular supply above the clavicle promotes faster systemic absorption of lidocaine (Plast. Reconstr. Surg. 2005;115:1744-51). The concentration of lidocaine in the anesthesia used for Mohs surgery is 5-10 times that of tumescent anesthesia.

The prospective cohort study, reported at the annual meeting of the American College of Mohs Surgery, took place among 20 consecutive adults undergoing Mohs surgery with local anesthesia for nonmelanoma skin cancer. The anesthesia consisted of a lidocaine solution (concentration, 1:100) also containing epinephrine (1:100,000) and 8.4% sodium bicarbonate (1:10); it was injected at the start of each stage of Mohs surgery. Blood was drawn from the patient's arm before and after each of three stages (or two stages plus closure), for a total of six sampling time points over roughly 5 hours.

Serum lidocaine levels were measured by gas chromatography, and both patients and physicians assessed the occurrence of adverse events.

Dr. Alam explained that mild symptoms of lidocaine toxicity occur when the serum level of the drug reaches 3 mcg/mL; moderate symptoms when the level exceeds 5 mcg/mL; and severe and potentially life threatening symptoms when the level exceeds 10 mcg/mL.

Study results indicated that across all time points, lidocaine levels were detectable (greater than 0.1 mcg/mL) in just five (25%) of the patients.

"Even in the worst-case scenario—the sixth and final time point, where you would expect the serum lidocaine level to be the highest because of the cumulated dosage to that point—only 5 of the 20 patients had a detectable serum lidocaine level," Dr. Alam remarked.

Furthermore, the median level for the cohort was undetectable at all time points.

"Assuming the vast majority of patients did absolutely fine, were there some patients who had very high levels and got into trouble? Again, the answer is no," Dr. Alam asserted.

Of all patients, the highest peak serum lidocaine level observed was 0.3 mcg/mL noted during the last three time points. "That is still one-tenth of the amount for even mild symptoms to occur," he pointed out.

When patients who did and did not have detectable serum lidocaine levels were compared, those with detectable levels had been injected with a significantly greater mean volume of lidocaine solution (30 vs. 9.5 mL). They were also significantly older (68.6 vs. 50.7 years) and somewhat more likely to be male, although Dr. Alam cautioned "this might just mean that older men have larger tumors."

No patient in the study experienced adverse events associated with lidocaine toxicity.

DR. ALAM

A final analysis showed that peak serum lidocaine levels were well correlated with the total volume of solution injected.

Adverse events were reported by two patients—a 56-year-old man who reported a mild headache and a 42-year-old woman who reported feeling shaky. "Both were after the first Mohs stage, and so they were much more likely to be epinephrine effects than lidocaine effects, which would be expected to happen after a lot of lidocaine was injected," Dr. Alam observed. No adverse events related to the drug were noted.

"There was no case in which serious adverse events or even mild adverse events associated with lidocaine toxicity were seen, which suggests what we already knew to be true based on experience—that local anesthesia given during Mohs surgery appears to be safe," Dr. Alam concluded.

He reported having no conflicts of interest in association with the study. ■