

Powered RHINOPLASTY

Surgeons are seeing advantages as they move from traditional osteotomes to powered microsaws for rhinoplasty, but there is a learning curve.

By Inga Hansen

EACH YEAR, new tools and devices enter the surgical arena. Some find a permanent place in operating rooms; others fall out of favor following a short burst of popularity. Powered microsaws, which feature vibrating attachments that can cut through bone and cartilage without damaging soft tissue, have long been used in dental surgery and are beginning to take the place of manual osteotomes in rhinoplasty. We spoke with three surgeons and asked them to share their experiences with—and top indications for—powered rhinoplasty procedures.



Powered microsaws use vibration to cut bone, leaving soft tissue unharmed for a more comfortable recovery.

Behrooz “Bruce” Torkian, MD, of Torkian Facial Plastic Surgery in Beverly Hills, California, recently began incorporating the PIEZOSURGERY ultrasonic saw (Mectron) in his rhinoplasties, thanks in part to the company’s introduction of a new rhinoplasty osteotomy attachment. Although he is “very, very comfortable” performing chisel and mallet osteotomies, he has been impressed with the benefits offered by the powered saw, including decreased bruising and bleeding, and more precise results. “The rapid oscillation of the saw results in the ability to cut through bone without injuring mucosa,” says Dr. Torkian. “We see less bleeding after surgery, so recovery is more comfortable—both physically and psychologically—for the patient. The splints are cleaner as well, which makes maintenance of the splints postoperatively a little easier.”

He finds that the microsaw is more reliable, particularly in cases where the patient has previous breaks. “The chisel is sometimes a little bit unpredictable because if a nose has been broken or operated on before, the chisel will follow

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the path of least resistance, so it may go off in a different direction,” he says. “Chisels also need to be sharpened regularly—which reduces this risk—but means they do require regular maintenance. The saw is a refreshing improvement on that.”

Dr. Torkian currently uses the microsaw for patients with thinner bones but plans to incorporate the new tool for all patients as his comfort increases. “I don’t want to use this saw on a patient with very thick bone until I’m really comfortable with it, and with knowing where I am in relation to the anatomy of the skin and the mucus membrane on the inside,” he says. “Once I get a better feel for that, I’ll start applying it to the thicker bone cases as well.”

He estimates that it took about 10 procedures until he felt comfortable with the powered saw. “I have gone back and looked at all of the cases that I’ve done with the saw and checked to determine whether I made the cut in the bone in the same position that I would have made it with the osteotome had I been using it,” says Dr. Torkian. “I do feel that the cuts are in the same position and they are not conspicuous, so I’m happy with the way it’s going so far. I feel I’m getting as good a result with the saw as I would have with the chisel.”

Manhattan-based facial plastic surgeon and ENT, Sam Rizk, MD, had extensive experience using powered instruments for ear surgery and was an early adopter of the microsaw in rhinoplasty. He’s been using Anthony Products’ Micromotor System for 10 years and trains other surgeons as well. He uses the powered microsaw with rotating bone bur attachments for all of his endonasal rhinoplasties.

“If you’re using a chisel or a rasp to take down the bone and a knife to take down the cartilage, there’s going to be a little discrepancy in height in the middle of the nose, which can look unnatural. You can also over-reduce things with the osteotomes,” says Dr. Rizk. “The advantage of the powered burs is you can reduce the bone and the cartilage with the same tool. Therefore, you’re getting a smoother, more predictable and more natural-looking result, and the surgery is more controlled, because you are using powered burs that very accurately reduce the bone and cartilage 1mm at a time.”



Powered microsaws are particularly beneficial for evenly reducing bumps of bone and cartilage on the nasal bridge.

Addressing Specific Concerns

Philip Miller, MD, of Gotham Plastic Surgery in New York City, uses a traditional osteotome for most of his rhinoplasty procedures and utilizes a Bien-Air Microsaw for specific irregularities. For patients with small bumps on the bridge of the nose, he uses the saw with a rasp attachment to perform the less invasive microrhinoplasty, which can be done under local anesthesia. "This is not for someone who has a very large bump or hump. It's for someone who has a very small bump but is happy with their tip," he says. "All they want to do is have that specific area removed.

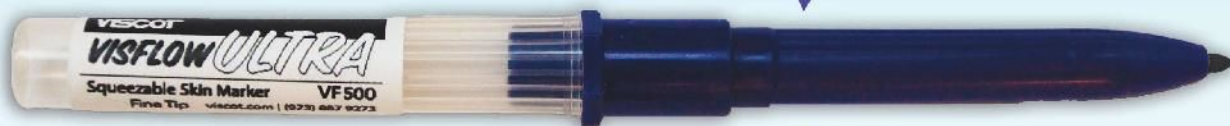
"Because it's a very fast, vibrating machine, if the rasp is placed on soft tissue, it won't cause any damage," continues Dr. Miller. "However, when it's placed on bone—or even fixed cartilage—it will slowly shave it down to refine and smooth any irregularities. Almost all the other rasps that exist right now are pretty wide and thick, and require a back-and-forth motion to remove the bump. This attachment is very narrow, and since it's not moving back and forth to any significant degree, I just need to put it down on top of the bump and it sands it down."

Another indication for which Dr. Miller uses the powered microsaw—with an osteotomy attachment—is removing

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bone from the sides of the nasal bridge. "It works perfectly in cases where you want to actually remove bone in the location of your osteotomy," he says. "This is primarily for an individual who has a very wide nasal bridge. I can make an incision in the bone with the manual osteotome, and then the microsaw allows me to very precisely remove bone on either side of that crack I've created."

Additional Indications

The microsaws come with a variety of attachments, including saw blades, rasps, drills and burs. Many of the devices hail from the dental field where they are used to cut or shape jaw bone, and aesthetic surgeons are finding indications outside of rhinoplasty as well. Dr. Miller uses his saw with a drill attachment to reduce chin and cheek protuberances and osteomas. "Years ago, a patient with a little osteoma on her forehead was referred to me," he says. "I used the drill attachment and posted the procedure on YouTube, and it brought in so many more patients with forehead osteomas. In these cases, you can use an endoscopic approach or go in directly through the forehead lines to shave down the bone."

The biggest challenge when incorporating powered microsaws is typically the learning curve, which can vary widely depending on your experience with powered instruments. "I was very well trained in using powered instruments for a number of different procedures, so the notion of having something in my hand, vibrating slightly, as I made very precise maneuvers did not require me to take a very big step," says Dr. Miller. "For those who have never had that experience, it's going to be a much steeper learning curve."

Dr. Torkian admits he felt some anxiety during the first surgery in which he used a powered saw. "The first procedure is moving past the anxiety. The second one is really cultivating a feel for the saw, and the third up to the tenth is just getting better and better and better at it," he says.

"The only disadvantage to the powered instruments is the learning curve, but the advantages vastly outweigh that," says Dr. Rizk. "You get smoother, more natural-looking results with less trauma and less bruising—it's far superior." **ME**

Inga Hansen is the executive editor of *MedEsthetics*.

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