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Ultrasonic 'piezosurgery' equipment reduces pain, swelling in patients undergoing chin surgery

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For patients undergoing plastic surgery of the chin (genioplasty), the use of ultrasonic "piezosurgery" equipment reduces trauma, pain, and swelling, compared to traditional surgical drills, reports a study in the *The Journal of Craniofacial Surgery*. The journal is published by Wolters Kluwer.

"Piezosurgery may be a viable alternative to traditional osteotomy [bone-cutting] technique, as it reduces the degree of inflammation, pain, swelling, and morbidity, improving satisfaction and patient comfort," according to the report by Dr. Gilberto Sammartino of University of Naples Federico II, Italy, and colleagues.

Piezosurgery versus Traditional Instruments for Genioplasty

The researchers compared complications after genioplasty performed using piezosurgery devices or traditional rotating drills. Genioplasty, sometimes called mentoplasty, is a plastic surgery procedure done to reshape the chin--for example, augmenting or reducing it--for cosmetic and/or functional reasons.

Piezosurgery is a relatively new approach that uses ultrasonic energy, rather than conventional surgical instruments, for cutting of bone. "Several studies have demonstrated that bone healing using piezosurgery is more rapid than other techniques using drills or burs, thanks to a lower inflammatory bone response," Dr. Sammartino and coauthors write.

The study included 40 patients scheduled for genioplasty, as a primary procedure or after corrective jaw surgery. Patients were randomly assigned to undergo genioplasty using either ultrasonic piezosurgery instruments or traditional drills. Pain, healing, and complications were compared from one to 15 days after surgery.

The results showed lower pain scores for patients undergoing piezosurgery, although the difference was significant only on the third and seventh day after surgery. Swelling also seemed to be reduced with piezosurgery, compared to cutting drills.

Both groups had reduced feeling in the chin area throughout the first 15 days after surgery, mainly due to nerve stretching. By six months, sensation normalized within six months for all patients in both groups. Pain and swelling were completely resolved as well.

Previous studies have shown that piezosurgery leads to better control of the inflammatory bone response induced by surgery, and less cell damage leading to increased bone remodeling after surgery. Dr. Sammartino and colleagues conclude, "Bone undergoes less stress during surgery and thus less pain and swelling postoperatively, which is in agreement with the results found in our trial: pain and discomfort were minimal compared to the traditional technique (saw and drills) especially in the immediate postoperative period of healing (within 3 days)."

Source:
Wolters Kluwer Health
