



Voice May Change after Rhinoplasty, Reports Plastic and Reconstructive Surgery

Patients Perceive Differences in Voice Quality, But Not in Function

Arlington Heights, Ill. (January 28, 2014) – Patients who have undergone plastic surgery to change the appearance of their nose may also notice changes in the sound of their voice, reports a study in the February issue of [Plastic and Reconstructive Surgery®](#), the official medical journal of the [American Society of Plastic Surgeons \(ASPS\)](#).

Changes in voice after [rhinoplasty](#) are perceptible to patients as well as to experts, but generally don't cause problems with speech function, according to the new research by Dr. Kamran Khazaeni and colleagues of Mashhad University of Medical Sciences, Iran. However, they believe that patients considering rhinoplasty—especially those who use their voice professionally—should be aware of "potential voice alterations."

Patients Perceive Voice Changes after Rhinoplasty

The researchers analyzed changes in voice quality in 27 patients undergoing rhinoplasty at two hospitals in Iran, where rhinoplasty is one of the most popular cosmetic procedures. The patients were 22 women and five men, average age 24 years. Twenty-two percent of the patients used their voice professionally.

After rhinoplasty, patients completed a standard questionnaire to rate perceived problems with their voice. In addition, recordings of the patients' voices made before and after rhinoplasty were compared by trained listeners, who were unaware of whether they were hearing the "before or after" recordings.

The questionnaire responses showed worsening in some areas of voice quality: particularly in the physical and emotional subscales, reflecting patients' perceptions of their voice and their emotional responses to it. There was no change on the functional subscale, reflecting the effects of voice on daily activities.

The trained listeners also perceived changes in voice quality, including an increase in "hyponasality" following rhinoplasty. Hyponasal speech reflects the sound of the voice when not enough air is moving through the nasal cavity—for example, in a person with a stuffy nose. "This observed increase in hyponasality perception demonstrates that the change in the patients' voices is perceptible to trained listeners, but does not address whether this change is apparent in everyday life and in routine conversations," according to Dr. Khazaeni and colleagues.

Changes May Reflect Narrowing of Nasal Cavity

An acoustic analysis suggested changes in the frequency and amplitude of certain sounds, which may be related to narrowing of the nasal cavity after rhinoplasty. "The changes in surface area of nasal cavity may increase airflow resistance and cause an increase in sound absorption and a decrease in passing sound amplitude," according to the researchers.

With recent advances in surgical technique and long-term outcomes, rhinoplasty has become an increasingly popular procedure in Iran, as in other countries. The growing number of patients undergoing this cosmetic surgery raises concerns about how it might affect various functions and quality of life. "Recently we have noticed patients who use their voice professionally asking if rhinoplasty changes their voice," Dr. Khazaeni and coauthors write.

Based on the new results, the answer seems to be that changes in voice quality do occur after rhinoplasty. Subtle but significant changes are apparent to trained listeners. Patients themselves may also perceive changes to some extent, although they don't seem to cause interference in the patient's lives. "However, for individuals who rely on their voice for professional reasons, the surgeon should discuss these changes with the patient preoperatively and consider more conservative types of surgery," the researchers conclude.

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