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NON-INVASIVE EVALUATION OF ULTRASONOGRAPHY-GUIDED REDUCTION OF NASAL BONE FRACTURE

Akiko Hirata, M.D. *, Emi Okada, M.D. §, Akiteru Hayashi, M.D. ¶, Michio Saze, M.D. §, and Kiyoshi Onishi, M.D. §

*Department of Plastic and Reconstructive Surgery, Toho University Ohashi Medical Center, Tokyo, Japan, §Department of Plastic and Reconstructive Surgery, Toho University, Tokyo, Japan, ¶Department of Plastic and Reconstructive Surgery, Toho University Sakura Medical Center, Chiba, Japan

Introduction: Intraoperative assessment of nasal bone fracture reduction is very important in achieving adequate repositioning. Ultrasonography has been used for the assessment and diagnosis of nasal bone fracture because it is easy and quick to perform, and involves a real-time, inexpensive, portable, and non-invasive technique. The purpose of this study was to evaluate the utility of intraoperative ultrasonic guidance for close reduction of nasal bone fracture. **Methods and Results:** We studied 25 patients (22 males, 3 females; age range: 5–49 years; mean: 22 years) with nasal bone fracture. We employed SSA-660A, Xario™ and SSA-640A, Viamo™ as ultrasonography, and used PLT-805AT (8 MHz) and PLT-704SBT (7.5 MHz) as probes. All patients underwent preoperative computed tomography (CT) for diagnosis of nasal fractures. In particular, ultrasonography was conducted for diagnosis of nasal fracture using an ultrasound gel pad. Reduction was confirmed by real-time ultrasonography and a final evaluation was made after intranasal packing was inserted using an ultrasound gel pad. In 10 patients whose condition was regarded as difficult to repair, ultrasonography-guided reduction was undertaken. We conducted a postoperative evaluation of nasal symmetry after one month using CT and ultrasonography. Accurate reduction was confirmed during the evaluation by specifying target fragments using real-time ultrasonography. **Conclusion:** We suggest that ultrasonography is very useful for evaluating intraoperative repositioning of fractured bone fragments. It appears that evaluation using an ultrasound gel pad after

insertion of intranasal packing helps to prevent re-collapse of repositioned fragments.