IN-OFFICE LASER SEPTAL SPUR REMOVAL

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ABSTRACT

Objectives: To evaluate the impact of nasal airway improvement, patient satisfaction, safety and complications following in-office, laser septal spur removal (LSSR).

Study Design: Multicenter retrospective study of 1000 patients’ charts from 1998-2008 were reviewed. Patient satisfaction, subjective outcomes, instrument and objective evaluation of nasal airway resistance / volume changes were recorded. Complications including perforation, crusting, synechia, bleeding, hematoma formation, altered smell sensation were collected.

Methods: LSSR was conducted employing two different laser systems: a) CO2 laser, articulated arm with nasal hand-piece / wave guide, or b) 980nm diode laser with fiber delivery system. The surgical technique includes direct transmucosal ablation of anterior or posterior cartilaginous spurs without incisions, mucoperichondrial flaps, thereby eliminating complications such as post-op packing. The laser was chosen according to location of the spur with power settings of 4-8W at CW. Posterior spurs were endoscopically ablated with fiber and long handpiece.

Results: Over 96% of patients reported subjective improvement of nasal airway and associated symptoms, according N.O.S.E. scale. Objective confirmation was achieved in some patients utilizing rhinomanometry.

Conclusions: In-office LSSR performed under local anesthesia was found to be safe and effective procedure in carefully selected patients with nasal airway obstruction associated with septal spurs. Improvement in quality of life was achieved with minimal discomfort and complications.

INTRODUCTION

Nasal septal surgery (NSS) in the form of submucosal nasal cartilage resection or septoplasty is one of the most common operations performed in otolaryngology. As opposed to turbinate surgery, where multiple modalities are used, the technique for NSS has remained practically unchanged since its introduction. Conventional NSS consists of an incision followed by bilateral mucosal flaps elevation and septal contouring via resection or septoplasty. Novel technique was introduced by Kamami when nasal obstruction was relieved by the CO2 laser ablation of anterior septal spur. This technological leap offered many advantages. It offers patient comfort by eliminating nasal packing, allows tailoring time as office procedure is easily undertaken, thus sparing general anesthesia, immediate improvement with minimal complications and possible less pain. By eliminating conventional NSS complications such as perforation or septal abscess, CSF leak, anosmia are avoided. Due to its articulated mirrored arm and large hand piece with nasal tip the CO2 laser can only be used for anterior nasal spurs. We tried to overcome its limitations of CO2 laser hand-piece by employing a more maneuverable laser fiber. The inexpensive, table top, mobile, battery operated diode laser is an ideal for office procedures. Moreover, at wavelength of 980nm this device have a high absorption rate for hemoglobin and thus makes it ideal for soft tissue applications, where good hemostasis is necessary. With a 300 micron flexible fiber it is possible to address even the posterior spurs under endoscopic view.

METHODS AND MATERIALS

A multi center retrospective study with 1000 charts reviewed for search of complications which included: perforation, crusting, synechia, bleeding, hematoma formation or altered smell sensation. Patients selected for NSS included (but not limited to) the following indications: sleep apnea and snoring, limited improvement after typical operation and typical operation:


DISCUSSION

When selection is careful patients can undergo a limited laser NSS. The office setting is a safe environment as shown by limited complication rate. With the pioneer role of the CO2 laser in NSS we could easily switch to the NIR laser with possibly better results. The CO2 laser is a powerful laser which is the working horse in ENT practice. Hence it may be used as an adjunct in the operating room for selected NSS with advantages of: no need of packing, limited complication rate, reduced pain, shortening of operative time and reduced OR expenditure. The compact diode laser while delivering less power shows more diverse versatility with the proper hand-piece in the office. Therefore, we conclude that the laser is a safe and advantageous tool for NSS for carefully selected patients.

RESULTS

A total of 1000 laser NSS operated in an office setting in the last ten years were reviewed. The CO2 laser was employed in 700 and the NIR laser in the rest. 52 patients had NSS previously. Patient satisfaction was 96% (998/1000). Complications included crusting which occurred in 71%, no septal perforation, hematoma or alteration of smell was reported. Loss of productivity was minimal. Minor bleeding occurred in eight patients and was easily controlled with light packing.

REFERENCES