

# Treatment of epulis using the 980 nm diode laser

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## \_Abstract

Fibromatous epulis is treated through surgical removal and a good treatment modality is the 980 nm diode laser. This article reports on the treatment of eleven patients with fibromatous epulis at the University of Tirana's Dental School. Diagnosis was confirmed by biopsy. The laser was used with a power setting of 4 to 6 W, 300 µm optical fibre, set at continuous wave and in focused mode. The patients were examined at one week, four weeks and six months to one year after surgery. Post-operatively, no bleeding, swelling or oedema was observed. The laser surgery was well accepted by all patients. Use of the 980 nm diode laser in the treatment of fibromatous epulis offers advantages for both the patient and surgeon.

envelop one or more teeth. The cause is unknown. An epulis is treated by surgical removal. A good treatment modality is laser surgery. Many different laser wavelengths have been used in the field of oral surgery and offer many advantages especially because of laser's high coagulation property and bactericidal effect.

The 980 nm diode laser is portable, compact, efficient and of benefit in the treatment of epulis. It can be used with infiltration anaesthesia, set at continuous wave (cw) and in focused mode. The short duration of surgery is an advantage of this method because it reduces the fear and anxiety that patients have during dental procedures. The aim of this report is to present the clinical effects of the 980 nm diode laser in the management of epulis and to demonstrate wound-healing characteristics after laser surgery.

## \_Introduction

Fibromatous epulis refers to any benign lesion situated on the gingiva. Firm, pink tumours develop along the gums and while they are benign, non-invasive growths, they may become quite large and completely

## \_Material and methods

Eleven patients aged between 14 and 50 with epulis participated in this study. Diagnosis was confirmed by biopsy. All clinical cases were treated as outpatients at

**Figs. 1–3**\_Initial situation showing fibromatous epulis.

**Fig. 4**\_During treatment: the lased area appears bloodless.

**Figs. 5–7**\_Laser treatment of the lesions.



Fig. 1



Fig. 2



Fig. 3



Fig. 4

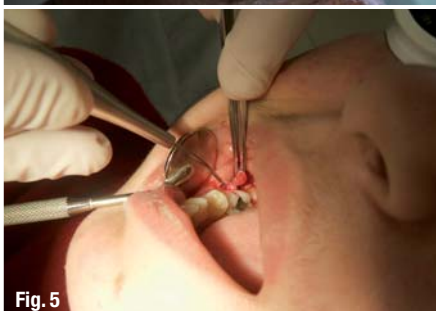
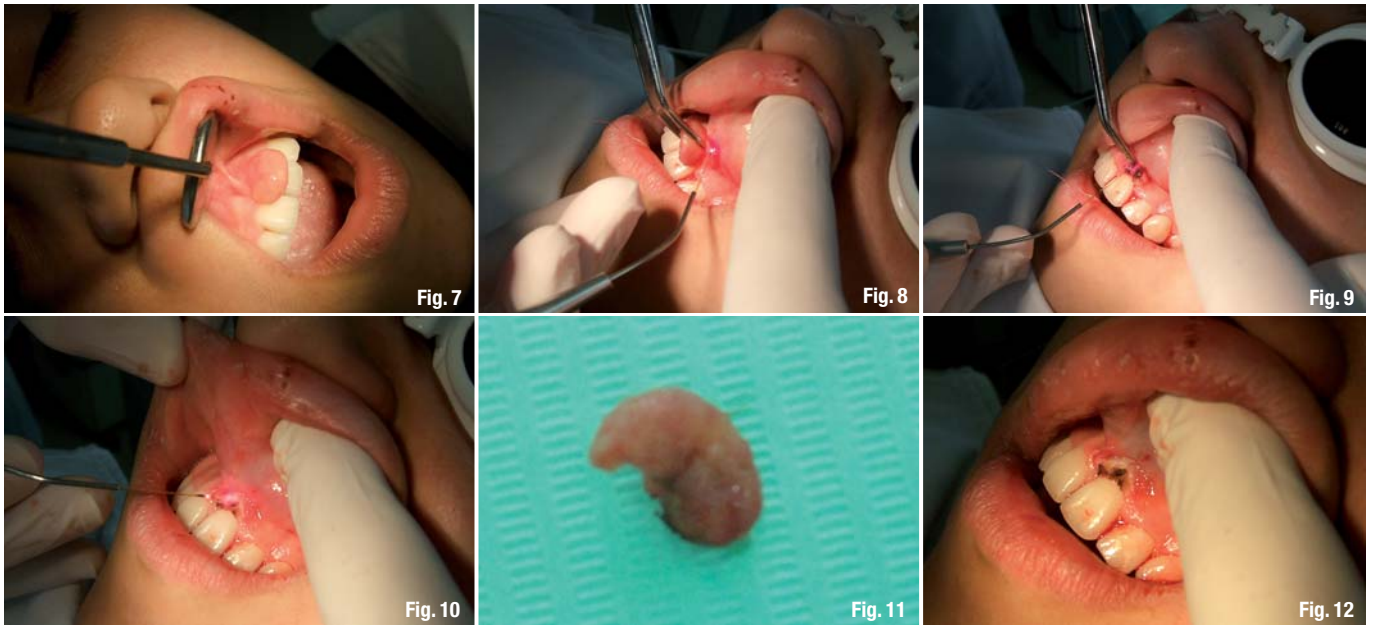


Fig. 5



Fig. 6



the Department of Oral Surgery at the University of Tirana's Dental School using the 980 nm diode laser. The laser parameters were as follows: 4 to 6 W power setting, 300  $\mu$ m optical fibre, cw, focused mode. The specimens were histologically examined. All patients were examined at one week, four weeks and six months to one year after surgery for evaluation of early and long-term results. Written informed consent was obtained from all patients before treatment commenced.

### \_Diode laser treatment

Before treatment, all precautions were taken for the safety of the patients, operator and assistant. Preoperative photographs were taken to document progress (Figs. 1, 2 & 3). Infiltration anaesthesia (lidocaine 2%, 1 cc) was used before each treatment. The diode laser was calibrated. The surgical technique was excision. Traction was applied to the lesion using forceps and it was excised along its base (Figs. 4, 5, 6 & 7). No sutures were placed (Fig. 8) and all specimens were histologically examined (Fig. 10). The histopathological examinations confirmed fibromatous epulis. No bone problems were revealed by X-rays and neither the teeth adjacent to the epulis nor any part of the jawbone had to be removed. The surgery took four to six minutes. The patients were advised to put ice on the lesion to prevent oedema and given instructions regarding follow-up.

### \_Results

The patients were followed up at one week, four weeks and six months to one year after surgery. At one week, the patients were examined for pain, bleeding and swelling. In post-operative clinical observations (eleven clinical cases), no pain, swelling or bleeding was reported. All patients resumed their normal activities

(school, job) immediately after surgery. No analgesics or antibiotics were prescribed. At four weeks, the wound-healing characteristics were evaluated. All patients reported good, comfortable healing without complications or functional disturbance (Figs. 11 & 12). At six months to one year, there was no recurrence (Fig. 13). In general, patient acceptance of laser treatment was high.

### \_Conclusion

Laser surgery is a treatment modality for epulis that offers beneficial effects and advantages. An intra-operative advantage is the high coagulation property of the 980 nm diode laser, owing to its good absorption by haemoglobin, which allows the surgeon a good view of the operating field. As post-operative advantages, wound-healing was without complication and there was no pain, bleeding or swelling one week after surgery. The short duration of surgery minimises patients' fear and anxiety during the procedure. Laser surgery was well accepted by all the patients. In conclusion, the treatment of epulis with laser offers advantages for both the patient and surgeon.

**Figs. 8 & 9** \_ Immediately after treatment.

**Fig. 10** \_ The specimen excised.  
**Fig. 11** \_ Wound-healing after four weeks.

**Fig. 12** \_ Four weeks after surgery, the wound has healed completely.

\_contact

laser

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