

## MODERN TREATMENT APPROACHES FOR EPULIS: FROM CONVENTIONAL TO ADVANCED TECHNIQUES

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**Introduction.** The treatment of epulis has evolved significantly from traditional surgical approaches to incorporate modern technologies and minimally invasive techniques. This article reviews contemporary treatment modalities, their indications, advantages, and clinical outcomes in managing various types of epulides.

### Conservative treatment approaches

#### Limitation of conservative management

Treatment of epulis fissuratum typically involves surgical excision because even removal of the offending stimulus (ie, the ill-fitting denture) will not result in complete resolution. While elimination of irritating factors is crucial, complete resolution of established epulides rarely occurs through conservative measures alone.

#### Role of initial conservative therapy

- Oral hygiene optimization
- Professional scaling and root planing
- Elimination of local irritants
- Correction of ill-fitting prostheses
- Monitoring during pregnancy (pregnancy epulis may regress postpartum)

#### Conventional Surgical Treatment

##### Traditional Scalpel Excision

Conventional surgical excision using scalpel remains the most widely practiced treatment modality for epulis.

##### Technique:

1. Local anesthesia administration
2. Complete excision including base and surrounding tissue
3. Hemostasis achievement
4. Suturing when necessary
5. Periodontal pack placement

##### Advantages:

- Cost-effective and widely available
- Familiar technique for most practitioners
- Provides adequate tissue for histopathological examination

##### Disadvantages:

- Bleeding during and after surgery
- Postoperative pain and swelling
- Need for sutures
- Longer healing time

Modern laser therapy approaches

Diode laser treatment

It must be surgically removed with scalpel, electrosurgery or lasers. Diode laser therapy has gained popularity for epulis treatment due to its numerous advantages.

Technical specifications: Diode laser (2W, 810 nm, pulsed mode) was used to excise the lesion.

Clinical advantages:

- Excellent hemostasis during procedure
- Reduced postoperative bleeding
- Minimal tissue trauma
- Faster healing
- Reduced need for sutures

CO2 laser treatment

The use of laser carbon dioxide (CO<sub>2</sub>) in the treatment of these lesions presents many advantages over conventional surgery including surgical technique without direct contact with tissue, without bleeding or need for sutures, minimal postoperative pain and edema.

Clinical applications: Immediate complete dentures were made prior to the lesion removal with CO<sub>2</sub> laser radiation, providing satisfactory results in oral function and tissue health.

Research evidence: The CO<sub>2</sub> laser effectively removed both lesion and kept bleeding under control during the surgical procedure e postoperative period.

Special considerations for anticoagulated patients

The hemostatic capacity of carbon dioxide (CO<sub>2</sub>) laser is well described in the literature as a useful tool in oral surgery, especially in patients with clotting disorders.

Cryotherapy applications

Principles of cryotherapy

Cryosurgery is performed using a cyrogen, typically liquid nitrogen, to cool the targeted tissue to subzero temperatures. This effect induces tissue damage in 2 mechanisms. The first mechanism is the induction of tissue ischemia by damaging blood vessels.

Clinical benefits

Cryosurgery is a minimally invasive treatment. Compared to traditional surgery, it usually has less pain and bleeding and a lower risk of damaging healthy tissue near the abnormal cells.

**Advantages in Epulis Treatment:**

- Minimal invasive procedure
- Excellent hemostasis
- Reduced postoperative complications
- Good cosmetic outcomes
- Cost-effective outpatient procedure

**Electrosurgery Applications**

Electrosurgery provides another alternative for epulis management, offering good hemostatic control and precision in tissue removal.

**Advantages:**

- Excellent bleeding control
- Precise tissue cutting
- Simultaneous coagulation
- Time-efficient procedure

**Considerations:**

- Potential for thermal tissue damage
- Artifact in histopathological specimens
- Need for specialized equipment

**Prevention of Recurrence**

**Risk Factor Modification**

As a component of the treatment, the denture must usually be re-made or substantially adjusted to prevent recurrence. In addition, the denture must be corrected; otherwise, the lesion will recur.

**Essential Preventive Measures:**

1. Complete excision of lesion including base
2. Elimination of all local irritants
3. Prosthetic adjustments or replacement
4. Oral hygiene education and maintenance
5. Regular follow-up appointments

**Surgical Technique Considerations**

It was ensured that the lesion was completely excised by trimming up the remnants of the soft tissue adjacent to the tooth to prevent recurrence of the lesion.

**Management During Pregnancy**

**Special Considerations**

Pregnancy epulis requires careful management considering maternal and fetal safety:

**Treatment Approach:**

- Conservative management when possible
- Postponement of elective procedures to second trimester
- Local anesthesia without vasoconstrictor
- Consideration of spontaneous regression postpartum

**Complications and management**

**Potential complications**

- Bleeding (immediate or delayed)
- Infection
- Recurrence
- Scarring
- Aesthetic concerns
- Functional impairment

**Complication management**

- Immediate intervention for bleeding
- Appropriate antimicrobial therapy for infection
- Re-excision for recurrent lesions
- Prosthodontic rehabilitation when necessary

**Future perspectives and emerging technologies**

**Novel treatment modalities**

- Advanced laser systems
- Photodynamic therapy
- Minimally invasive surgical techniques
- Tissue engineering approaches

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**Research directions.** Ongoing research focuses on understanding molecular mechanisms, developing targeted therapies, and improving treatment outcomes through evidence-based approaches.

**Conclusion.** The management of epulis has significantly advanced with the introduction of modern treatment modalities. Laser therapy and other advanced techniques offer superior outcomes compared to conventional surgery in terms of hemostasis, patient comfort, and healing. However, successful treatment requires proper case selection, complete lesion excision, elimination of causative factors, and appropriate follow-up care. The choice of treatment modality should be individualized based on lesion characteristics, patient factors, and available resources.

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