

# Diode laser assisted pulp polyp excision in a permanent mandibular first molar- A case report

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## ABSTRACT

**This case report is aimed to present diode laser assisted pulp polyp excision in a permanent mandibular first molar showing its efficacy in management of a proliferative lesion. It occurs when an inflamed pulp is exposed to certain factors such as trauma, dental caries etc. Root canal treatment is mostly done for the management of pulp polyp. In this case, pulp polyp excision was done using diode laser, then root canal treatment was completed and definitive restoration with porcelain fused to metal crown was given and was followed till 12-months.**

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## INTRODUCTION

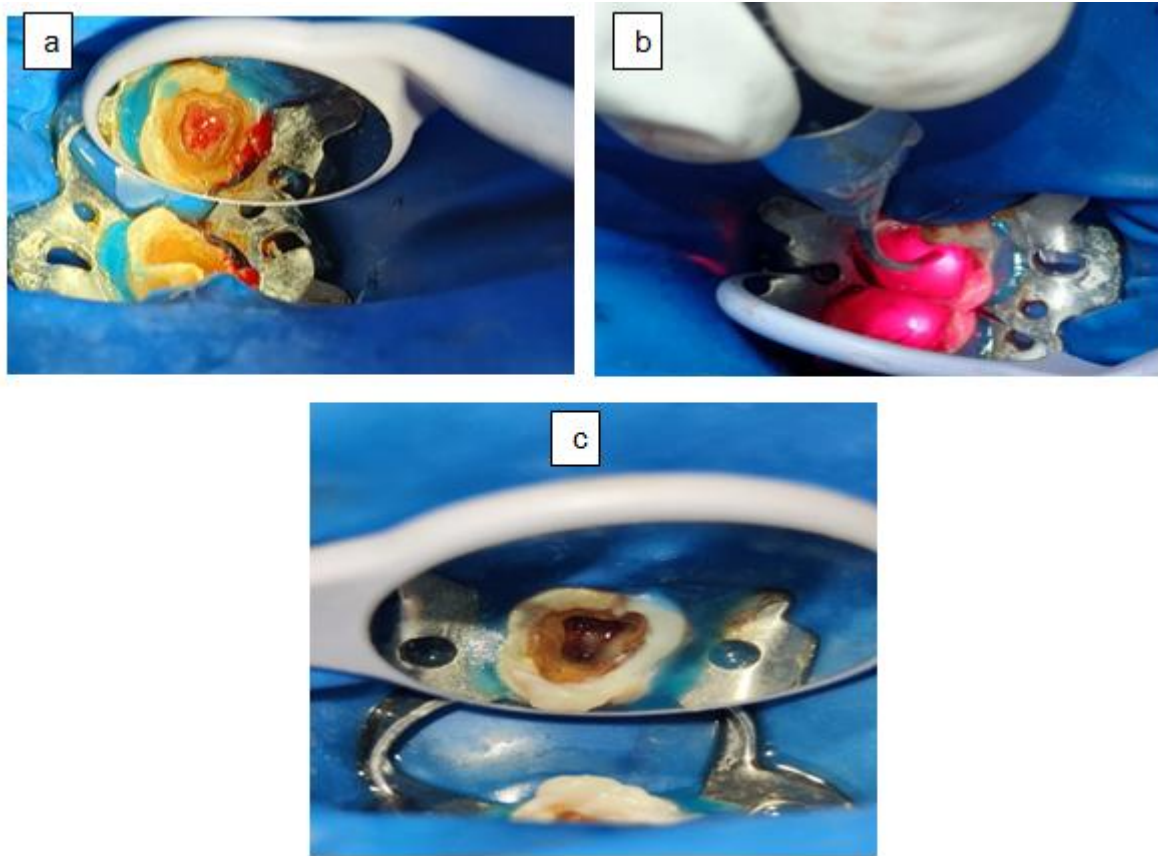
Pulp polyp, also known as chronic hyperplastic pulpitis, is chronic inflammation which may occur due to certain factors such as dental caries, trauma etc. Proliferation of pulp occurs in the pulp chamber leading to a pinky-red, fleshy mass extending in the exposed cavity<sup>1</sup>. Chronic hyperplastic pulpitis mainly affects young patients<sup>2</sup>. Immature permanent mandibular molars are most commonly affected teeth and may be symptomatic or discomfort may occur on mastication due to biting on proliferating tissue<sup>3</sup>. Pulp polyps can be treated by its removal followed by root canal treatment, if there are signs of necrosis, but if the prognosis is poor extraction is indicated<sup>4</sup>.

Therefore, this case report is aimed to manage chronic hyperplastic pulpitis by excision of pulp polyp with diode laser followed by root canal treatment and definitive restoration.

## CASE REPORT

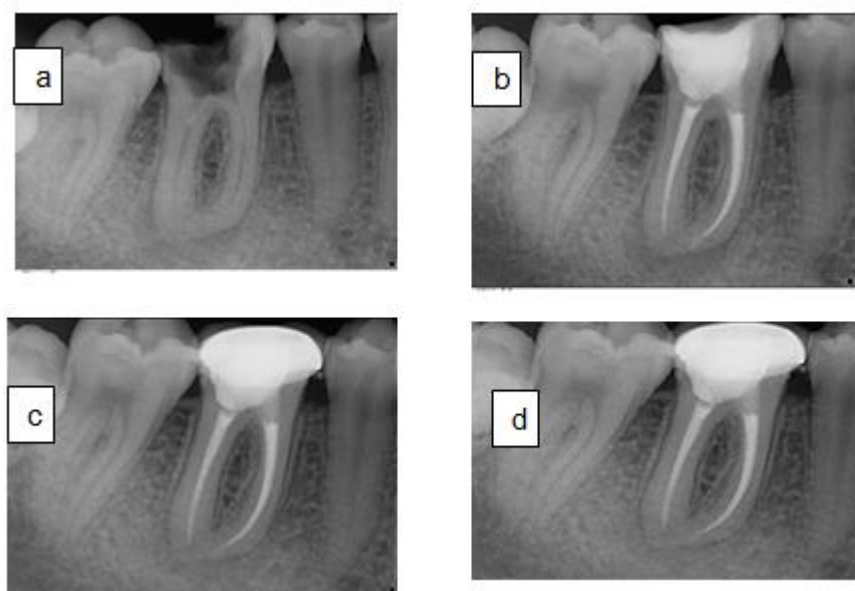
An 18-year-old male patient reported with a decayed tooth with protruding mass in the tooth at lower right back region for four months which caused discomfort in mastication. Patient did not present with any significant medical history. On clinical examination, pulp polyp was observed in mandibular first molar with a size of approximately 4mm\*3mm buccolingually to mesiodistally.

Informed consent was taken from the patient after thoroughly explaining benefits and risks of the treatment. The procedural area was first anaesthetized and then rubber dam isolation was done, and pulp polyp was removed using 940 nm diode laser. After pulp polyp excision, biomechanical cleaning and shaping resulted in root canal disinfection. Obturation was done using zinc oxide eugenol as sealer and composite restoration was used for final restoration. Over this definitive restoration was done with porcelain fused to metal crown. (Figure -1-clinical photographs and Figure-2-radiographs.)



**Figure 1-a) preop, b) pulp polyp excision by laser, c)after pulp polyp excision.**

Follow up was done at 6 and 12 months.



**Figure 2-a) preop , b) post obturation, c) 6-months follow-up, d) 12-months follow-up.**

### DISCUSSION

Pulp polyp is also known as chronic hyperplastic pulpitis and is a reactive lesion of pulpal tissue. The pulp polyp can be of cherry red color to opaque white depending on existence of dilated blood vessels. Pulp polyp management is different for deciduous and permanent dentition. A deciduous tooth may be extracted but permanent tooth needs to be preserved<sup>5</sup>.

A variety of techniques like electrocautery and scalpels can be used to excise pulp polyp<sup>6</sup>. If laser is used to excise pulp polyp, it has many advantages like there is bloodless field, improved visibility, low pain and shorter time taken for recovery etc<sup>7,8</sup>. Wavelengths of different ranges such as 810 nm to 980 nm can be used for excision<sup>7,9</sup>. In this case the pulp polyp excision was done using 940 nm diode laser. Other lasers have an affinity for water and hydroxyapatite while diode lasers coagulate as they have affinity for pigmented and vascular lesions<sup>9,10</sup>. This case report with follow-up of 12-months demonstrated that diode laser can be used as an efficient method for pulp polyp excision.

### **CONCLUSION**

This case report concluded that diode laser can be used as an efficient technique to remove pulp polyp, thus leading to painlessly preserving the natural tooth

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