DIODE LASER IN THE TREATMENT OF FOLIATE PAPILLITIS

Dr. Jagadish Ebenezer[^a], Dr. S. Daniel Sathiya Sundaram[^b],
Dr. Blessy Hepziba M[^c], Irudaya Mary M[^d],
A. Muthunayagam[^e]

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**Abstract:**

The tongue consists of various kinds of papillae which forms its characteristic morphology. These are the filiform papillae, the fungiform papillae, the circumvallate, and the foliate papillae. The foliate papillae may become enlarged and inflamed causing a condition called as Foliate Papillitis. The treatment of this disease includes relieving all causes of trauma to the region. We present a new modality of treatment for this condition by using diode laser of 980 nm.

Here we report on two patients with foliate papillitis. Both these patients were treated conservatively but experienced only temporary relief from pain. We used diode laser of 980 nm for their treatment and they experienced significant reduction in their pain levels. Since there is not much published literature on Foliate Papillitis or on use of lasers to treat this condition, this is being presented as an alternative treatment for patients who have foliate papillitis and do not get relief from conservative methods.

At one year follow-up, both the patients were free of symptoms. We believe this is the first time that diode laser has been used for the treatment of foliate papillitis.

Diode laser appears to be a good alternative treatment modality for the treatment for patients with foliate papillitis.

**Key words:**- Diode, Foliate, Laser, Papillitis

[^a]: Corresponding author

Dr. Jagadish Ebenezer
Professor & Head – Dental Laser Clinic
Department of Dental & Oral Surgery
Christian Medical College – Vellore, Tamilnadu – India
Email: ebenezermie@gmail.com
INTRODUCTION

The richly differentiated surface of the tongue displays various kinds of papillae that play critical roles in mastication and gustatory system. These are the filiform papillae, the fungiform papillae, the circumvallate, and the foliate papillae[1]. Because of their localization, shape, variability and seeming lack of functional significance, the foliate papillae have drawn very little attention in recent literature [2]. For reasons not properly understood, the foliate papillae may become enlarged, and inflamed resulting in the condition called as Foliate Papillitis. The symptoms may range from moderate to severe pain on a daily basis which may affect the unilateral/bilateral posterior-lateral surface of the tongue [3]. The etiologic causes for foliate papillitis are attributed to local trauma.[4] The treatment of this disease includes symptomatic relief and relieving all causes of trauma to the region [4]. Foliate papillitis is a rare condition with little literature being published on its treatment [6].

Diode lasers have been used to treat a variety of dental pathological conditions [5]. However, this is the first time that a diode laser has been used to treat Foliate Papillitis on two patients and the results are extremely promising. Since there is not much published literature on Foliate Papillitis or on use of lasers to treat this condition, this article is being presented to highlight an alternative treatment modality for patients who have foliate papillitis and do not get relief from conservative methods.

Case Report 1:

A 45 yrs. old gentleman presented to the Dental OPD complaining of Pain in the right and left lateral borders of his tongue since last one year. He had been to several clinics and used several medicines but his symptoms of pain never fully disappeared. At times the pain in his tongue spread over the entire lateral surfaces causing difficulty for him to eat. His medical history was unremarkable and he had no underlying medical comorbidities. He also had no history of using betal nut and tobacco in any form.

On examination of his tongue, at the lateral posterior aspect, the foliate papillae were enlarged on both sides of his tongue. He had acute tenderness on palpation of the foliate papillae on both sides of his tongue. (FIGURE 1 & 2) There was no induration present. In addition to the inflamed foliate papillae on both side of his tongue, he also had clinical signs of Geographic tongue. However, he did not experience any symptoms on the dorsum of his tongue where depapillation was present. He had no sharp cusps and his oral hygiene was good. Based on the clinical findings, a diagnosis of foliate papillitis was arrived at. Since the patient had already had several conservative treatments before to remove the local factors, a decision was taken to ablate the enlarged papillae with the help of a diode laser of 980 nm. Accordingly, after anaesthetising the area of the enlarged papillae with 2% lignocaine solution, the diode laser was used to ablate the region of the foliate papillae on both sides of the tongue to a dept of 1mm (Figure 3 & 4). Prior to the procedure, a written informed consent was obtained. Following the procedure, a topical analgesic (Benzocaine) was prescribed and the patient was recalled after two days. At the recall visit, the symptoms of pain have significantly reduced on both sides of the tongue with the site of the laser ablation gradually healing. About one year later at follow-up(Figures 5 & 6), he was completely free of pain and the site of laser ablation had completely healed on both the sides of his tongue. He did not experience any loss of taste sensation and was able to eat without any symptoms.
Case Report 2:

A 50 yrs old lady reported to our dental OPD complaining of an intermittent burning sensation that was present throughout the lateral border of her tongue on her right side. At times the pain would spread throughout the entire surface of her tongue on her right side. Her symptoms were present for the past three years and prevented her from eating her favourite foods. She had diabetes Mellites but her blood sugar level was well maintained under control with oral medications. She did not have any other comorbidities or risk factors

On examination, the foliate papillae on her right lateral border of the tongue were inflamed and tender (figure 7). Palpation of the inflamed foliate papillae caused her pain along the entire right lateral surface and right dorsum of the tongue. She had no local irritating factors and had used several topical medications which caused little to no improvement in her symptoms.

Based on her history and clinical examination, a diagnosis of foliate papillitis was made and a diode laser of 980nm was used to ablate the foliate papillae on the right lateral surface of her tongue to a dept of one mm (figure 8). Prior to the procedure, informed consent was obtained. Postoperatively she experienced a marked reduction in her symptoms and at one year follow-up, she remained symptom free with the ablated area having fully healed on her right lateral tongue. There was no reduction in her taste perception and she was able to eat her desired foods (figure 9).

Discussion:

For reason not properly understood, the foliate papillae may become enlarged irritated and inflamed resulting in the condition called as Foliate Papillitis. The symptoms may range from moderate to severe pain on a daily basis which may affect the unilateral/bilateral posterior-lateral surface of the tongue. The pain can sometimes become very severe that it may mimic a condition called as “Burning Mouth Syndrome” [2]. The etiologic causes for Foliate Papillitis are attributed to local trauma to the area [2]. The treatment of this disease includes symptomatic relief and relieving all causes of trauma to the region. The diagnosis is based on case history and a through clinical examination [6]. The conventional treatment options include removal of local factors [4]. For our two patients, even though the conventional treatments were carried out, the symptoms kept recurring.

The term Laser stands for ‘Light amplification by stimulated emission of radiation’ [7]. The diode laser is an active solid semiconductor laser which converts electrical energy into light energy by using elements like gallium, arsenide, aluminium and indium [8]. The light energy from the diode laser with a specific wavelength (810-980 nm) is greatly absorbed by the soft tissues than the hard tissues, so diode lasers are preferred for the management of soft tissue lesions [9]. Diode lasers have been used to treat a variety of dental pathological conditions [9]. Since both our patients suffered from enlarged and inflamed foliate papillae which did not respond to local medications or to removal of local irritating factors, we decided to use a diode laser of 980 nm for ablating these lesions.

The decision to ablate these lesions was taken after explaining to the patient the risks of altered taste sensation and the possibility of return of symptoms at a later date. However, during post operative follow-up after one year, neither of our patients experienced these two problems. This is the first time that a diode laser has been used to treat Foliate Papillitis and the results are extremely promising. Since there is not much published literature on Foliate Papillitis or on use of lasers to treat this condition, this article is being presented to highlight the efficiency of diode lasers in the treatment of Foliate Papillitis.
Conclusion:
This article explains the role of diode laser 980 nm in the treatment of foliate papillitis. It also highlights the increased treatment options for patients who have this oral condition. Further studies may be required to form clinical protocols on using diode lasers to treat foliate papillitis.

Declaration of Patient Consent:
The authors certify that they have obtained all the appropriate patient consents. Both patients had given their consents for their images and other clinical information to be published in the journal. They have understood that every attempt has been made to conceal their identity but that anonymity cannot be guaranteed.

Conflict of Interest:
There are no conflicts of interest

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FIGURES

FIGURE 1: CASE 1 – FOLIATE PAPILLITIS ON LEFT LATERAL TONGUE

FIGURE 2: CASE 1 – FOLIATE PAPILLITIS ON RIGHT LATERAL TONGUE

FIGURE 3: CASE 1 – IMMEDIATE POST ABLATION - LEFT LATERAL TONGUE

FIGURE 4: CASE 1 – IMMEDIATE POST ABLATION - RIGHT LATERAL TONGUE
References:


