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TRAUMATIC IRRITATION FIBROID: ETIOLOGY, DIAGNOSIS AND CLINICAL MANAGEMENT

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Abstract

Traumatic irritation fibroids are a benign lesion commonly found in dental practice, caused by chronic mechanical trauma to the oral mucosa. This condition represents a hyperplastic response of soft tissues, occurring in areas subject to constant friction or pressure, such as the oral mucosa, gums and tongue. Clinically, the lesion presents as a well-defined mass, of firm consistency, with a color similar to the normal mucosa, being usually painless. The diagnosis is based on anamnesis, clinical examination and histopathological confirmation, with the aim of differentiating it from other oral lesions, including those with malignant potential. Standard treatment involves removal of the causative factor and complete surgical excision of the lesion. Modern technologies, such as laser, offer significant advantages in terms of postoperative recovery and aesthetics. Although the course is generally favorable, complications such as relapse or local inflammation can occur in the absence of proper management. Prevention, through patient education and the elimination of chronic trauma, plays an essential role. This article provides a comprehensive insight into the etiology, diagnosis, treatment, and complications associated with traumatic irritation fibroids, emphasizing the importance of prompt intervention and personalized management for each patient.

Keywords*:* Fibroids of traumatic irritation, benign oral lesions, chronic trauma, surgical excision.

Introduction

Traumatic irritation fibroids are a common benign lesion in dental practice, caused by repetitive mechanical stimuli that cause a reactive fibrous hyperplasia of the oral mucosa. This pathology represents an adaptive response of the body to chronic trauma, usually occurring in areas prone to friction, such as the edges of the tongue, inner lip, gums or areas in contact with inappropriate dental prostheses. Although not a serious condition, traumatic irritation fibroids can have a significant impact on the patient's quality of life by generating discomfort or interfering with oral functions such as chewing or speaking [1-4].

Epidemiologically, this condition affects patients of all ages, but is more common among adults. Also, predisposing factors, such as parafunctional habits (e.g. nail biting, bruxism) or the use of poorly adapted dental prostheses, contribute to the development of the lesion. The fibroid

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usually presents itself as a small, well-defined mass of firm consistency and has a color similar to that of the normal mucosa, which can make it difficult to recognize it early [2-4].

The importance of recognizing this lesion lies in preventing complications such as increased size and significant discomfort. Also, correct diagnosis is essential to differentiate fibroids from other oral lesions, some of which have malignant potential, such as squamous cell carcinoma or premalignant lesions [1,3-5].

Histologically, traumatic irritation fibroids are predominantly composed of excess collagen fibers, covered by a stratified squamous epithelium that can present hyperkeratosis in case of continuous exposure to trauma. Although the lesion is considered benign, complete excision and removal of the irritant factor are necessary to prevent recurrence [2-5].

The treatment of this condition involves a multidisciplinary approach, including identifying and eliminating the causative factor, as well as surgical excision of the lesion. The use of modern technologies, such as lasers, has facilitated surgeries and reduced recovery time, providing significant benefits to patients.

In addition to clinical aspects, prevention plays a crucial role in the management of this condition. Educating patients about oral hygiene, adjusting dentures and avoiding vicious habits are essential measures in reducing the incidence of fibroids from traumatic irritation. The role of the dentist is to monitor the evolution of patients and to intervene promptly in case of recurrences [2-6].

This review aims to provide a comprehensive perspective on traumatic irritation fibroids, addressing issues related to etiology, differential diagnosis, clinical management and prevention. By understanding this injury in detail, healthcare professionals can optimize treatment and improve patients' quality of life.

Etiology and pathogenesis

Traumatic irritation fibroids have a multifactorial etiology, being the result of a reactive response of the oral mucosa to chronic or repetitive trauma. The most common causes include incorrectly fitted dentures, sharp edges of dental work, incorrectly made fillings, or parafunctional habits such as cheek biting or bruxism. These repeated traumas cause chronic inflammation in the tissues, which stimulates fibroblasts to produce excess collagen, leading to injury [4-7].

The pathogenic process involves several steps, starting with local microtraumas that affect the integrity of the mucosa. The resulting inflammation activates immune system cells, such as macrophages and lymphocytes, which release pro-inflammatory cytokines. These molecules signal fibroblasts to produce excess extracellular matrix, which causes the formation of a well-defined fibrous mass [4-8].

Another factor that contributes to fibroid pathogenesis is genetic predisposition. Although rarely mentioned, some studies suggest that certain genetic variants may influence the degree of cell proliferation and susceptibility to the formation of reactive lesions. Also, systemic imbalances, such as diabetes or endocrine disorders, can worsen local inflammation, increasing the risk of fibroid development [5-8].

Although most traumatic irritation fibroids (Fig. 1) are benign, there are rare cases in which chronic trauma can lead to dysplastic changes in tissues. This highlights the importance of removing causative factors and carefully monitoring patients to prevent complications [5-9].

In conclusion, the etiology and pathogenesis of traumatic irritation fibroids are closely related to local and systemic factors that determine a chronic inflammatory response. Understanding these mechanisms is essential to ensure appropriate treatment and prevent injury recurrence [6-9].

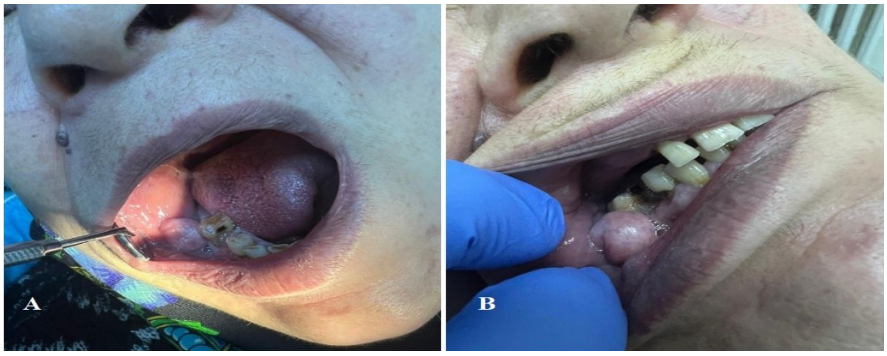

Fig. 1. Traumatic irritation fibroids of the right jugalanal mucosa:
A) in contact with the tooth involved, B) image, looking at the occlusive situation from the side.

Clinical picture and diagnosis

Traumatic irritation fibroids clinically present as a well-defined mass of variable sizes, which can have a nodular or pedicled appearance. The lesion is usually painless, but it can cause mechanical discomfort when it interferes with oral functions such as chewing, speaking, or even swallowing. Common locations include the oral mucosa, tongue, gums, and vestibular region, especially in areas subject to constant friction or pressure [8-10].

In terms of color, the fibroid has a similar shade to that of the adjacent mucosa, but it can present hyperkeratosis if it is subjected to constant irritation. Its surface is usually smooth, and the consistency varies between firm and elastic. The dimensions are generally small, with a diameter between 1 and 2 cm, but in the absence of treatment, the lesion can grow progressively [8-11].

The diagnosis of traumatic irritation fibroids (Fig. 2) is based on a combination of detailed clinical examination, anamnesis and further investigations. It is essential to identify causative factors, such as chronic trauma, defective dentures or parafunctional habits. Visual examination and palpation allow the physician to assess the shape, consistency, and degree of adhesion of the lesion to the underlying tissues [8, 10-12].

Differential diagnosis is crucial to rule out other oral lesions that may have a similar appearance, such as pyogenic granuloma, squamous papilloma, lipoma, or even malignant lesions such as squamous cell carcinoma. In this sense, histopathology plays a central role. Biopsy of the lesion and microscopic analysis confirm the diagnosis by highlighting a fibrous

mass covered by stratified squamous epithelium, often with hyperkeratosis or acanthosis [10-13].

In certain cases, medical imaging, such as X-rays or CT scans, may be necessary to assess the involvement of underlying structures, especially if the lesion is located in the vicinity of bone or other hard tissues. However, these investigations are rarely necessary in typical cases of traumatic irritation fibroids [10-14].

An important component of diagnosis is monitoring the evolution of the lesion. If the fibroid continues to grow in size or shows changes in color and texture, this may indicate the need for reevaluation and further investigation. In conclusion, the well-defined clinical picture and the use of appropriate diagnostic methods allow the rapid identification and effective treatment of traumatic irritation fibroids [8,11-14].

Fig. 2. Traumatic irritation fibroids of the jugalanright mucosa

Management and treatment

The management of traumatic irritation fibroids involves a multidisciplinary approach, focused on eliminating causative factors and complete excision of the lesion to prevent recurrence. Although fibroids are a benign lesion, treatment is essential to avoid complications and improve patient comfort [2,3,10].

The first step in treatment is to identify and eliminate the source of chronic trauma. This may include adjusting dentures, correcting incorrectly made dental fillings, or treating sharp edges of prosthetic work. In the case of parafunctional habits, such as cheek biting or bruxism, the dentist may recommend special devices, such as occlusal aligners, to reduce trauma [9,11-14].

Surgical excision is the standard treatment for traumatic irritation fibroids. The procedure is usually simple and is performed under local anesthesia. The surgeon completely removes the lesion, along with a small area of surrounding healthy tissue, to reduce the risk of recurrence. After excision, the wound is sutured to promote healing and reduce the risk of infection. In the case of larger fibroids or those located in difficult anatomical areas, more detailed surgical planning may be necessary [8,11-15].

Modern technologies such as CO2 laser or electrocautery offer effective alternatives for fibroid excision. These methods have advantages such as reduced bleeding, faster healing time,

and minimal postoperative discomfort. Also, the use of lasers minimizes the risk of infection and ensures aesthetic healing [11-15].

Postoperative care plays an important role in ensuring the success of treatment. Patients are instructed to maintain rigorous oral hygiene and avoid irritants until the operated area is completely healed. In addition, mild pain relievers or anti-inflammatories may be prescribed to manage discomfort. Your doctor may also recommend using antiseptic mouthwash to prevent infection [12-15].

Regular monitoring is crucial to identify any recurrences or complications. If the lesion recurs, a reassessment of the causal factors and possibly a new intervention is necessary. To prevent relapses, patients should be educated on the importance of eliminating chronic trauma and following the dentist's recommendations [11-16].

An essential aspect of the treatment is the patient's education. The dentist must explain to the patient the causes of fibroids and emphasize the importance of eliminating vicious habits and chronic trauma. This may also include training on the fitting of dentures or the use of mouth guards to protect the oral mucosa [13-16].

In conclusion, the management of traumatic irritation fibroids requires a comprehensive approach that combines surgical excision with the elimination of traumatic causes and patient education. Prompt intervention and close monitoring are essential to ensure complete healing and prevention of complications [12-17].

Complications and evolution

Although traumatic irritation fibroids are a benign lesion, its evolution can be influenced by factors such as the persistence of local trauma or delays in treatment. In most cases, the fibroid has a slow evolution and remains small in size. However, in the absence of removal of the irritating factor, it can progressively increase, leading to significant discomfort and functional difficulties, such as interference with chewing or speech [13-17].

The most common complication is recurrence of the lesion, especially if the causative factor has not been completely eliminated. Incomplete excision can also contribute to the recurrence of the fibroid. If the fibroid is exposed to further trauma, local inflammation or ulceration may be observed, which increases the risk of secondary infection [12,15-18].

Although rare, there is a possibility that an untreated fibroid may undergo dysplastic changes under the influence of repeated trauma, thus increasing the risk of malignant transformation. This scenario is highly unusual, but it underscores the importance of prompt monitoring and treatment [12,16-18].

Following complete surgical excision and elimination of irritating factors, the prognosis is excellent. Healing is usually fast, and postoperative scarring is minimal, especially if modern technologies such as lasers have been used. Periodic monitoring is recommended to prevent recurrence and to assess the general condition of the oral mucosa [15-19].

To avoid complications, patients should be educated on the importance of eliminating local trauma and maintaining rigorous oral hygiene. With a correct approach, the evolution of the traumatic irritation fibroid is favorable, and the risk of complications is minimized [16-20].

Conclusions

Traumatic irritation fibroids are a benign lesion commonly encountered in dental practice and develop as a response of the oral mucosa to chronic mechanical trauma. Although benign, the lesion can interfere with the patient's oral functions and comfort, requiring prompt treatment.

The diagnosis of fibroids is based on clinical observation and confirmation by histopathological biopsy. It is crucial to differentiate it from other oral lesions, such as pyogenic granuloma or premalignant lesions, to avoid serious complications.

Identifying and removing the source of chronic trauma, such as poorly fitting dentures or vicious habits, is essential. Ignoring these factors can lead to recurrence of the injury or increased discomfort.

Surgical removal of the fibroid ensures an optimal result. The use of modern technologies, such as laser, improves the patient experience, reducing pain, bleeding and healing time, while ensuring a superior aesthetic result. Relapse occurs when the causative factors are not completely eliminated or the excision of the lesion is not extensive enough. Local inflammation can occur as a result of additional trauma, highlighting the need for rigorous postoperative care.

Educating patients about oral hygiene, the correct use of dentures and avoiding traumatic habits contributes to reducing the incidence of fibroids from traumatic irritation. The active role of the dentist in prevention is indispensable. A patient-specific approach that combines surgical treatment with long-term monitoring is essential to prevent relapse and maintain oral health. Regular monitoring allows for early detection of possible complications and improves patients' quality of life.

References

1. Błochowiak K, Farynowska J, Sokalski J, Wyganowska-Świątkowska M, Witmanowski H. *Benign tumours and tumour-like lesions in the oral cavity: a retrospective analysis*. **Postepy Dermatol Alergol**. 2019. 36:744-51. doi: 10.5114/ada.2018.78805.
2. Hunasgi S, Koneru A, Vanishree M, Manvikar V. *Assessment of reactive gingival lesions of oral cavity: a histopathological study*. **J Oral Maxillofac Pathol**. 2017. 21:180.
3. Zhao X, Liu DJ, Xu CX, et al.. *Multiple irritation fibromas after dorsum linguae biopsy.* **J Craniofac Surg.** 2014. 25:524-6. doi: 10.1097/SCS.0000000000000686. [DOI] [PubMed] [Google Scholar]
4. de Santana Santos T, Martins-Filho PR, Piva MR, de Souza Andrade ES. *Focal fibrous hyperplasia: a review of 193 cases.* **J Oral Maxillofac Pathol**. 2014, 18:S86-9. doi: 10.4103/0973-029X.141328.
5. Zuñiga MD, Méndez CR, Kauterich RR, Paniagua DC. *Paediatric oral pathology in a Chilean population: a 15-year review.* **Int J Paediatr Dent.** 2013. 23:346-51. doi: 10.1111/j.1365-263X.2012.01245.x.

6. Rivera C, Droguett D, Arenas-Márquez MJ. *Oral mucosal lesions in a Chilean elderly population: a retrospective study with a systematic review from thirteen countries*. **J Clin Exp Dent**. 2017. 9:e276-83. doi: 10.4317/jced.53427.
7. Winter J, Pantelis A, Allam JP, et al. *High α-defensin and S100A7 expression and missing DOC-1 down-regulation characterize irritation fibromas of the oral cavity and may counteract malignant transformation.* **J Craniofac Surg.** 2011. 22:100-4. doi: 10.1097/SCS.0b013e3181f6c5e9.
8. Toida M, Murakami T, Kato K, et al. *Irritation fibroma of the oral mucosa: a clinicopathological study of 129 lesions in 124 cases.* **Oral Med Pathol.** 2001. 6:91-4.
9. Zarei MR, Chamani G, Amanpoor S. *Reactive hyperplasia of the oral cavity in Kerman province, Iran: a review of 172 cases.* **Br J Oral Maxillofac Surg**. 2007. 45:288-92. doi: 10.1016/j.bjoms.2006.10.001.
10. Taweevisit M, Tantidolthanes W, Keelawat S, Thorner PS. *Paediatric oral pathology in Thailand: a 15-year retrospective review from a medical teaching hospital.* **Int Dent J**. 2018. 68:227-34. doi: 10.1111/idj.12380.
11. Babu B, Hallikeri K. *Reactive lesions of oral cavity: a retrospective study of 659 cases.* **J Indian Soc Periodontol.** 2017. 21:258-63. doi: 10.4103/jisp.jisp_103_17.
12. Barker DS, Lucas RB. *Localised fibrous overgrowths of the oral mucosa***. Br J Oral Surg**. 1967. 5:86-92. doi: 10.1016/s0007-117x(67)80031-3.
13. Bakhtiari S, Taheri JB, Sehhatpour M, Asnaashari M, Attarbashi Moghadam S. *Removal of an extra-large irritation fibroma with a combination of diode laser and scalpel***. J Lasers Med Sci**. 2015. 6:182-4. doi: 10.15171/jlms.2015.16.
14. Rangeeth BN, Moses J, Reddy VK. *A rare presentation of mucocele and irritation fibroma of the lower lip.* **Contemp Clin Dent.** 2010. 1:111-4. doi: 10.4103/0976-237X.68596.
15. Dayan D, Bodner L, Hammel I, Wolman M. *Histochemical characterization of collagen fibers in fibrous overgrowth (irritation fibroma) of the oral mucosa: effect of age and duration of lesion***. Arch Gerontol Geriatr.** 1994. 18:53-7. doi: 10.1016/0167-4943(94)90047-7.
16. Naderi NJ, Eshghyar N, Esfehanian H. *Reactive lesions of the oral cavity: a retrospective study on 2068 cases*. **Dent Res J (Isfahan).** 2012. 9:251-5. https://pubmed.ncbi.nlm.nih.gov/23087727.
17. Lalchandani CM, Tandon S, Rai TS, Mathur R, Kajal A. *Recurrent irritation fibroma-"what lies beneath": a multidisciplinary treatment approach.* **Int J Clin Pediatr Dent.** 2020. 13:306-9. doi: 10.5005/jp-journals-10005-1769.
18. Dayan D, Wolman M, Hammel I. *Histochemical study of the blue autofluorescence of collagen in oral irritation fibroma: effects of age of patients and of the duration of lesions*. **Histol Histopathol.** 1994. 9:11-3. https://pubmed.ncbi.nlm.nih.gov/8003806.
19. Bouquot JE, Gundlach KK. *Oral exophytic lesions in 23,616 white Americans over 35 years of age.* **Oral Surg Oral Med Oral Pathol**. 1986. 62:284-91. doi: 10.1016/0030-4220(86)90010-1.

20. Rivera C, Jones-Herrera C, Vargas P, Venegas B, Droguett D. *Oral diseases: a 14-year experience of a Chilean institution with a systematic review from eight countries*. **Med Oral Patol Oral Cir Bucal**. 2017. 22:e297-306. doi: 10.4317/medoral.21665.

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