Annals of Case Reports
Guarnieri D, et al. Ann Case Rep: 10: 102418
www.doi.org/10.29011/2574-7754.102418
www.gavinpublishers.com

OPEN ACCESS

Case Report

GAVIN PUBLISHERS

Case Report - Masson's Tumor in The Parotid Gland

Dante Guarnieri[1*], Fernando Antônio Maria Claret Arcadipane[2], André Afonso Nimtz Rodrigues[2], Sofia Carneiro Pinto Costa[3], Clovis Antonio Lopes Pinto[2], André Luis Maion Casarim[2]

[1]Medical Student at the Jundiaí School of Medicine, São Paulo, Brazil

[2]Advisor at the Jundiaí School of Medicine, São Paulo, Brazil

[3]Head and Neck Surgery Resident at the Jundiaí School of Medicine, São Paulo, Brazil

[*]**Corresponding author**: Dante Guarnieri, Medical Student at the Jundiaí School of Medicine, São Paulo, Brazil

Citation: Guarnieri D, Arcadipane FAMC, Rodrigues AAN, Costa SCP, Pinto CAL, et al. (2025). Case Report - Masson's Tumor in The Parotid Gland. Ann Case Report. 10: 2418. DOI: 10.29011/2574-7754.102418

Received: 19 September 2025; **Accepted**: 23 September 2025; **Published**: 25 September 2025

Abstract

Masson's tumor, or intravascular papillary hyperplasia, is a primarily benign pathology, the pathophysiology of which is still poorly understood. The diagnosis is made based on clinical history and imaging tests, and the location of the tumor implies specific symptoms depending on the affected site. After diagnosis, the tumor is classified as primary, secondary or tertiary and the most commonly applied approach is surgical resection of the lesion.

The objective of this report is to share a case of the disease occurring in an unusual site, seeking to facilitate the recognition and diagnosis of this pathology for other professionals.

Case: a 39-year-old woman noticed a nodule in the region of the lower pole of the left parotid gland. With no history of previous trauma? An ultrasound of the cervical region was performed and a nodule was found in the left parotid gland. After 3 months, an FNA was performed and interpreted as atypical of undetermined significance. It was decided to request a parotid MRI, which showed a solid nodule in the lower third of the left parotid gland, with heterogeneous signal, with areas of restricted diffusion, regular contours, and no involvement of the mandibular branch or the sternocleidomastoid muscle. After the examination, a new FNA of the salivary glands was requested, which showed a cytological picture of spindle cell proliferation (Milan class III), and the nodule was then surgically excised and sent for anatomopathological analysis. The analysis confirmed the diagnosis of Masson's tumor.

Keywords: Masson's tumor; Intravascular papillary hyperplasia; Case report; Head and neck surgery; Parotid

Introduction

A rare disease, also known as intravascular papillary hyperplasia, is a primarily benign condition, usually painless, unique, and slow-developing. It constitutes a reactive, non-neoplastic intravascular proliferation, whose pathophysiology is still poorly understood. Most evidence suggests that it results from abnormal vascular organization following the formation of a thrombus in the lumen of a vessel already dilated by an injury secondary to previous trauma.

One hypothesis is that, after trauma, macrophages arriving in the region secrete fibroblast growth factor (FGF), leading to vascular endothelial proliferation, increased FGF release, and positive feedback. This entity typically appears in soft tissue in trauma-prone areas, characterized by vascular proliferation due to blood stasis [1].

Masson's tumor typically occurs in the head and neck, fingers, and chest region and is most often asymptomatic. 7 It can be classified into 3 types, listed in order of prevalence: **primary**, pure or intravascular, corresponding to approximately 56%, related to arterial or venous dilation; **secondary**, or mixed, linked to pre-existing vascular abnormalities, such as hemangioma and vascular malformation; and **tertiary**, seen in extravascular hematomas [2-3].

The pathology can lead to different clinical repercussions depending on the affected organ and is associated with nonspecific signs. For example, involvement of the maxillary sinus causes chronic symptoms of nasal obstruction, rhinorrhea, and/or epistaxis. of repetition. Imaging tests reveal a heterogeneous soft tissue polyp, but with intact adjacent structures [4].

In the case of the head and neck region, Masson's Tumor occurs mainly between the 3rd and 4th decades of lifeand may present clinically as a nodular lesion, on the lateral portion of the neck, of soft or solid consistency, subcutaneous or dermal, well-defined, which generally grows slowly, but may be accelerated if there is intralesional bleeding [4].

If the lesion is periorbital, the signs and symptoms include a firm, reddish mass with slow growth, corresponding to the proliferation of connective tissue covered by endothelium. It may or may not be accompanied by diplopia, proptosis, or eyelid hyperbolism [5].

It is worth noting that the initial radiological analysis with Doppler ultrasound reveals a hypoechoic lesion with extensive vascularization, which may suggest malignancy, such as angiosarcoma, malignant endovascular papilloma, or other diseases such as giant cell tumor, digital mucosal cyst, or dermatofibroma. However, only with the histological analysis described as papillary endothelial hyperplasia can we reach a definitive diagnosis of Masson's tumor [4].

In histopathology, there is organized thrombus and papillary structures covered by hyperplastic endothelial cells within the vascular lumen, in addition to the absence of necrosis, mitotic activity and cellular pleomorphism.

Surgery with complete resection is the best approach for definitive treatment and the one with the best prognosis, noting that there is usually no recurrence of the lesion [6].

Objective

Report a case of a rare disease in an unusual location, seeking to facilitate early recognition and diagnosis, contributing to better care for those who may have such a condition, thus contributing to the advancement of knowledge about this disease.

Method

Information collection carried out using as a basis the medical records of a private patient from a private practice, operated on at Hospital Alemão Oswaldo Cruz, in São Paulo/SP.

Case Report

NGRD, a 39-year-old female, in the second trimester of pregnancy, noticed a nodule in the lower pole of the left parotid gland. During diagnostic investigation, she underwent local ultrasound, which revealed the following findings: a nodule measuring 1.5 x 1.3 x 0.8 (L x T x AP) in the left parotid gland, hypoechoic, oval, well-defined, producing acoustic reinforcement, and with no flow in the Doppler evaluation. Therefore, the hypothesis of pleomorphic adenoma was considered.

After this, ultrasound-guided fine-needle aspiration (FNA) of the parotid gland lesion was performed. Two punctures were required to obtain the material, resulting in one vial containing 8 ml of liquid material in BD-SurePath medium and one slide. Microscopic examination revealed scarce cellularity, represented by rare isolated epithelial cells with large nuclei, with slight polymorphism in the blood medium, being interpreted as atypical of undetermined significance.

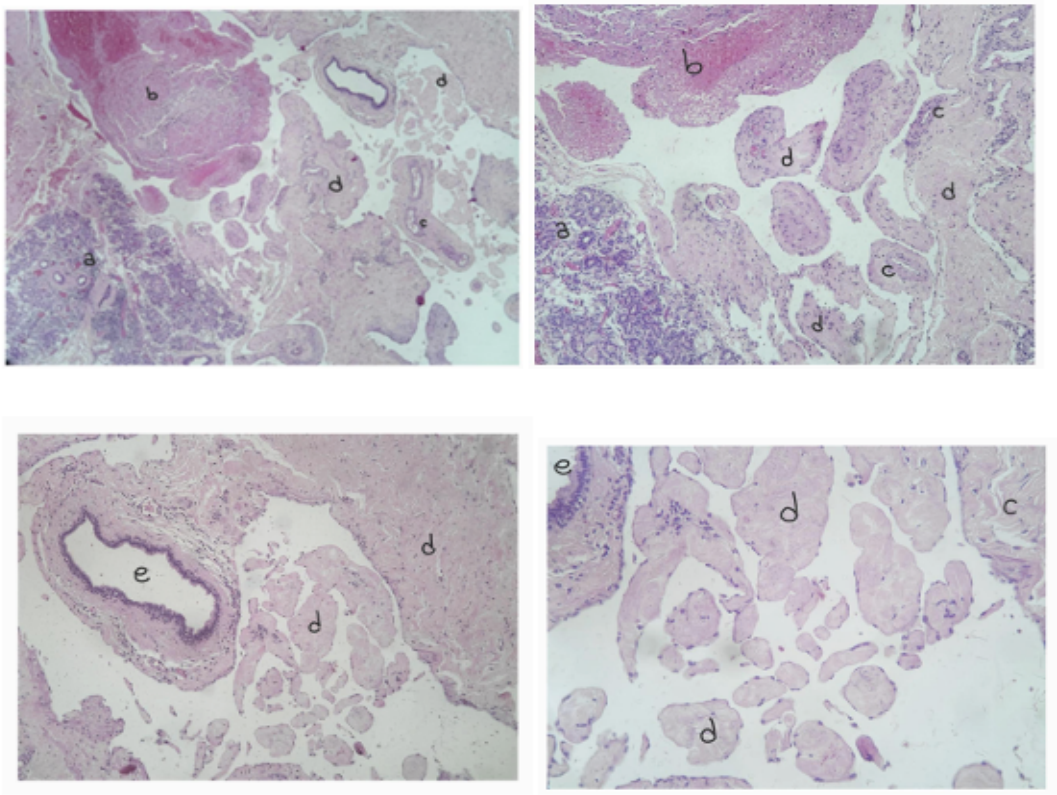
With this inconclusive result, a contrast-enhanced magnetic resonance imaging was requested, which revealed a solid nodule located in the lower third of the left parotid gland, measuring 2.0 x 1.5 x 1.4 cm (CC x LL x AP) with a heterogeneous signal, highlighting central foci of hyperintensity on T1 and low signal on T2, as well as areas of restricted diffusion, regular contours, when evaluating contrast, heterogeneous, slow and gradual impregnation of the lesion forming a plateau, without compromising the mandibular branch and the sternocleidomastoid muscle.

A new ultrasound-guided FNA of the salivary glands was performed, revealing a 1.4 cm nodule in the lower third of the left parotid gland. It was predominantly solid, hypoechoic with a hyperechoic central component, oval in shape, and had regular margins. The material was sparsely cellular, consisting of isolated spindle cells forming bundles, sometimes intersecting amid amorphous material. Elongated nuclei with condensed chromatin and slightly irregular contours were also observed. The cytological findings were of spindle cell proliferation (Milan class III).

The patient was referred for partial parotidectomy with excision of the nodule. The obtained material was sent for pathological study, the results of which are as follows: material collected from the superficial lobe of the left parotid measuring 2.4 x 2.1 x 1.4 cm. In the sections of the resected segment, it showed the presence of a lesion measuring 1.5 x 0.8 cm consisting of vascular structures

sometimes of a venous pattern (predominant), but with foci of an arterial pattern, foci of congestion and organizing thrombosis, with an area of endothelial cell proliferation surrounding the thrombus, in an arborescent "*papillary*" pattern. There was no atypia. This was consistent with arteriovenous malformation with organizing thrombosis and papillary endothelial hyperplasia (Masson's tumor).

The lesion is permeated by fibrosis and involves some atrophied lobules. Dense hyalinized fibrosis is noted involving the glandular lobules, including the excretory ducts, reactive intraparotid lymph nodes, and neurovascular bundles. Focally, lymphocytic inflammatory infiltrate is observed alongside atrophic acini and signs of chronic sialadenitis. Sections reveal dense hyalinized fibrosis involving the glandular lobules, including the excretory ducts, and neurovascular bundles. Reactive intraparotid lymph nodes and signs of chronic sialadenitis are present. Malignancy is absent.



Figures 1-4: Histopathological analysis of the parotid gland, stained with Hematoxylin - Eosin, demonstrating the following findings.

Caption: a) Lobule of the salivary gland (ducts and acini). **b)** Area of organized thrombus. **c)** Capillaries permeating papillary projections. **d)** Multiple papillary projections permeating the vascular space, formed by fibroconnective tissue, lined by epithelium. **e)** Salivary duct.

Other findings: Vascular structures, area of endothelial cell proliferation surrounding the thrombus, in a "*papillary*" arborescent pattern.

Fibrosis involving some atrophied lobules and reactive intraparotid lymph nodes and neurovascular bundles. Focally, lymphocytic inflammatory infiltrate is observed along with atrophic acini and signs of chronic sialadenitis.

There is no atypia, pleomorphism, mitotic activity, or necrosis. This is consistent with arteriovenous malformation with organizing thrombosis and papillary endothelial hyperplasia, Masson's tumor.

Discussion

After extensive research on the subject, it was possible to verify that Masson's tumor is a pathology that has still been little studied and explored, and it is not possible to find literature that explains its pathophysiology, correct epidemiology and forms of treatment, demonstrating the need for further studies so that the medical community can understand and diagnose this pathology more easily.

One of the most prevalent tumors in the parotid glands is pleomorphic adenoma, a benign condition with the potential for malignant transformation and whose treatment is surgical. There are other benign and malignant conditions of these glands that are included in the differential diagnosis with a higher prevalence and incidence than Manson's tumor. In this case, the necessary workup was undertaken to elucidate the diagnosis before surgical indication, but this was not possible, as the patient underwent the procedure without adequate characterization of the nature of her nodule.

The definitive diagnosis of Manson's tumor was made only after anatomopathological study. At this point, we can highlight the diagnostic difficulty of this condition, as it is not among the most common diseases that manifest as nodules and affect salivary glands. Furthermore, diagnostic attempts through FNA can be inconclusive, since the collection would be of connective tissue, endothelium, and fragments of thrombosis, without other characteristics, which does not exclude malignancy. However, at the same time, to confirm malignant lesions it would be necessary to find cells in mitosis and/or atypical cells.

VORUZ. F [4], although the tumor location and the symptoms of rhinorrhea, nasal obstruction, and epistaxis presented by the patients were different from those presented in this case report, both studies demonstrated that imaging tests such as computed tomography and magnetic resonance imaging were essential steps in determining the appropriate course of action. It is important to emphasize that additional tests should be requested according to the affected region. For example, in cases of maxillary sinus tumors, nasal endoscopy was chosen, and in cases of parotid tumors, the appropriate tests were parotid gland ultrasound and FNA.

In the case reported by CARTA F. [6], a mass that had appeared 4 years earlier and measured only 2 cm in its largest dimension underwent magnetic resonance imaging of the head as the first examination for diagnostic investigation and, as the result was suggestive of a benign hypervascularized lesion, FNA was not performed.

The difficulty and delay in diagnosis, especially before the anatomopathological study, negatively affects the patient and the medical team by generating uncertainty during the process, in addition to the need to request numerous tests, which increases the patient's exposure and the costs of the propaedeutics.

One of the factors that contributes to the difficulty of diagnosis is the variety of presentations of intravascular papillary hyperplasia, such as the clear difference between the case reported here and the case of EGUSHI T. [7], since the first One reported an expansile lesion with mass effect in the parotid gland, and the second reported a lytic lesion in the mandible. It is important to note that in the latter case, the patient had a history of local trauma and that the lesion remained stable for 8 years. Furthermore, immunohistochemistry was required to reach a definitive diagnosis [8].

The best-evidenced approach is surgical excision of the lesion, and its application depends on several factors: the lesion is small enough to allow complete excision; the lesion is close to important organs; a new approach after clinical therapy has failed; and the possibility of a better postoperative appearance than maintaining the pre-existing lesion. Tumor recurrence is rare.

In CARTA F [6] the surgical procedure performed was subtotal parotidectomy with preservation of the facial nerve through the use of continuous intraoperative facial nerve monitoring.

As an example consistent with the literature, the possibility of differential diagnosis with malignant lesions and the option for complete resection of the lesion with sending the material for anatomopathological analysis were addressed.

Conclusion

It was possible to conclude that this is a rare pathology with a large number of differential diagnoses, which leads to the performance of several non-invasive and invasive procedures in an attempt to reach a definitive diagnosis before indicating the appropriate treatment.

The definitive treatment indicated for Masson's Tumor is complete surgical resection of the lesion, and only histological diagnosis can guarantee the absence of malignancy.

References

1. Kun-Yong S, Seungkoo L, Yeonjin J, Sang-Yeul L. (2021). Intravascular papillary endothelial hyperplasia of the finger: a case of Masson's tumor. Case Reports Plast Surg Hand Surg. 8: 23-26.
2. de Godoi SM, Naspolini AP, Sasso SE, de Boit MT, Suchard G. (2022). Intravascular papillary endothelial hyperplasia (Masson's tumor) in hallux nail matrix: a case report. Surgical & Cosmetic Dermatology. 14: e20220157.
3. Sasso SE, Naspolini AP, Milanez TB, Suchard G. (2019). Masson's tumor (intravascular papillary endothelial hyperplasia). An Bras Dermatol. 94: 620-621.
4. Voruz F, Arnoux G, Charles-Arnaud S, de Vito C, Landis BN. (2022). Intravascular papillary endothelial hyperplasia (Masson's tumor) of maxillary sinus. Brazilian Journal of Otorhinolaryngology. 88: 141-145.

5. García IG, García AC, García AT, Díez EP, Lasso MC. (2022). Intravascular papillary endothelial hyperplasia, the unusual diagnosis of an orbital mass, Archivos de la Sociedad Española de Oftalmología, 97: 109-112.

6. Carta F, Sionis S, Ledda V, Gerosa C, Puxeddu R. (2018). Parotid Masson's tumor: case report. Brazilian Journal of Otorhinolaryngology. 84: 523-525.

7. Eguchi T, Nakaoka K, Basugi A, Arai G, Hamada Y. (2020). Intravascular papillary endothelial hyperplasia in the mandible: a case report. The Journal of international medical researchvol. 48: 300060520972900.

8. Masson P. (1923). Hémangioendothéliome végétant intravasculaire. Bull Soc Anat Paris.