Annals of Plastic and Reconstructive Surgery

Case Report
Published: 16 May, 2022

Fibromyxoma of the Mandible and Reconstruction with a Free Flap of the Fibula

Dani Bouchra[1], El harrak Samli[2], Olaya Hamidi[1], Oussalem Amine[1] and Boulaadas Malik[1]*

[1]Department of Maxillofacial Surgery and Stomatology, IBN SINA University Hospital, Morocco

[2]Department of Plastic and Reconstructive Surgery, IBN SINA University Hospital, Morocco

Abstract

Introduction: Fibromyxoma is a rare variety of benign jaw tumors. According to the WHO classification of 1992, myxoma of the jaw is an odontogenic tumor that develops from the ectomesenchyme. Clinical and radiological manifestations are variable and nonspecific and may be confusing with other tumors.

Case Report: We describe a rare case of odontogenic fibromyxoma of the left hemi mandible, observed in a 45-year-old patient admitted to our maxillofacial surgery department in May 2017. Clinically, the patient presented with painless and firm left cheek swelling. CT scan of the facial mass showed an expansive osteolytic process blowing through the entire left hemi mandible. A biopsy was made and the histological findings were in favor of an odontogenic fibromyxoma. In front of the large tumor extension, a hemi-mandibulectomy was decided for our patient. The reconstruction of the substance loss was made by a free flap of the fibula.

Discussion: The diagnosis of fibromyxoma in our case was based on clinical, radiological and anatomopathological arguments. Although histologically benign, the local aggressiveness of this tumor and its high rate of recurrence require radical surgical treatment beyond the limits of the lesion in order to avoid recurrence. The resulting loss of substance involves surgical or prosthetic repair.

Introduction

Fibromyxoma is a rare variety of benign jaw tumors. According to the WHO classification of 1992, myxoma of the jaw is a tumor that develops from an ectomesenchymal origin [1]. These cells produce a mucoid-rich intercellular matrix with or without odontogenic epithelium [2].

Fibromyxoma is classified as a specific type of myxoma, it is composed of fusiform cells sitting in an abundant myxoid substance, with few collagen fibers; when the fibers are more abundant, and it is called fibromyxoma. Clinical and radiological manifestations are variable and nonspecific and might be confusing with other odontogenic lesions [2].

In this article, we report a case of a mandibular fibromyxoma. Where the substance defect created after surgical resection was reconstructed by a free flap of the fibula. Through this case, we will review the clinical presentation, radiographic examination, histological features, differential diagnoses, and management of this rare tumor. Also, we will demonstrate the interest of the fibula free flap in the reconstruction of the mandibular defect.

Case Presentation

A 45-year-old female patient admitted to our maxillofacial surgery department in May 2017, for gradually increasing, painless swelling of the left cheek (Figure 1). Extraoral examination revealed a light facial asymmetry and the intraoral examination revealed a swelling of the left vestibule. They were no teeth on the left mandibular arc and overlying mucosa was hypertrophied. On palpation, all the inspectory findings were conformed. The lesion was hard in consistency and non-tender.

The panoramic radiograph revealed a well-defined multilocular lesion in the left part of mandible with scalloped outline (Figure 2A). CT scan of the facial mass showed an expansive osteolytic process blowing through the entire left mandible (Figure 2B).

A biopsy was made to have a confirmed diagnosis before surgery. Histological study confirmed the diagnosis of fibromyxoma.

OPEN ACCESS

Correspondence:
Bouchra Dani, Department of Maxillofacial Surgery and Stomatology, IBN SINA University Hospital, Rabat, Morocco,
E-mail: Bouchradani89@gmail.com

Received Date: *27 Apr 2022*
Accepted Date: *10 May 2022*
Published Date: *16 May 2022*

Citation:
Bouchra D, El harrak Samli, Hamidi O, Amine O, Malik B. Fibromyxoma of the Mandible and Reconstruction with a Free Flap of the Fibula. Ann Plast Reconstr Surg. 2022; 6(2): 1089.

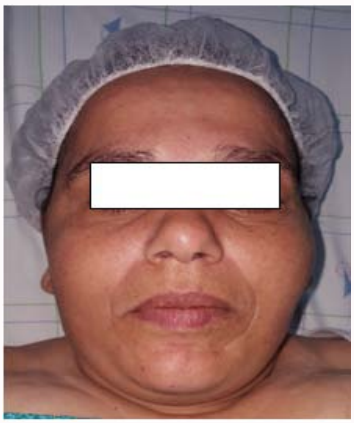

Figure 1: Picture of the patient showing the left cheek swelling.

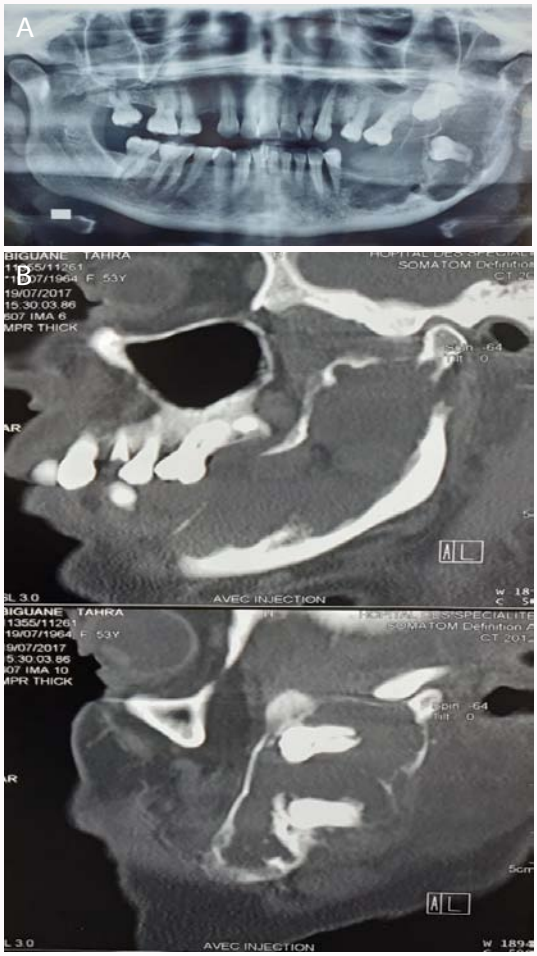

Figure 2: A) Orthopantomogram showing multilocular radiolucencies lesions. B) CT scan of the facial mass showing an expansive osteolytic process blowing through the entire left mandible.

The patient underwent surgery; the approach was by a cervical incision, then a complete excision of the tumor (Figure 3). The dissection of the facial pedicle was made to preserve it for micro anastomosis for our fibula free flap.

The fibula flap was modeled to have the aspect of the hemi mandible; the modeling was made in the donor site. An osteotomy was mad to create the ramus and the horizontal branch of the mandible

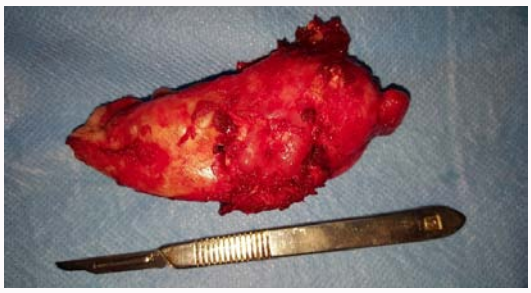

Figure 3: Picture showing the tumor.

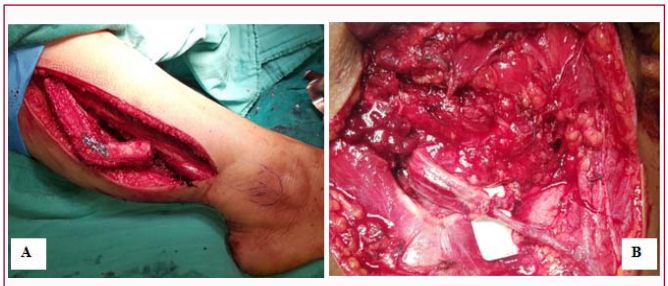

Figure 4: A) Fibula flap after dissection and modeled in the shape of the hemi mandible. B) Micro anastomosis of the fibula flap.

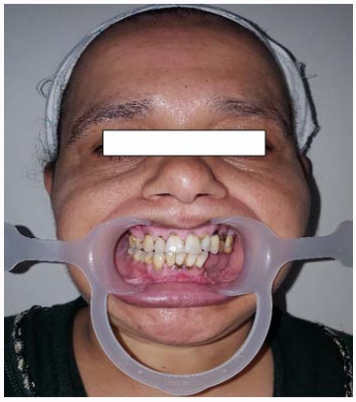

Figure 5: Postoperative picture after 3 months, showing the stability of the dental occlusion.

and fixed together with 2 miniplates and 8 mini screws (Figure 4A).

Then the micro-anastomosis was made (Figure 4B) and the fibula flap was fixed to the other hemi mandible with 2 miniplate and 8 mini screws (7 mm).

The follow ups were simple. We had excellent aesthetic and functional outcomes. A symmetrical face and a stable dental occlusion (Figure 5).

The histological study of the specimen revealed that there was a hypocellularity and the presence of stellate, spindle-shaped cells into a loose myxoid extracellular matrix very rich in collagen fibers. Confirming the diagnosis of fibromyxoma.

No recurrence was detected 5 years after surgery (Figure 6).

Discussion

Odontogenic fibromyxoma is a rare tumor that presents 3% to 8% of all odontogenic tumors and cysts of the jaws [3]. The average age of apparition of this tumor is between 20 to 40 years [4], with a sex ratio

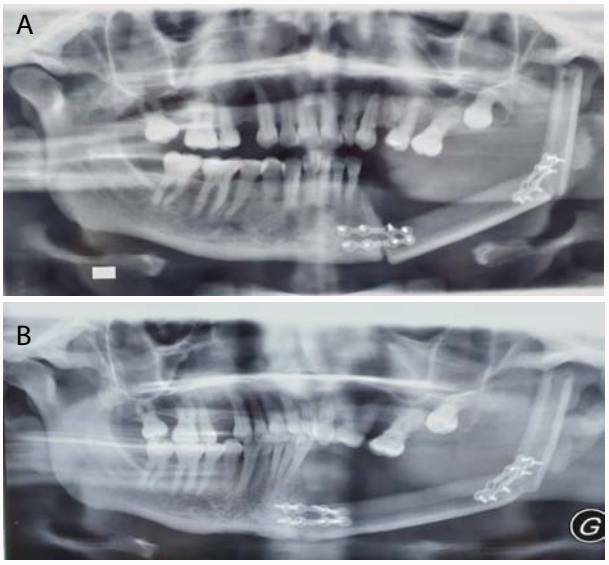

Figure 6: Postoperative orthopantomogram. A) Postoperative control, B) One year after surgery.

of 1.5:1. This neoplasm is very rare in the head and neck region, the mandible is involved more frequently than the maxilla [4,5]. It has a predilection site in the jaws, the molar and premolar regions [5].

Odontogenic fibromyxoma is a locally invasive benign tumor [4], slow growing, painless which makes it generally an asymptomatic tumor. The most common clinical features that we can find are swelling, displacement of teeth and paresthesia [6].

The fibromyxoma can express different radiological images, unilocular or multilocular radiolucency. The multilocular radiolucencies present different appearances, the bony trabeculae within its interior structure can express "soap bubble", "honey comb" or "tennis racquet" patterns [6,7]. The most characteristic radiographic feature of fibromyxoma is the "tennis racquet" appearance. Displacement of teeth is common finding, root resorption is rarely seen, and the tumor is often scalloped between the roots [4,8].

Radiographic differential diagnosis must be done mainly with other radiolucent lesions of the jaws; Ameloblastoma, ameloblastic fibroma, odontogenic fibroma, central hemangioma, odontogenic keratocyst, central giant cell granuloma, and calcifying epithelial odontogenic tumor [4,9].

Histopathological the myxoma are the same as the fibromyxoma the difference is in the collagen amount in the stroma. The characteristics of this neoplasm are the hypocellularity, the presence of stellate, spindle-shaped cells into a loose myxoid extracellular matrix with cells presenting with thin, long cytoplasmic prolongations that give to the tissue characteristics of immature mesenchyma. Depending upon the pattern of differentiation, the histological nature of the tumor varies. It may be completely myxomatous tissue or varying proportions of myxomatous and fibrous tissue. The tumor is usually interspersed with a variable number of tiny capillaries and occasionally strands of collagen [6,10]. In the case of fibromyxoma, the amount of collagen in the mucoid stroma is more prominent [6,11].

The treatment of the fibromyxoma is surgical and varies from a simple enucleation and curettage to a block resection. The resection depends on the extension of the tumor. The recurrence is always related to an incomplete resection of the lesion. The patient should be monitored for at least two years after the surgical intervention due to the higher rate of recurrence during this period [4,9,11].

For our case the clinical, radiological and histological outcomes match the literature and confirm it. For our patient the tumor extended all over the left hemi mandible, so for a complete resection we needed to perform a hemi mandibulectomy. The reconstruction for such a large loss of substance was challenging. We needed something that can give us good functional and aesthetic results. Therefore, the best solution was to use the revascularized free fibula flap as bone graft.

Postoperative aesthetic results and correct dental occlusion were confirmed by evaluation of the oral cavity (Figure 5) and panoramic radiography (Figure 6).

References

1. Kramer IRH, Pindborg JJ, Shear M. Histological typing of odontogenic tumors. 2nd Ed. New York: Springer-Verlag; 1992.
2. Kumar N, Kohli M, Pandey S, Agarwal P. Odontogenic myxoma. J Maxillofac Oral Surg. 2014;13(2):222-6.
3. Keszler A, Dominguez FV, Giannunzio G. Myxoma in childhood: An analysis of 10 cases. J Oral Maxillofac Surg. 1995;53(5):518-21.
4. Kaffe I, Naor H, Buchner A. Clinical and radiological features of odontogenic myxoma of the jaws. Dentomaxillofac Radiol. 1997;26(5):299-303.
5. Brannon RB. Central odontogenic fibroma, myxoma (odontogenic myxoma, fibromyxoma), and central odontogenic granularcell tumor. Oral Maxillofac Surg Clin North Am. 2004;16(3):359-74.
6. Shah A, Lone P, Latoo S, Ahmed I, Malik A, Hassan S, et al. Odontogenic myxoma of the maxilla: A report of a rare case and review on histogenetic and diagnostic concepts. Natl J Maxillofac Surg. 2011;2(2):189-95.
7. Haser GC, Su HK, Hernandez-Prera JC, Khorsandi AS, Wang BY, Urken ML. Pediatric odontogenic fibromyxoma of the mandible: Case report and review of the literature. Head Neck. 2016;38(1):E25-8.
8. Sahil K, Ravi M, Vijay W, Nagaraju K, Sumit G, Swati G. Sunburst appearance in odontogenic myxoma of mandible: A radiological diagnostic challenge. J Oral Maxillofac Radiol. 2016;4(1):18-21.
9. Dietrich EM, Papaemmanouil S, Koloutsos G, Antoniades H, Antoniades K. Odontogenic fibromyxoma of the maxilla: A case report and review of the literature. Case Rep Med. 2011;2011:238712.
10. Muzio LL, Nocini P, Favia G, Procaccini M, Mignogna MD. Odontogenic myxoma of the jaws a clinical, radiologic, immunohistochemical, and ultrastructural study. Oral Surg Oral Med Oral Pathol Oral Radiol Endod. 1996;82(4):426-33.
11. Sajad B, Subhas B, Kumuda R, Shruthi R, Renita C. A large and rapidly expanding odontogenicmyxoma of the mandible. J Oral Maxillofac Radiol. 2017;5(1):22-6.