Chondrolipoma of the lip: A case report from a secondary health care center in Nigeria

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ABSTRACT

Introduction: Chondrolipomas are rare, benign mesenchymal tumors characterized by proliferation of mature adipocytes associated with variable amounts of mature cartilaginous tissue. Chondrolipoma of the oral cavity is an uncommon clinical presentation. Case Report: We present the case of a 50-year-old, male, Nigerian, type 2 diabetic presenting with a painless, slow growing swelling of the lower lip of two years duration which did not respond to antibiotic therapy. Excision and histopathologic assessment of the mass revealed a diagnosis of chondrolipoma. Conclusion: Chondrolipoma should be included in the differential diagnosis of masses in the oral cavity.

Keywords: Chondrolipoma, Lower lip, Oral cavity

INTRODUCTION

Lipoma, a benign tumor of fat, is the most common soft tissue tumor of adulthood [1]. They are of mesenchymal origin, and consist of adipocytes arranged in lobules and separated by septa of fibrous connective tissue. They are occasionally associated with other mesenchymal elements giving rise to different histopathological variants including fibrolipomas, angiolipomas, myolipomas, spindle cell lipomas, chondroid lipomas, osteolipomas, and chondrolipomas [1–3]. Lipomas are usually well circumscribed mobile neoplasms. They are usually composed of mature adipocytes. They may occur anywhere on the body and are usually asymptomatic and superficial [4, 5]. 1–5% of lipomas occur in oral cavity [4–6]. Of the different variants of lipomas that have been described [2, 6], fibrolipomas are the most common variants seen, after classic lipomas, in the oral cavity, with the buccal mucosa being the most common oral location [7]. Chondrolipomas are rare variants of lipoma characterized by metaplasia of mature cartilage and have been occasionally described in the oral cavity, predominantly on the tongue but also on the lip [4, 6, 8, 9]. We report a case of chondrolipoma of the lower lip in a 50-year-old, male, Nigerian, the first such report, we believe from Nigeria.

CASE REPORT

A 50-year-old male presented with a 2-year history of a painless slow growing swelling on the lower lip. He was healthy looking but had mild facial asymmetry evidenced by a dome-shaped swelling on the left part of his lower lip. There was no history of trauma or infection. There was no history of intermittent expansion or reduction in its size of the swelling. He presented to a physician who placed him on antibiotics but there was no obvious improvement. He was referred to see a maxillofacial
surgeon. He is a known type 2 diabetic controlled with metformin and glibenclamide.

On examination, a mass was seen on the middle third of the left half of the vermilion of the lower lip which was firm, sessile, non-tender, with a smooth surface, and measured about $2 \times 1$ cm. The overlying skin was normal. Posteriorly, the mass extended just into the labial mucosa. The lesion was largely extraoral (visible without opening the mouth), and had no relationship with the state of the upper teeth which showed proclination of the upper anterior teeth 1, 12, 21, 22 with diastema, or the alveolar process. Intraoral examination showed fair oral hygiene with moderate accumulation of plaque and calculus. There was no regional lymphadenopathy seen. The clinical differential diagnoses included mucocele, lipoma, and fibroma.

Aspiration of the mass was done but there was no aspirate. He was then scheduled for surgical enucleation and biopsy. Treatment was done under local anesthesia; a mental nerve block was given. A linear incision was made over the surface of the swelling, using a scissors, the mucosa was carefully separated. A yellowish well circumscribed globular mass popped out. It was placed in formalin for histology. Hemostasis was achieved. A vicryl suture was used to appose the incision. He was placed on caps Amoxil 500 mg every 8 hours for 5 days and tabs Vitamin C 200 mg every 8 hours for 2 weeks and was encouraged to do warm saline lip bath.

Pathological examination revealed grossly, a nodular, grayish white, soft-to-firm mass measuring $2 \times 1.8 \times 1.5$ cm and weighing 2 g. Cut sections showed an admixture of grayish white and yellowish tissue. It was wholly processed.

Microscopy showed a circumscribed mesenchymal proliferation, with a thin fibrous capsule, composed of mature adipose tissue separated into lobules by thin, faintly basophilic fibrous septae. Foci of metaplastic hyaline cartilage are seen within the mass along with delicate, often congested capillaries (Figures 1 and 2). The cartilage cells as well as the fat cells did not exhibit any mitosis, pleomorphism, or any other cytological atypia. These features are consistent with chondrolipoma.

**DISCUSSION**

Lipomas present as nodular masses in the buccal mucosa, buccal vestibule, tongue, floor of the mouth in both sexes with a median age of 40 years [7]. Chondrolipomas were first described in 1976 and generally are a rare variant of lipomas [8]. Between 1976 and 2014, only 14 cases were reported in the literature, out of which 3 were seen in the lower lip [9]. In a series on oral lipomas published in 2019, Osterne et al. reported 1 chondrolipoma out of 101 lipomas and variants [7]. Chondrolipomas appear to be diagnosed in older individuals, only two cases have been documented in people under 30 years [10]. They are also noted to be uncommon in children and in females [8, 10, 11]. Our case presentation occurred in a 50-year-old man, similar to previously documented cases. These tumors become apparent and are diagnosed in later life, however they appear to originate in early life, within the first two decades, however more studies would be required to verify this postulate [5]. Generally, it has been observed that lipomas are more common in the male gender and appears to be same for chondrolipomas. The case presented is in a male, aligning with documented cases. Chondrolipomas histologically are composed of mature cartilage typically arranged in lobules within mature adipocytes [12]. There are a number of postulations as to the histogenesis of this tumor which is not clearly known, however it differs remarkably from all other variants of lipoma [13]. Raj et al. [4] described four possible hypotheses to explain the histogenesis of this tumor. The first is that the tumor could be a true mesenchymoma in which both the chondroid and adipose elements are neoplastic, arising in pluripotent mesenchymal stem cells which then differentiate into adipogenic and chondrogenic cells. The second is that only the adipocytes are neoplastic, and cartilaginous cells then develop within
these neoplastic adipocytes either spontaneously or as a metaplastic reaction triggered by prolonged irritation. The third is the possibility that the neoplastic adipose tissue may develop in a pre-existing cartilaginous choristoma. Finally, neither component may be neoplastic at all, with the lesion arising from a combination of hamartomatous adipocytes and choristomatous cartilaginous growth. Our patient has a history of controlled type diabetes mellitus and although lipoma of the tongue has been reported in a type 2 diabetic [14], it is not clear what role, if any, type 2 diabetes mellitus has in the pathogenesis of chondrolipoma. This is against the backdrop of association documented between type 2 diabetes mellitus and increased predisposition to precancerous and cancerous lesions of the oral cavity [15]. Regardless of pathogenesis, chondrolipomas are generally well circumscribed tumors and yield themselves to surgical excision which is the treatment of choice for these tumors, with no cases of recurrence having been reported [4, 16].

CONCLUSION

Although there are more common causes, chondrolipoma should be included in the differential diagnosis of masses in the oral cavity. The prognosis is good and this should result in reduced anxiety for both clinician and patient. This report presented being the first of its kind, to the best of our knowledge, from Nigeria also clinician and patient. This report presented being the first of its kind, to the best of our knowledge, from Nigeria also in all clinical situations regardless of geographical location.

REFERENCES

1. Kumar V, Abbas AK, Aster JC. Robbins and Cotran Pathologic Basis of Disease. 9ed. Philadelphia: Elsevier Saunders; 2015. p. 1220.
2. Weiss SW, Goldblum JR. Benign lipomatous tumors. In: Weiss SW, Goldblum JR, editors. Enzinger and Weiss’s Soft Tissue Tumors. 4ed. St. Louis: Mosby; 2001. p. 571–639.
3. Castilho RM, Squarize CH, Nunes FD, Pinto Júnior DS. Osteolipoma: A rare lesion in the oral cavity. Br J Oral Maxillofac Surg 2004;42(4):363–4.
4. Raj V, Dwivedi N, Sah K, Chandra S. Chondrolipoma: Report of a rare intra oral variant with review of histogenetic concepts. J Oral Maxillofac Pathol 2014;18(2):276–80.
5. Bandéca MC, de Pádua JM, Nadalin MR, Ozório JEV, Silva-Sousa YTC, da Cruz Perez DE. Oral soft tissue lipomas: A case series. J Can Dent Assoc 2007;73(5):431–4.
6. Kamakshi G, Yaranal PJ. Chondrolipoma of the lower lip: A case report. J Clin Diagn Res 2014;8(6):FD07–8.
7. Osterne RLV, Lima-Verde RMB, Turatti E, Nonaka CFW, Cavalcante RB. Oral cavity lipoma: A study of 101 cases in a Brazilian population. J Bras Patol Med Lab 2019;55(2):148–59.
8. Furlong MA, Fanburg-Smith JC, Childers ELB. Lipoma of the oral and maxillofacial region: Site and subclassification of 125 cases. Oral Surg Oral Med Oral Pathol Oral Radiol Endod 2004;98(4):441–50.
9. Narayana N, Henriksen B, Casey J. Chondrolipoma arising in the floor of the mouth and review of the literature: A case report. J Med Cases 2014;5(6):341–3.
10. Pitman KT, Bell D. Chondrolipoma of head and neck: Case report and review of literature. Head Neck 2013;35(1):F18–20.
11. Kuyama K, Fifta SF, Komiya M, Sun Y, Akimoto Y, Yamamoto H. Rare lipomatous tumours with osseous and/or chondroid differentiation in the oral cavity report of two cases and review of the literature. Int J Dent 2009;2009:143460.
12. Berg T, Gorsky M. Chondrolipoma of the tongue: A case report of a rare diagnosis. Int J Dermatol 2010;49(4):441–2.
13. Nakano M, Arai E, Nakajima Y, Nakamura H, Miyazono K, Hirose T. Immunohistochemical study of chondrolipoma: Possible importance of transforming growth factor (TGF)-betas, latent TGF-beta binding protein-1 (LTBP-1), and bone morphogenetic protein (BMP) for chondrogenesis in lipoma. J Dermatol 2003;30(3):189–95.
14. Lu SL, Zheng JJ, Wu H, et al. Tongue lipoma in an older male: A case report and literature review of patients with tongue lipoma reported in China. Oncol Lett 2016;11(4):219–22.
15. Ujpá M, Matos O, Bibok G, Somogyi A, Szabó G, Suba Z. Diabetes and oral tumors in Hungary: Epidemiological correlations. Diabetes Care 2004;27(3):770–4.
16. Nonaka CFW, Miguel MCDC, de Souza LB, Pinto LP. Chondrolipoma of the tongue: A case report. J Oral Sci 2009;51(2):313–6.

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Authors declare no conflict of interest.

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All relevant data are within the paper and its Supporting Information files.

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