A Study of Histopathological Variants of Orofacial Lipoma in a Nigerian Population

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Abstract

Background: The rarity of lipoma in the orofacial region has made it difficult to ascertain the clinicopathological pattern of orofacial lipoma in our environment. This study aims to determine the age, gender, sites and histopathological variants of orofacial lipoma in a Nigerian population.

Materials and Methods: A 21-year retrospective review was performed on patients' clinical notes, histopathology slides and reports of all histopathologically diagnosed orofacial lesions in the Department of Oral Pathology and Medicine, University of Benin Teaching Hospital, Benin City, Nigeria.

Results: Of the 1116 diagnosed lesions within the study period, there were 15 (1.3%) cases of lipoma. There was a female to male ratio of 2:1, with a mean age of 31 $\pm$ 1.2 years and the peak age group was the 4th decade of life (n=6, 40.0%). The buccal mucosa (n=8, 53.3%) and the forehead (n=4, 26.7%) were the commonest orofacial sites of the lesion. The conventional lipoma (n=8, 53.3%) was the predominant lesion, followed by angiolipoma (n=3, 20.0%), fibrolipoma (n=2, 13.3%), spindle cell lipoma (n=1, 6.7%) and intramuscular lipoma (n=1, 6.7%).

Conclusion: This study observed a low prevalence of orofacial lipoma comparable to previous reports. The lesion occurred predominantly in adult females and the buccal mucosa was the commonest orofacial site. Apart from the conventional lipoma, angiolipoma was the second most frequent histopathological variant of the lesion. Early surgical intervention and histopathological evaluation of clinically suspicious cases of orofacial lipoma is recommended to avoid facial disfigurement and to rule out a malignant lesion mimicking the benign type.

Keywords: Variants; Orofacial; Lipoma

Introduction

Lipoma is a benign tumour of fat cells and the most common soft tissue tumour. [1,2]It occurs mostly on the trunk and proximal portion of the extremities, but less frequent in the orofacial region, with a prevalence of 1% to 5% [3] and 2.2% to 4.4% of all head and neck benign tumors. [4] Lipomas have been identified in all age groups, but usually first appear between 40 and 60 years of age.Generally, there is female predilection for lipoma, while a gender balance has been reported for oral lipoma. [1]

The lesion is typically asymptomatic or slow growing, non-painful, round, sessile or pedunculated mass with a soft, doughy feel, and yellowish to pinkish for deeper lesions. The buccal mucosa is the commonest oral site and the rare oral sites are the tongue, floor of the mouth and lips. [1] Rarely, lipomas can be associated with syndromes such as hereditary multiple lipomatosis, adiposis dolorosa, Gardner's syndrome, and Madelung's disease. [5] Lipomas may grow large enough to cause significant discomfort, disfigurement or disrupt the normal functions of the body. Most lipomas are best left alone, but rapidly

growing or painful lipomas can be treated with a variety of procedures ranging from xylocaine and triamcinolone acetonide (kenalog) injections, liposuction or excision of the tumour.[5]

Histological evaluation helps to distinguish lipoma from liposarcoma which may have a similar clinical appearance.The histopathological variants of lipoma are conventional lipoma, fibrolipoma, angiolipoma, myxoid lipoma, spindle cell lipoma, myelolipoma, pleomorphic lipoma, intramuscular (infiltrating) lipoma, adenolipoma, sialolipoma and chondroid lipoma [1,5-7]. Chromosomal abnormalities have been associated with some histological variants of lipoma. The conventional lipomas often show re-arrangement of chromosomes 12q14-q15, 6p and 13q, while re-arrangement of chromosomes 16q and 13q are observed in spindle cell and pleomorphic lipomas.[7] However, all the histopathological variants of lipoma have good prognosis and low recurrence rate following surgical excision, except the intramuscular variant with high recurrence rate.[2,8]

In a Nigerian study by Ndukwe et al,[9] head and neck lipomas were reported as a common benign tumour in the region, which accounted for 17.6% of the total body lipomas. Most of the lipomas were found in the neck (33.3%) and scalp (23.1%), only 5.2% of the lesions were found in intra-oral sites. The rarity of lipoma in the orofacial region [3] has made it difficult to ascertain the clinicopathological pattern of orofacial lipoma in our environment. This study aims to determine the prevalence, age, gender, sites and histopathological variants of orofacial lipoma in a Nigerian population.

Patients and Methods

Ethical approval was obtained from the Ethical Committee of the hospital to perform a 21-year retrospective review of the clinical records and histopathology reports and slides of patients with diagnosed orofacial lesions in the Department of Oral Pathology and Oral Medicine, University of Benin Teaching Hospital, Benin City Nigeria.

The data on age, gender, orofacial sites and histopathological types of orofacial lipoma were obtained and analyzed, using SPSS version 16. Pearson's chi square correlation was performed for the variables, with confidence level set at 95% and P value of ≤ 0.05 was considered significant.

Results

Of the 1116 diagnosed lesions within the study period, there were 15 (1.3%) cases of orofacial lipoma. There were 10 (66.7%) females and 5 (33.3%) males, giving a female to male ratio of 2:1 (Table 1).

Table 1: Gender distribution of the histopatho-logical types of orofacial lipoma

Gender	Histopathological types					Total (%)
	Conventional Lipoma	Spindle cell Lipoma	Fibrolipoma Lipoma	Angiolipoma	Intramuscular Lipoma	
Male	3	-	-	2	-	5(33.3)
Female	5	1	2	1	1	10(66.7)
Total	8	1	2	3	1	15(100.0)

The mean age was 31 $\pm$ 1.2 years and the peak age group was the 4th decade of life (n=6, 40.0%) (Table 2). The buccal mucosa (n=8, 53.3%) and the forehead (n=4, 26.7%) were the commonest orofacial sites of the lesion (Table 3).

Table 2: Age distribution of the histopathological types of orofacial lipoma

Age Group	Histopathological types					Total (%)
	Conventional Lipoma	Spindle cell Lipoma	Fibrolipoma Lipoma	Angiolipoma	Intramuscular Lipoma	
0-10	-	-	1	-	-	1 (6.7)
11-20	1	-	-	1	-	2 (13.3)
21-30	1	-	-	1	1	3 (20.0)
31-40	3	1	1	1	-	6 (40.0)
41-50	3	-	-	-	-	3 (20.0)
Total	8	1	2	3	1	15 (100.0)

Table 3: Site distribution of the histopathological types of orofacial lipoma

Site	Histopathological types					Total (%)
	Conventional Lipoma	Spindle cell Lipoma	Fibrolipoma Lipoma	Angiolipoma	Intramuscular Lipoma	
Buccal	4	1	1	2	-	8 (53.3)
Forehead	3	-	-	-	1	4 (26.6)
Tongue	1	-	-	-	-	1 (6.7)
Lip	-	-	-	1	-	1 (6.7)
Submandibular	-	-	1	-	-	1 (6.7)
Total	8	1	2	3	1	15 (100.0)

The conventional lipoma (n=8, 53.3%) (Figure 1) was the predominant lesion, found mostly in females (n=5, 33.3%), the 4th and 5th decades of life (n=6, 40.0%), the buccal (n=4, 26.6%) and the forehead (n=3, 20.0%) regions. The other variants were angiolipoma (n=3, 20.0%) (Figure 2) with predilection for males (n=2, 13.3%) and buccal site (n=2, 13.3%), fibrolipoma found only in females (n=2, 13.3%) (Figure 3), spindle cell lipoma(n=1, 6.7%) (Figure 4) andintramuscular lipoma (n=1, 6.7%) (Figure 5). There was no recurrence of the lesions after surgical excision.

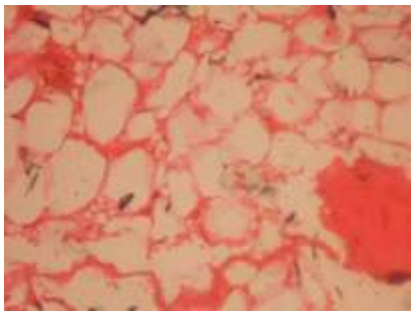

Figure 1: Conventional lipoma showing sheets of fat cells with pale cytoplasm [H&E x40]

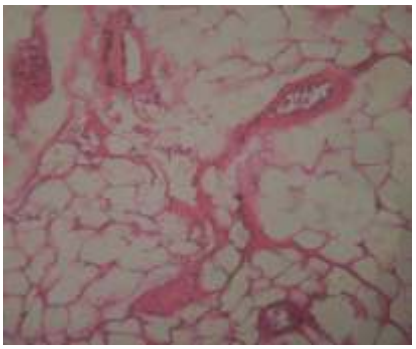

Figure 2: Angiolipoma consisting of sheets of fat cells interspersed with numerous blood vessels [H&E x40]

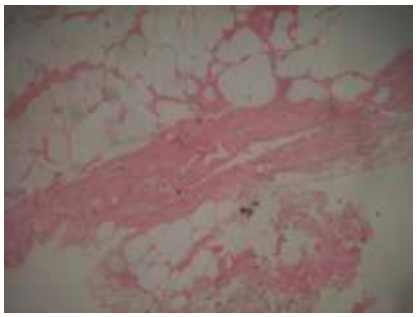

Figure 3: Fibrolipoma composed of sheets of fat cells with intervening fibrocollagenous connective tissue stroma [H&E x40]

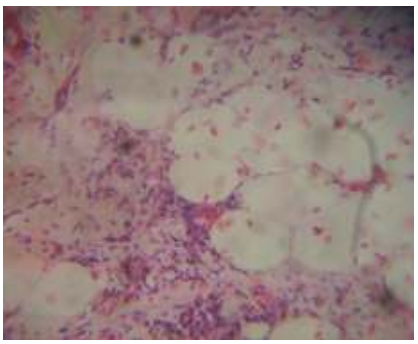

Figure 4: Spindle cell lipoma composed of sheets of fat cells surrounded spindle cells fibrous connective tissue stroma [H&E x40]

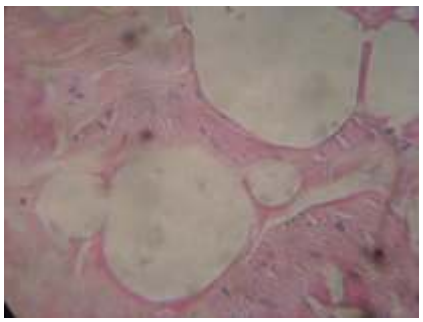

Figure 5: Intramuscular lipoma consisting of striated muscle infiltrated by fat cells [H&E x40]

Discussion

The tumours of adipose tissue often present with a less aggressive clinical behaviour, which usually cause patients to delay seeking for treatment, until the tumour grows large enough to cause significant discomfort, disfigurement or disruption of the normal functions of the affected site of body[10]. This may explain why a low prevalence of orofacial lipoma was observed in this study similar to previous reports.[3,4,11] Also, there was predilection of the orofacial lipoma for adults in the 4th decade of life and the lesion predominates in females and in the buccal mucosa in this study, which agrees with previous reports. [2,7,10,12-14] In contrast to these findings, Ndukwe et al [9] reported a higher prevalence of head and neck lipoma, with predilection for older adults, males, and in the neck region. Furthermore, Furlong et al[4] in a larger study series reported that the oral and maxillofacial lipomas reviewed were mostly found in the parotid region, followed by buccal mucosa, with predilection for males and older adults.Although, lipoma is said to be rare in the orofacial region, clinicians ought to be informed of the current diagnostic tools and treatment considerations for lipomas and its variants, to avoid misdiagnosis of a liposarcoma for lipoma.

A review of the histopathological variants of orofacial lipoma in this study showed that the conventional type was the commonest sub-type. Most of the conventional lipoma in this study occurred in females, in the 4th and 5th decades of life and in the buccal mucosa, which was consistent with previous reports. [7,9,15] Only the conventional types of lipoma and fibrolipoma were observed in a previous Nigerian study,[9] whereas, in this present study the histopathological subtypes of orofacial lipoma found were conventional lipoma, angiolipoma, fibrolipoma, spindle cell lipoma and intramuscular lipoma. The intramuscular type is a very rare variant of lipoma with a higher tendency to recur compared with the other subtypes. Intramuscular lipoma often presents clinically as a fluctuant lesion which may be confused with other fluctuant tumours. [12] In contrast to findings in this study, Furlong et al [4] reported that the spindle cell lipoma was the commonest subtype of orofacial lipoma, with predilection for the parotid and lip sites. This study emphasizes the importance of histopathological evaluation of clinically suspicious lipoma, to confirm the diagnosis and to distinguish lipoma and its variants from well differentiated liposarcoma.

Although radiological findings were not analyzed in this study, it is important to state that current imaging techniques may be useful to differentiate lipoma and its variants from well differentiated liposarcoma. MRI (magnetic resonance imaging) is the best diagnostic tool for this purpose. [15,16] However, it is imperfect in distinguishing lipomas, lipoma variants, and well-differentiated liposarcomas. A study on the use of MRI in the diagnosis of lesions clinically suspected to be well-differentiated liposarcoma showed that they were more likely to be benign type (64%), yet it recommended that these lesions should be preferably preoperatively diagnosed as well differentiated liposarcoma rather than simple lipoma, until a definitive post-surgical histopathological diagnosis is made. This is because of the differences in their prognosis, initial treatment, and long-term care. [16] Wide local excision and long-term clinical follow-up (> 5 years) are advocated for well-differentiated liposarcoma, because of the high rate of local recurrence and potential for delayed dedifferentiation (and subsequent risk for metastasis). [7,16] The benign diagnosis after surgical excision of the lesions in this present study was supported by absence of recurrence of the lesions.

In conclusion, this study showed the rarity of orofacial lipoma, consisting mostly of the conventional lipoma in the buccal site, in adult females among the Nigerian population studied. Early surgical biopsy and histological evaluation of clinically suspicious cases of orofacial lipoma is recommended, to avoid facial disfigurement, to improve 5 years survival rate, reduce risk of recurrence and to rule out malignant lesion mimicking the benign type.

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