Oral ulcerative lesions: a review of 55 cases in Benin-City, Nigeria

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Abstract

Objective: This study aims to determine the incidence, age, gender, site and treatment outcome of oral ulcerative lesions in Benin City, Nigeria.
Method: This is a 3-year retrospective review of all ulcerative oral lesions seen at the Dental Centre, University of Benin Teaching Hospital, Benin City, Nigeria. The medical records, laboratory and histopathology reports of the patients seen between April 2008 and March 2011 the study period were reviewed. All cases of oral ulcerations were selected and patients with erosive mucosa lesions were excluded from this study.
Result: A total of 55 (1.3%) cases of oral ulcers were diagnosed amongst the 4092 oral lesions seen within the study period. There were 33(60.0%) males and 22 (40.0%) females, giving a ratio of 1.5:1. Most of the patients were in the 3rd decade (n=18, 32.7%). Recurrent aphthous ulcer (n=26, 47.3%) was the most frequent lesion, followed by infective ulcers (n=9, 16.4%), traumatic ulcers (n=8, 14.5%), immune mediated ulcers (n=7, 12.7%) and neoplastic (malignant) ulcers (n=5, 9.1%). Majority of the ulcers occurred in multiple oral mucosal sites (n=21, 38.1%), while the gingiva (n=10, 18.2%) was the commonest solitary oral mucosal site for the ulcers. A good treatment outcome was observed for most of the oral ulcers except for the deep mycosis and malignant oral ulcers.
Conclusion: A lower incidence of oral ulcers was observed in this study compared to previous report in a black African population. The oral ulcers were commoner in adult males and the gingiva was the most frequent solitary site. The lesions were mostly those of local origin, with RAU accounting for majority of the cases studied. The treatment outcome was good for most of the oral ulcers except for the deep mycosis and malignant oral ulcers.

Key words: Oral ulcerative lesions in Nigeria

Introduction

Oral ulcers are sores or open lesions in the mouth[1, 2]. The term 'ulcer' is used usually where there is damage to both epithelium and lamina propria and a crater is formed, sometimes made more obvious by swelling caused by oedema or proliferation in the surrounding tissues[3].
Oral ulceration is a common complaint of patients attending out-patient clinics[4]. Scully et al[5], reported that most oral ulcers have a local cause notably trauma or are aphthae. Oral ulcers can arise as a result of a number of disorders which maybe of local origin such as trauma, recurrent aphthous ulcer (RAU), infections, neoplastic conditions and irradiation. The systemic causes are connective tissue disorders, autoimmune conditions, blood dyscrasias, drugs, gastrointestinal tract disease and other miscellaneous conditions [4, 5].

Although, oral cancer presenting primarily as ulcerative lesion appears to be rare, it should be considered as a major health concern because of the associated significant morbidity and mortality worldwide. Frustration abounds because the cure rate is dismally low for such an accessible tumour[6]. Conventional oral squamous cell carcinoma which accounts for about 90% of malignant orofacial lesions present as oral ulcer at the late stage of lesion, while sarcomas and lymphomas grows rapidly and present as oral ulcer at a relatively early stage of these lesions [7]. However, spindle cell carcinoma frequently presents as ulcerated lesion in 92.2% of cases [8]. The need to differentiate innocent solitary oral ulceration as a result of trauma and infection from oral squamous cell carcinoma cannot be over-emphasized[9]. Unfortunately, in Nigeria, elaborate study on oral ulcers has not been carried out. This study aims to determine the incidence, age, gender, site and treatment outcome of oral ulcerative lesions in Benin City, Nigeria.

Materials and method

Ethical approval was obtained from the Hospital Ethical Committee to carry out a retrospective study of all the patients who presented at the Dental Centre, University of Benin Teaching Hospital, Benin City, Nigeria, over a period of 3 years (April 2008 to March 2011). The medical records, laboratory and histopathology reports of the patients seen within the study period were reviewed. All cases of oral

ulcerations were selected and patients with erosive mucosa lesions were excluded from this study.
Data on the age, gender, site, clinical and laboratory diagnosis, and treatment outcome of the oral ulcerative lesions were collected. Classification of the various types of oral ulcerations was made based on the aetiology of the lesions.

Results

A total of 4092 patients were seen during the study period, among which were 55(1.3%) cases of oral ulcers. Of the 55 patients with oral ulcers, 33(60.0%) were males and 22(40.0%) females, giving a male to female ratio of 1.5:1. Most of the patients were in the 3rd decade of life (n=18, 32.7%) **(Table 1).** Majority of the ulcers occurred in multiple oral mucosal sites (n=21, 38.1%), while the gingiva (n=10, 18.2%) was the commonest solitary oral mucosal site for the ulcers **(Table 2).**
Recurrent aphthous ulcers (RAU) (n=26, 47.3%) was the most frequent of all the ulcers. The RAU were herpetiform type (n=2, 3.6%) that healed within 1 to 2 weeks; minor RAU (n=18, 32.7%) with resolution of ulcers within 10 to 14 days and the major RAU (n=6, 10.9%) with resolution within 3 to 4 weeks, except for a case that took 6 weeks to heal following refreshing and suturing the wound edges **(Table 3).**
The infective ulcers (n=9, 16.4 %) were next in frequency to RAU. They consist of 2 (3.6%) cases of acute necrotizing ulcerative gingivitis (ANUG) with healing achieved within 2 to 3 weeks. Others were herpes simplex stomatitis (n=4, 7.3%) with healing achieved within 1 to 2 weeks; herpes zoster (n=2, 3.6%) with healing achieved within 2 weeks; and deep mycoses (n=1, 1.8%) with healing achieved within 4 weeks and recurrence occurred 5 weeks later **(Table 3).**
The traumatic ulcers accounted for 14.5% (n=8) of the oral ulcers. After removal of the causative factor including ill fitting denture (n=1, 1.8%), lip biting (n=2, 3.6%), topical aspirin (n=4, 7.3%) and supra-erupted upper right 3rd molar tooth (n=1, 1.8%); and treatment with analgesic and antibiotics, complete resolution was achieved within 1 to 2 weeks **(Table 3).**
Seven (12.7%) cases of immune mediated ulcers were found in this study. They include erythema multiforme (n=5, 9.1%) with healing achieved within 1 to 2 weeks, but recurrence within 8 weeks was observed in 3 (5.5%) cases. There were 2 (3.6%) cases of epidermolysis bullosa with healing achieved within 2 weeks and a case was complicated by microstomia, ankyloglossia and speech difficulty **(Table 3).**
The neoplastic (malignant) ulcers were 5 cases (9.1%), consisting of adenocarcinoma (n=2, 3.6%), antral carcinoma involving the palate (n=1, 1.8%) and Squamous cell Carcinoma (n=2, 3.6%). Most of the malignant ulcers were seen in patients in the 6th and 7th decades (n=4, 7.27%). All the malignant ulcers were referred for further management in Oral/Maxillofacial Surgery Unit of the Hospital
(Table 3).

Table 1: Gender and age distribution of the oral ulcerative lesions

Age group (Years)	Types of oral ulcer												
	RAU		Infective		Traumatic		Immune		Neoplastic		Total		%
	M	F	M	F	M	F	M	F	M	F	M	F	
0 - 10	-	-	1	1	-	-	-	-	-	-	1	1	3.6
11 - 20	-	1	1	-	-	-	-	1	-	-	1	2	5.5
21 - 30	8	5	2	1	2	-	-	-	-	-	12	6	32.7
31 - 40	2	-	-	-	-	-	-	2	1	-	3	2	9.1
41 - 50	3	3	1	-	1	1	1	-	-	-	6	4	18.2
51 - 60	-	2	1	-	-	1	1	-	2	-	4	3	12.7
61 - 70	1	-	-	-	-	2	2	-	-	1	3	3	10.9
>71	-	1	1	-	1	-	-	-	1	-	3	1	7.3
Total	**14**	**12**	**7**	**2**	**4**	**4**	**4**	**3**	**4**	**1**	**33**	**22**	**100**
	(26)		(9)		(8)		(7)		(5)		(55)		
%	**47.3**		**16.4**		**14.5**		**12.7**		**9.1**		**100**		

Key: RAU= Recurrent aphthous ulcer

Table 2. Oral mucosa site distribution of the oral ulcerative lesions

Type of Ulcer	Gingival	Buccal Mucosa	Labial Mucosa	Tongue	Palate	Multiple Site	Total	%
RAU	5	4	2	3	-	12	26	47.3
Infective	2	2	2	1	1	1	9	16.4
Traumatic	2	1	2	1	1	1	8	14.5
Immune	-	-	1	-	-	6	7	12.7
Neoplastic	1	1	-	2	-	1	5	9.1
Total	10	8	7	7	2	21	55	100
%	18.2	14.5	12.7	12.7	3.6	38.1	100	

Table 3: Treatment outcome of the oral ulcers

Type of ulcer	Treatment outcome
RAU (26)	
• Herpetiform	healing of oral ulcers achieved within 1-2 weeks
• Minor	resolution of ulcers within 10 -14 days
• Major	resolution within 3- 4 weeks. The edges of one major RAU that refused to heal after 6 weeks were refreshed and sutured to achieve healing.
Infective (9)	
• ANUG	healing achieved within 2 -3 weeks on commencement of treatment. One progressed to cancrum oris and was managed surgically.
• Herpes simplex	resolution within 2 weeks.
• Herpes zoster	resolution within 2 weeks.
• Deep mycoses	resolution within 4 weeks of treatment, with recurrence 5 weeks later.
Traumatic (8)	
• Ill- fitting dentures	Complete resolution achieved within 1 - 2 weeks after removal of the causative factor for all traumatic ulcers.
• Lip biting	
• Topical aspirin application	
• Supra-eruption	
Immune (7)	
• Erythema multiforme	healing of ulcers within 2 weeks of initiation of treatment.
• Epidermolysis bullosa	resolution within 2 weeks.
Neoplastic (5)	
• Squamous cell carcinoma	all referred to Oral/Maxillofacial Surgery unit for further management.
• Oro-antral carcinoma	
• Adenocarcinoma	

Discussion

Previous report among black Africans suggests a low prevalence of oral ulcers[10]. However, a high prevalence of orofacial herpetic ulcer was reported among HIV/AIDS patients seen at Ibadan, Nigeria[11]. Shulman et al,[12] reported in a study on oral mucosal lesions in the U.S. that the lesions differ significantly by age, sex, race/ethnicity, use of dentures and tobacco. The denture related lesions (stomatitis, hyperplasia, ulcer and angular cheilitis) were among the common lesions (8.4%). Similarly, this study analyzed the incidence, aetiology, gender, age, site and treatment outcome of the oral ulcers seen in Benin City. The findings were compared with reports from both black African and Caucasian populations.

The incidence of oral ulcers (1.3%) found in this study was relatively lower than what was previously reported in a black African population [10]. In addition, the oral ulcers studied were commoner in adult males and the gingiva was the most frequent solitary site for the lesions. The site distribution of the ulcers in favour of the gingiva for RAU and infective ulcers is also supported by previous report from a study at Ile-Ife, Nigeria[13]. However, Amoateng et al[10] reported female predilection for oral ulcers and a wide age range of occurrence of the lesions in a study conducted among Ghanaians.

The oral ulcers observed in this study were mostly those of local origin. The recurrent apthhous ulcer (RAU) was the most frequent of the oral ulcers (47.3%). Similarly, RAU is known to affect a range of 5% to 66% of population depending on the group studied [14]. The lesion starts in childhood or adolescence as recurrent small, round or ovoid ulcers with circumscribed margins, erythematous haloes and yellow or grey floor [3, 5]. They are quite painful and the natural course is one of eventual remission [5, 15]. Several studies have reported RAU as a common oral mucosal disorder that has an unknown cause and poor effective management because of the frequent recurrence of the lesion [6, 14-17]. Although the clinical characteristics are well-defined, the precise aetiology and pathogenesis remains unclear. Some cases have a familial and genetic basis. Other aetiological factors that have been identified in a minority of cases include stress, trauma, non-smokers, menstruation and food allergy. Also, aphthae are seen in haematinic deficiency (iron, folate, or vitamin B-12), coeliac disease, Crohn's disease, HIV infection, neutropenia, and other immunodeficiencies[5, 14].

Minor RAU is the commonest type affecting about 80% of RAU patients. We also observed a predominance of minor RAU in this study, which was healed without scarring within 10 to 14 days of treatment. Whereas, the major RAU was less frequent and healing was slightly prolonged (3 to 4 weeks), with a case extending to 6 weeks before healing. Similarly, major RAU (also known as periadenitis mucosa necrotica recurrens) is reported as a rare,

severe form of RAU[14, 17]. While, herpetiform RAU was the least common type of RAU, with short healing period similar to the minor RAU studied[14]. Objective evidence shows that corticosteroid and antimicrobial used topically are most effective for treatment of RAU[14]. This may provide relief and reduce ulcer duration. Chlorhexidine gluconate mouth rinse reduces the severity and pain of ulceration but not the frequency. If RAU fails to respond to local measures, systemic immune-modulators may be required such as 50 to 100mg thalidomide daily [14, 18, 19]. Overall, a good treatment outcome was observed for the RAU in this study.

The second most common type of oral ulceration observed were infective conditions consisting mainly of acute necrotizing ulcerative gingivitis or ANUG (42.9%), Herpes zoster stomatitis (28.6%), Herpes simpex stomatitis and deep mycoses both accounting for 14.3% of the oral ulcers. ANUG in western countries tends to affect patients in the second and third decades of life [20]. However in the third world, the disease is much more common in childhood[11]. Some studies have reported systemic diseases such as measles, malaria and secondary anaemia as important predisposing factors to ANUG in Nigerian children[13,21]. Inadequate oral hygiene, smoking, mental or physical stress, impaired host immune mechanism as in diabetes mellitus, leukaemia and AIDS are also implicated as aetiological factors for ANUG [15,22,23]. Most of the ANUG studied achieved healing within 2 to 3 weeks of treatment, but one case progressed to form cancrum oris, a known sequel of ANUG, with necrosis of alveolar bone[24]. Whereas, the herpes simplex and herpes zoster stomatitis studied achieved healing within 2 weeks of treatment, while the case of deep mycosis healed within 4 weeks of treatment and recurrence was observed 5 weeks later. The treatment outcome for the infective ulcers was good and comparable with those of RAU, except for the deep mycosis that appeared to be refractory to treatment.

There were 8 (14.5%) cases of traumatic ulcers, with chemical irritation from topical application of aspirin (n=4, 7.3%) for treatment of toothache accounting for majority of the traumatic ulcer. Therefore, more dental health education is needed to stop this practice. Physical trauma due to ill-fitting dentures, lip biting and supra-erupted upper right 3rd molar tooth were the other causes of traumatic ulcer observed. As expected the ulcers regressed within 1 to 2 weeks once the cause of trauma was removed [5]. The treatment outcome for traumatic ulcers was good and the healing period was predictable.

The immune mediated ulcers (12.7%) studied were predominantly cases of erythema multiforme (n=5, 9.1%) with healing achieved within 1 to 2 weeks of treatment, but recurrence within 8 weeks was observed in 3 (5.5%) cases. However, no complication such as generalized spread of the lesion involving the skin was observed in these patients. The 2 (3.6%) cases of epidermolysis bullosa found in this study also achieved healing within 2 weeks of treatment. However, the difficulty with swallowing and speech persisted in one complicated case that had microstomia and ankyloglossia. Therefore, early treatment and prophylaxis for recurrent immune ulcers is recommended to achieve good treatment outcome and avert the development of complicated lesions with associated functional disabilities.

Neoplastic/malignant ulcers (n=5, 9.1%) were the least in frequency among the oral ulcers studied. The lesions were all carcinomas with the tongue as the commonest solitary site and there was predilection of the lesions for males above 50 years (n=3, 5.5%). This is in keeping with previous report that ulcerated oral cancer occurs mostly in middle-aged adults and elderly males [19]. Although, this study supports the rarity of early oral cancer presenting primarily as ulcerative lesion among Nigerians, there is need to emphasize that clinicians should have a high index of suspicion and sometimes request for cytological screening of oral ulcers persisting after 2 weeks without healing. This may help to reduce the morbidity and mortality associated with the surgical treatment, radiotherapy and chemotherapy for malignant oral ulcers presenting at late stage of the disease[6].

In conclusion, a lower incidence of oral ulcers was observed in this study compared to previous report in a black African population. The oral ulcers were commoner in adult males and the gingiva was the most frequent solitary site. The lesions were mostly those of local origin, with RAU accounting for majority of the cases studied. The infective ulcers were mainly ANUG and chemical irritation from topical application of aspirin to treat toothache was the commonest cause of the traumatic ulcers. The immune mediated ulcers were predominantly localised erythema multiforme, while the malignant ulcers were rare, consisting of carcinomas occurring mostly in the tongue and in middle aged and elderly males. Overall, the treatment outcome was good for most of the oral ulcers, except for the deep mycosis that appears refractory to treatment and malignant oral ulcers without recorded follow up after referral to the Surgical Unit.

References

1 Gonsalves WC, Chi AC, Neville BW. Common oral lesions: Part I. Superficial mucosal lesions. Am Fam Phys 2007; 7:501-507.

2 Quail GG. Oral ulceration. Aust Fam Phys 1991; 12: 273-281.

3 Eversole LR. Immunopathology of oral mucosal ulcerative, desquamative and bullous diseases. Selective review of the literature. Oral Surg, Oral Med Oral Pathol 1994; 66:555 - 571

4 Leao JC, Gomes VB, Porter S. Ulcerative lesions of the mouth: an update for the general medical practitioner. Clinics. 2007; 62:769-780.

5 Scully C, Shotts R; ABC of oral health. Mouth ulcers and other causes of orofacial soreness and pain. Br Med J. 2000; 321:162-165.

6 Alfano MC, Horowitz AM. Professional and community efforts to prevent morbidity and mortality from oral cancer. J Am Dent Assoc 2001; 132:24S-29S

7 Bagan J, Sarrion G, Jimenez Y. Oral cancer: clinical features. Oral Oncol 2010; 46:414-417.

8 Viswanathan S, Rahman K, Pallavi S, Sachin J, Patil A,Chaturvedi P, D'Cruz A, Agarwal J, Kane SV. Sarcomatoid (spindle cell) carcinoma of the head and neck mucosal region: a clinicopathologic review of 103 cases from a tertiary referral cancer centre. Head Neck Pathol 2010; 4:265-275.

9 Schneider LC, Schneider AE. Diagnosis of oral ulcers. Mt Sinai J Med 1998; 65:383-387.

10 Amoateng JA, Donkor p. The prevalence of benign oral ulceration among patients attending a dental clinic in Komfo Anokye Teaching Hospital. Gh Med J 2004; 38:101-103.

11 Okoje VN, Obiechina AE, Aken'ova YA. Orofacial lesions in 126 newly diagnosed HIV/AIDS patients seen at University College Hospital, Ibadan. Afri J Med Med Sci 2006; 35:97-101.

12 Shulman JD, Beach MM, Rivera-Hidalgo R. The prevalence of oral mucosal lesions in U.S. adults. J Am Dent Assoc 2004;135:1279-1286.

13 Ojo MA, Adegboye AA, Ogunbodede EO, Olusile AO. Occurrence and distribution of oral ulcerative lesions in children at Ile-Ife, Nigeria. Nig Dent J 1994; 11: 27-29.

14 Porter SR, Scully C, Pedersen A. Recurrent apthous stomatitis. Crit Rev oral Biol Med 1998;9 306-321.

15 Lehner T. Progress report: Oral ulceration and Behcets syndrome. Gut. 1977; 18:491-511.

16 Rogers RS. Recurrent oral stomatitis: clinical characteristics and evidence of an immunopathogenesis. J Invest Dermatol 1977; 69:499-501.

17 Rennie JR, Reade PC, Hay D, Scully C. Recurrent apthous stomatitis. Br Dent J 1985;159:361-367.

18 McBride D. Management of Apthous ulcers. Am Fam Phys 2000; 62: 149-154.

19 Eversole LR. Clinical outcome of oral pathology, diagnosis and treatment. 3rd ed, published by Lea and Febiger, pp 64-79.

20 Jenkins, Allan, Collins. Guide to periodontics. Heinnemann Medical Books Ltd. 1984; 162-166.

21 Enwonwu CO. Epidemiological and biochemical studies of necrotizing ulcerative gingivitis and Noma (cancrum oris) in Nigeria children. Arch Oral Biol 1972; 17: 1357-1371.

22 Oyedeji OA, Esan TA, Elemile PO, Oyedeji GA. An unusual complication of malnutrition in an African child; Acute Necrotizing Ulcerative Gingivitis: Case Report . The Internet Wellness 2007 Vol. 3 No. 1

23 Yeung SC. HIV infection and periodontal disease. Ann R Australas Coll Dent Surg 2000; 15: 331-334.

24 Enwonwu CO, Falkler WA, Idigbe EO. Oro-facial gangrene (noma/cancrum oris): pathogenetic mechanisms. Crit Rev Oral Biol Med 2000; 11:159-163.