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Oral Ulceration

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Medical Aspects

Oral ulceration sounds a simple enough topic. However, when I started to reflect upon what I should say I found it was far less simple than it sounded and that my knowledge of it was a great deal more meagre than I had suspected.

My brief is to discuss the general medical aspects of oral ulceration and I propose to limit the field by defining the oral cavity as extending from the inner margins of the lips to the anterior pillars of the fauces and by excluding ulcerative processes confined to the tongue as well as those that are frankly neoplastic.

The first general question raised by this problem is whether the tract of mucosa to be considered behaves differently from other mucous membranes. From a functional standpoint the mouth has a dual role. It is, first, the pathway which connects the alimentary tract with the outside world and, secondly, the chamber in which mastication takes place. The oral mucosa is consequently exposed to the recurrent trauma of chewing and to damage from the substances chewed; it is alternately scorched and frozen by the wide-ranging temperatures of the foods and drinks of which it is the receptacle; it is harassed by such powerful irritants as curry, chile con carne, Worcester sauce and tobacco smoke; and it is insulted by the constant presence of such foreign bodies as dentures. It has a considerable, although normally innocuous, bacterial population. This catalogue of homely facts makes it clear that its functions separate it from other mucosal surfaces and, on reflection, it is perhaps surprising that it maintains its integrity so successfully. These repeated minor traumata explain, too, why lesions which on other surfaces might retain their initial individuality as vesicles or bullæ are rapidly converted in the mouth to ulcers often without characteristic features.

The primary division of ulcerative processes affecting the oral mucosa must be into those which affect the mouth alone and those in which similar lesions are found on the skin or other mucous surfaces. This distinction is not absolute but it is of clinical utility. There are, for instance, systemic diseases in which oral ulceration is common but in which other mucocutaneous lesions seldom occur.

Those disorders in which the oral ulcers are but part of a general mucocutaneous affection are usually held to fall into the province of the dermatologist. I must do my best not to transgress its boundary although patients and pathological processes are no respecters of specialists and general physicians are often confronted by problems which dermatologists believe themselves better equipped to solve. Indeed, many of these disorders fall into an ill-defined no-man's-land between general medicine and dermatology. An example is Behçet's syndrome in which the opening event is usually ulceration of the oral mucosa, frequently associated with genital ulcers and ocular lesions such as iridocyclitis, keratitis or uveitis with hypopyon. Any one of these three components may be the first and antedate the others by months or even years. Later, pyoderma, cutaneous nodules, and acuminate papules appear sometimes with arthritis, thrombophlebitis, and signs of disease of the nervous system. Pemphigus often begins with oral bullæ which rupture early to leave superficial erosive ulcers. That variant of erythema multiforme sometimes called the Stevens-Johnson syndrome combines the typical polymorphic skin lesions with affection of the mucosæ where vesicle and bulla formation is early followed by ulceration. The mouth more often suffers than other mucous membranes, such as those of the genital tract and the eye, and occasionally lesions may be confined to the oral mucosa. In Reiter's syndrome, too, small vesicles rapidly progressing to ulceration are common in the mouth. They are usually preceded by conjunctivitis or iridocyclitis and by

urethritis but they often antedate the arthritis. Oral ulceration is not uncommon in systemic lupus erythematosus but is always accompanied by other signs. I have selected these diseases because the frequency with which ulceration of the mouth is their presenting symptom gives them a particular importance for the general physician.

Oral ulcers occur, too, in varicella and variola but although they are an additional source of discomfort to the patient they do not offer a diagnostic problem. Zoster deserves mention, for the congeries of small ulcers on the soft palate or the anterior faucial pillar will sometimes establish a facial palsy as being part of the Ramsay Hunt syndrome.

The remaining diseases in this category are indisputably within the province of the dermatologist.

In the second group, oral ulceration is either the essence of the affection or it is the expression of some systemic disease. The last subgroup includes syphilis – where the primary lesion may occasionally be found within the mouth and where serpiginous oral ulcers are a classical feature of the secondary and gummatous ulceration of the palate of the tertiary stage. Tuberculous ulcers are usually lingual but I can recall one involving the anterior faucial pillar. Heavy metal poisoning, particularly gold, can lead to ulcerative stomatitis; bullæ with subsequent ulceration may be due to iodism and sensitivity to a large number of drugs may be shown by a syndrome resembling erythema multiforme. Ulcerative stomatitis sometimes occurs in uræmia and I can recall one instance in which the appearances led to a suspicion of corrosive poisoning.

Diseases of the blood provide a number of examples of oral ulceration. It is perhaps most often seen in acute leukæmia: the ulcers, which are extremely painful, may be single or multiple and vary in size from a few millimetres to a centimetre or more in diameter. They often occur on the gums in relation to infection around a tooth, in outline they may be regular or irregular, they are covered by a grey slough and swabs from them inevitably show Vincent's organisms and often monilia. They result from a mixture of leukæmic infiltration and submucosal hæmorrhage followed by secondary bacterial invasion. The reduced resistance to infection characteristic of acute leukæmia allows organisms which are normally harmless residents of the oral cavity to assume aggressive pathogenic qualities. The ulcers heal rapidly when the disease undergoes remission.

Some of the chemotherapeutic agents used in the treatment of acute leukæmia are themselves capable of causing oral ulceration. This is particularly true of the folic acid antagonists such as aminopterin and methotrexate. It may occur too in patients receiving 6-mercaptopurine but is then probably more often the result of cytopenia than of idiosyncrasy to the drug.

In aplastic anæmia oral ulceration similar to that of acute leukæmia is frequently seen. Its occurrence suggests that the important causes are the hæmorrhagic state and the neutropenia common to both diseases, and that leukæmic infiltration is of less consequence.

A third association is that of recurrent aphthous stomatitis with neutropenia. This type of oral ulceration will be discussed later: only a minute proportion of patients who present with aphthous stomatitis will be found to have neutropenia but in the two rare disorders cyclical and chronic hypoplastic neutropenia recurrent aphthous ulceration is common. Several instances have been recorded of profound recurrent neutropenia with a regular twenty-eight-day cycle in which an outbreak of aphthous ulceration always coincided with the virtually complete disappearance of neutrophils from the peripheral blood. In the more common chronic hypoplastic variety the peripheral neutrophil count, although always below normal, shows irregular variations; aphthous ulcers often appear when the count is at its lowest.

Cancrum oris is now a condition of great rarity but when it does occur it is usually in association with acute leukæmia or profound neutropenia.

There are left for discussion those forms of oral ulceration due to local causes or unassociated with systemic disease. Some of these are traumatic and may be due to irritation from broken teeth or ill-fitting dentures. The sublingual ulcer of whooping-cough and the ulceration caused by drinking corrosive liquids are further familiar examples.

Two viral infections fall into this group. The first is herpangina, an acute febrile illness due to one of six or seven viruses of the Coxsackie A group. It is most commonly seen in summer and children are the usual victims. There is an abrupt onset with the temperature rising to 102–105° F; within a few hours papules or petechiæ have appeared on the soft palate or anterior faucial pillars and after twenty-four hours they will have left two to six painful ulcers perhaps 5 mm in diameter and each surrounded by a halo of erythema. The fever lasts two to three days and the ulcers heal within five days. It is a disease which can usually be recognized clinically without difficulty and which carries a uniformly good prognosis.

The second is herpetic stomatitis due to primary infection of the oral mucosa by the virus of herpes simplex. It occurs commonly in children between the ages of 2 and 3. The anterior part of

the oral mucosa is studded with vesicles which rapidly ulcerate and become secondarily infected. Healing takes place in seven to ten days.

The last form of oral ulceration is that which is most often known as 'recurrent aphthous ulcers of the mouth' although a formidable number of synonyms exist. It is a common complaint, indeed a survey a few years ago showed that about 1 in 5 of the population suffered from it in some degree and at some time. It is rather more common in women than in men and usually makes its appearance between the ages of 10 and 30 years although in about 10% of women the onset is delayed until after the age of 50 years. A family history is common.

The ulcers are usually multiple, the oral mucosa lining the cheek opposite the upper molars and within the upper and lower lips being the sites of election. The tongue, fauces and pharynx are often affected as well but only rarely the ocular and genital mucosæ. Individual lesions are circular, oval or irregular with a grey or yellow base, a diameter usually between 2 and 5 mm and a surrounding zone of hyperæmia. They are extremely painful but unassociated with any general disturbance. They usually heal in ten days. In many patients, a regular periodic tendency is evident; in women the cycle is usually less than four weeks; in men periodicity is less marked but when present the cycle is usually three to four months.

The cause of this curious malady is quite unknown. All efforts to incriminate a virus have failed and, in particular, herpes virus is certainly not responsible. There is little evidence that in these patients other mucous membranes share the vulnerability of that lining the mouth, although aphthous ulcers are common in those with malabsorption states and with ulcerative colitis. Environmental or emotional stress often appears to precipitate attacks. In one large series 40% of patients claimed to attend church regularly which may indicate that this is in the main an affliction of those who are conformist and members of the Establishment. In short our ignorance of the cause of this common disease is profound and is rivalled only by our therapeutic impotence.

It is probably true to say that no other tract of mucous membrane is more prone to ulceration than that which lines the mouth. This frequency is only partly explained by the wear and tear to which the buccal mucosa is exposed. For this epithelium reacts not only like other mucous membranes but also on occasion in concert with the skin. Together with its autonomous disorders these facts account for the complex and variegated clinical patterns which are embraced by the modest title of oral ulceration.

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Oral Ulceration as a Manifestation of Some Dermatoses

I propose to discuss only four conditions under my brief of oral ulceration in some dermatoses: erosive lichen planus, erythema multiforme, benign mucous membrane pemphigoid and pemphigus. The diagnosis of these diseases is made in many patients by the associated findings when there is concomitant involvement of the skin and other mucous membranes. But there are still a number of patients who present with only the oral manifestations and who, even after a complete examination, fail to show any other involvement. They all present with a history of chronic recurrent oral ulceration and, apart from pemphigus, the clinical features are more diagnostic than their histopathology. The basic lesion in pemphigus is an intra-epithelial bulla resulting from acantholysis of supra-basal prickle cells while sub-epithelial bullæ form in the other three conditions with equivocal histological findings.

In the mouth, bullous lesions commonly present as erosions or ulcers through the result of trauma and secondary infection. These ulcers are of the smooth type, unlike the crater-form type described by Professor Kramer (p 458).

Atrophic Lichen Planus

Of the four conditions I am considering this is the most common and a cause of considerable discomfort in the older age groups. Patients may present with a history of oral ulceration over a number of years, with the same ulcer often persisting for months. This type of lichen planus does not necessarily follow the more commonplace and symptomless form, nor in fact is it necessarily associated with skin lesions. The association with emotional trauma is not always so marked in these patients as in the younger patients with their more acute eruptions. The tongue and cheeks are most commonly affected by the ulceration and the gums and lips less so. The ulcer is smooth and rarely preceded by an initial vesiculation. There is little tendency to bleed and the ulcer is not as painful as it would first appear, except when the lips are affected. The adjacent mucosa is atrophic and erythematous, with a linear pattern of white papules radiating in different directions. These marginal striæ are very characteristic of this type of ulceration and are most marked around the ulcers of the cheeks and lips. The ulcers may be up to an inch in diameter and generally affect the mouth symmetrically. On