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Management of diseases of oral soft tissues in children

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Abstract

The clinical features, diagnostic considerations and recommended management for selected viral diseases, aphthae and decreased host resistance diseases affecting the oral cavities of young persons are presented. Viral diseases frequently present as subclass disease manifested as transient gingivitis with little or no evidence of infection. Such viral diseases should be treated with general supportive care. Antibiotics and surgical procedures are contraindicated. Recommended treatment for aphthae includes topical and systemic steroids and, in patients with delayed healing and scarring, topical tetracycline hydrochloride. Patients with decreased host resistance, regardless of cause, have similar oral disease manifestations which are characterized by gingivitis, mucosal ulcers and, in chronic cases, periodontitis. Oral therapeutic management must be directed toward controlling and reducing the microbial flora. Oral hygiene, topical tetracycline hydrochloride and topical nystatin are recommended for treatment.

Introduction

This paper will not attempt to comprehensively address the wide variety of soft tissue lesions that can and do occur in young persons. It will be confined to a discussion of selected diseases, some of which occur with considerably frequency and others which, although relatively rare, present unique therapeutic problems.

Viral Diseases

Oral lesions have been described in a number of viral diseases, for example, primary herpes, secondary herpes, herpangina, hand, foot and mouth disease, and rubella. The classic clinical features of these viral diseases are described in a wide variety of dental and medical texts and are generally well recognized by most practicing health care professionals. Less well recognized are subclinical or subclass manifestations of viral diseases. Based on antibody studies, it is apparent that between 50 and 90% of patients infected by viral disease have subclass or subclinical manifestations of their infection.^{1,2,3} Such patients

with antibody positive sera for a specific virus cannot recall ever having had the characteristic symptoms of the disease. Studies of patients with viral infections during epidemics have further demonstrated that only a portion of the individuals infected with a specific virus manifest clinically recognizable disease.⁴

Clinical Features: Over the past several years our studies have noted moderate transitory gingivitis in a number of patients which, based on antibody titers and, in selected cases, viral isolation, were subclass disease. In most instances, the only manifestations of these viral diseases were gingivitis. These gingivitis were of relatively brief duration lasting for 5 to 15 days. They were, in some cases, associated with regional and occasionally generalized lymphadenopathy. Mild pharyngitis, malaise, diarrhea and low grade temperature were evident in some cases. These non-specific viral gingivitis were associated with herpes simplex type I, Coxsackie A-1, 7, 10 and 16, rubella, influenza A and hepatitis B viruses.

Diagnosis: Viral isolation and retrospective serum antibody titers are available for the diagnosis of these virus infections. Such studies are of limited value in managing the acute symptoms and are not conveniently available in most dental offices. The practicing dentist should be aware that sudden onset gingivitis can be a subclass manifestation of a wide variety of viral diseases. Because of the few cases studied, the viruses identified are limited primarily by the extent of the sample: probably a number of other viruses can manifest as a nonspecific transitory gingivitis.

Treatment: No specific antiviral therapy is currently available for these viral infections. Recognition of a probable viral disease is, however, important in order to avoid inappropriate therapy. Steroids, both topical and systemic, are contraindicated since they can promote exacerbation of the disease.⁵ Antibodies are contraindicated because they are ineffective, may sensitize the recipient, and may promote fungus

overgrowth. Surgical manipulative procedures are contraindicated since they may promote viral dissemination.

Generalized supportive measures are indicated. These include; forcing oral fluids, analgesic as required, topical obtundants and saline mouth rinses. In children under 12 years of age, prescribing topical anesthetics may promote automaceration. Bland obtundants such as corn syrups or milk of magnesia can provide transitory symptomatic relief. The majority of cases observed have very limited symptomatology and require no specific therapy other than general supportive care in the form of oral fluids.

Aphthous Stomatitis

Recurrent aphthous lesions most frequently manifest initially in the pedodontic-age patient. Despite extensive research, the precise etiology of aphthae and the more severe related forms of the disease peria-denitis mucosa necrotica recurrens (Mikulicz's ulcers, Sutton's disease, major aphthae) and Behcet's syndrome remain obscure. Based on current information, however, there is little data available to support a microbial etiology for these conditions.⁶

Clinical Features: Aphthae present as ulcers not preceded by a vesicle. Lesions occur in a random pattern on nonkeratinized mucosal surfaces. Minor trauma, stress, and in females, hormonal levels, all are recognized as precipitating factors in the development of lesions. Severity of the disease may vary from an occasional solitary ulcer to constant multiple ulcers with scarring and, in some cases, involvement of extraoral sites.

Diagnosis: No specific diagnostic tests are currently available. Diagnosis is based on the history, pattern of occurrence and the anatomic location of lesions on nonkeratinized mucosal surfaces.

Treatment: The majority of patients seen with recurrent aphthae have only an occasional ulcer and usually do not seek professional care. For such patients who seek professional care, the approach is to provide symptomatic treatment in the form of topical triamcinolone acetonide 0.1% in methyl cellulose and/or benzocaine in methyl cellulose. Patients are instructed to gently debride the ulcer, dry it and apply a thin film of the medicament. Topical steroids are prescribed after meals and before retiring and the patient is directed to avoid anything by mouth for one hour. Topical anesthetics are prescribed before meals.

Patients with multiple ulcers having almost constant active symptoms are less common. However, these individuals invariably seek and require care. Such cases are most effectively managed by therapy directed toward preventing development of ulcers.

Since the majority of these lesions do not appear to be microbial in nature, do not hesitate to prescribe steroids. Initially the approach is to prescribe a mouthrinse — 5 milliliters triamcinolone acetonide 0.1% aqueous suspension. This is taken four times a day, after meals and before retiring, followed by nothing by mouth for one hour. In most cases, this therapeutic regimen has effectively prevented lesions. Once control has been effected, most patients have been able to decrease the frequency of medication to an as-required basis.

Patients with the more severe forms of aphthae almost invariably have prodromal symptoms that allow them to tailor medication to meet their therapeutic requirements and abort lesions. If topical steroid mouth rinses do not provide effective control, systemic prednisone is prescribed if there are no contraindications. Prednisone is normally prescribed, with an initial "burst" of 40 to 60 milligrams every morning, one hour after arising for five days. This is followed by alternate-day morning therapy of 5 to 20 milligrams of prednisone. This systemic medication is augmented with topical steroid mouth rinses as previously described. Systemic alternate-day prednisone is gradually reduced to the minimum level consistent with disease control. Patients can be maintained on levels of prednisone as high as 10 milligrams every other morning for prolonged periods.

In patients with major aphthae with significant mucosal scarring, individual ulcers normally require several weeks, and occasionally months, to heal. In such cases therapy begins with tetracycline hydrochloride mouth rinse, 250 milligrams (content of one capsule) dissolved in 5 milliliters of deionized water or diet soft drink. Dosage is four times a day, after meals and before retiring, followed by nothing by mouth for one hour. If patients are older than ten years, they are instructed to swallow the mouth rinse.

This therapy usually does not completely control the lesions, but does reduce the healing time and the amount of scarring. These findings suggest that in such major aphthae, a bacterial component is most probably present as a secondary invader. Subsequent to initial control, when the duration of the individual ulcers have been reduced and scarring controlled, tetracycline therapy is augmented with topical and systemic steroids as required.

With these combinations of modalities, most cases of aphthous stomatitis have been successfully controlled.

Decreased Host Resistance Diseases

A wide variety of conditions result in decreased host resistance. Although these conditions are diverse in their etiologies, their manifestations and oral therapeutic management are similar. These conditions in-

clude: agammaglobulinemia, acatalasemia, agranulocytosis, Chediak-Higashi syndrome, Job's syndrome, lazy leukocyte syndrome, chronic granulomatous disease, glucose-16-phosphate dehydrogenase deficiency, myeloperoxidase deficiency, tuftsin deficiency, Cushing's syndrome, leukemias, disseminated histiocytosis X, and erythropoietic protoporphyria. Fortunately these conditions are all relatively uncommon. Most frequently they are iatrogenic and secondary to cytotoxic and/or anti-inflammatory medications prescribed for life threatening malignant diseases or kidney transplants for renal failure.

Clinical Features: Because of the luxurious oral microbial flora and the thinness of the protective epithelial barrier, particularly in the gingival crevice, decreased host resistance frequently manifests in the oral cavity. Lesions most frequently encountered are generalized gingivitis, often with ulceration and nonspecific mucosal ulcers, usually resembling aphthae. In some cases, gangrenous lesions, such as nomas, may be observed. If the condition is chronic, periodontitis usually develops. In some cases, such as cyclic neutropenia or in cases with intermittent drug therapy, clinical lesions may be sporadic, corresponding to the periods of decreased host resistance. In general, oral lesions in the compromised host are not responsive to conventional therapy.

Diagnosis: Clinical laboratory, hematologic and immunologic studies may be required to establish the diagnosis of the underlying disease process. Clinically the practitioner must be alert to the clinical features of these conditions and when they present, seek appropriate medical consultation to exclude the possibility of a disease process which has decreased host resistance.

Treatment: Ideally, treatment should be directed toward correcting the disease process which has decreased the host's resistance. Unfortunately this is frequently not accomplished readily, either because of the life-threatening nature of the basic disease process, or the lack of current therapeutic modalities to correct the condition.

The dental practitioner's role is, in most cases, directed toward reducing the challenges to the compromised host. In the presence of decreased host resistance, measures should be directed toward reducing the challenging microbes. The most basic and important measure is establishing good oral hygiene which must include the dorsum of the tongue (the largest microbial reservoir in the oral cavity). This is

often very difficult, particularly in the patient with multiple oral ulcers and/or generalized cachexia.

Antimicrobial therapy is most often required in these patients. In the absence of evidence of systemic or deep-seated infection, the use of topical tetracycline is preferred: Tetracycline hydrochloride mouth rinse 250 milligrams (content of one capsule) dissolved in 5 milliliters of deionized water or diet soft drink four times a day, after meals and before retiring, followed by nothing by mouth for one hour. If there is evidence of spirochete infection, systemic metronidazole medication has been advocated, 200 milligrams, TID orally.^{7,8} (These experimentors have not personally had any experience with this drug.)

Candidosis is frequently a concomitant finding requiring treatment. Nystatin mouth rinse, 400,000 units four times a day, or in resistant cases, clotriamazole 100 milligrams vaginal tablets dissolved in the mouth four times a day have, in most cases, provided effective control.^{9,10}

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