INTRODUCTION:

The oral cavity consists of the lips, teeth, gums, oral mucous membranes, palate, tongue and oral lymphoid system. The oral cavity plays essential roles in many key bodily functions, including nutrition (mastication and swallowing), respiration and communication. Various specialists may be called upon to diagnose and treat diseases of the oral cavity, including general practitioners, nurse practitioners, dentists, oral surgeons, otolaryngologists, rheumatologists, dermatologist and others. The most important diagnostic tools for the examination of the mouth are the examiner's eyes, aided by a source of illumination, a tongue depressor, and the use of palpation by the examiner’s glove-covered fingers. Just as examining any area of the body, it is important to inspect directly and systematically all areas of the oral cavity. The patient's dentures must be removed not only so that the areas under the dentures can be inspected but also so that the dentures themselves can be examined. While most diseases of the oral cavity can be diagnosed by visual inspection, some disorders can be perplexing and their diagnoses may be elusive. Many disease processes, benign and malignant, localized and systemic, may present as an ulcerative lesion in the oral cavity.

The list of possible diseases that may present as an ulcerative lesion in the oral cavity is quite extensive. The focus here will be on the most common causes of these lesions. Included are acute and chronic processes, benign and malignant diseases, generalized and systemic manifestations of ulcerative lesions in the oral cavity.

Acute:

Lesions that are classified as acute will all present as small ulcerative lesions of recent onset, occur as single or multiple lesions, and are clinically shallow lesions with their border not raised above the mucosal surface. Although these lesions are of short-term duration, they may frequently be recurrent.
Trauma:

Trauma is the most common cause of ulceration of the oral mucous membranes. Traumatic ulceration may result from physical, chemical or thermal injury to the tissue. Diagnosis of traumatic ulceration is usually ascertained by the history alone. Acute traumatic ulceration is characterized by a break in the mucosa with a shallow base and nonraised margins. Depending on the cause, they may be diffuse or localized. These lesions are at least mildly painful.

Common physical injuries may include biting the cheek or tongue, mal-fitting denture irritation, trauma from a foreign object or even trauma from a toothbrush following over-zealous brushing. Direct mucosal contact with any number of drugs, most commonly aspirin, may cause ulceration. Chemical burns can also be seen in patients who have used phenol or silver nitrate for treating recurrent aphthous ulcers. These and other noxious chemicals cause oral ulcerations, often in the form of a generalized sloughing of the oral mucous membranes that produces a painful, raw, bleeding lesion. Hot foods or liquids may cause oral ulceration also. The classic example of this type injury is the “pizza burn” from hot melted cheese contacting the palate, tongue, or lips.

Traumatic injuries to the oral mucosa are treated by removing the responsible irritant, after which healing is usually uneventful. Healing may be expedited by cleansing the tissues with a mild saline rinse with half strength peroxide. Chemical and thermal injuries to the oral mucosa are often more painful, requiring analgesics during the healing period. Supportive therapy, including attention to oral hygiene and the use of cleansing mouth rinses, is indicated. Anesthetic rinses such as 2% viscous lidocaine, diphenhydramine, and Kaopectate may be used after first rinsing the mouth with a cleansing rinse. Also, a mixture of equal parts of a tetracycline-nystatin-decadron elixir may be helpful, as well as a topical corticosteroid. Although healing of thermal injuries is usually uneventful, supportive therapy, medications for pain, or topical corticosteroids, or all, may be indicated.

Recurrent Aphthous Stomatitis (RAS):

Recurrent aphthous stomatitis (RAS) is the most common oral mucosal disease in North America. These lesions are commonly called mouth ulcers or canker sores, and they have been reported to affect anywhere from 5% to 66% of the North American population. Interestingly, 60% of those affected are members of the professional class. This disorder has been commonly misdiagnosed and poorly understood, but there are now some interesting suggestions regarding etiology, and some very effective treatment regimens.

Patients with RAS will complain of recurrence of one or more painful oral ulcers at intervals ranging from days to months. RAS usually begins in childhood or adolescence and may decrease in both frequency and severity with age. Ulcers caused by RAS are confined to the soft mucosa of the mouth, or nonkeratinized mucosa that are not immediately adherent to bone. These areas include the buccal and labial mucosa, lateral and ventral tongue, floor of the mouth, soft palate, and oropharyngeal mucosa. The only areas in the mouth that are not affected by RAS are the hard palate and attached gingiva. RAS lesions are not confined to the oral cavity,
they may be found elsewhere in the digestive tract, but lesions appearing outside the oral cavity are often associated with systemic disorders.

RAS is subdivided into three categories based on the size of the ulcers and the disease severity. *Minor aphthae* are less than 1cm in diameter and heal completely in 7 to 10 days. The minor aphthae usually involve a prodromal stage of tingling and burning for 1 to 2 days and usually occur in clusters of up to 5 ulcers. These lesions are shallow and round to oval in shape with a gray to yellow membrane. Minor aphthae are very painful for about 4 days, then heal completely without scarring after several more days. *Major aphthae* are uncommon and involve irregular deep ulcers of 1 to 3 cm in size. They may have a raised border and can take 4 to 6 weeks to heal. Major aphthae can leave extensive scarring and distortion with healing, and patients are rarely lesion free. The irregular and chronic nature of these lesions often necessitates a biopsy to rule out squamous cell carcinoma. *Herpetiform aphthae* are also uncommon, and consist of crops of up to 150 very small (1-3mm) ulcers that heal completely in 7 to 10 days. This category of RAS is unfortunately named because these ulcers, like all RAS ulcers, are completely unrelated to the herpes virus.

Many theories for the etiology of RAS have been proposed and investigated, but none has been proven. A viral association with viruses such as adenovirus, herpes, and varicella-zoster has been suggested, but is not supported by the majority of the literature. These viruses are ubiquitous and there are no reports of successful treatment of RAS with antiviral therapy. A bacterial association has also been proposed due to the fact that streptococcus species have been cultured from patients with RAS and RAS outbreaks have been associated with increased antibody titers. This has not been corroborated, however, and it is clear that antibacterial drugs do not cure RAS. Other theories for the etiology of RAS include association with estrogen and progesterone levels in women, anxiety, stress, and the "type A" personality. There is clearly a higher incidence of RAS among college, medical, and dental students, and there is a higher incidence among elementary students of higher socioeconomic status. The role of nutrition is controversial. Deficiencies in vitamins, zinc, and iron have been implicated as the occurrence of RAS improved somewhat with replacements. Some patients with gluten-sensitivities may experience outbreaks that resolve with a gluten-free diet, but lesions in the majority of patients do not respond with dietary measures. Sensitivities to foods such as nuts, chocolate, cereals, tomatoes, dairy products and citrus fruits have been implicated also, and the avoidance of such foods may decrease outbreaks. Trauma, as mentioned above, may incite outbreaks. Nicotine, interestingly, seems to have a protective effect. Studies have shown that resumption of smoking after cessation caused pre-existing ulcers to heal within a few days. Also, nicotine gum has been shown to cause ulcer healing and prevention when taken for 1 month, with relapse upon discontinuation of the gum. One hypothesis for the protective effect is the keratinizing action of nicotine on the oral mucosa. There are also numerous investigations into the possibility of an immune mechanism. When certain, yet undefined, antigens are presented to lymphocyte subpopulations, there is an autoimmune reaction against targeted epithelial cells. However, the disease is intermittent and does not always reliably respond to immunomodulating drugs. The only clear etiologic factor for RAS is that a family history may increase a person's risk for developing the disease by 20%.
The diagnosis of RAS is usually made by taking a thorough history and performing a systematic physical exam. The typical presentation and appearance are as described above. Patients may report any of the above mentioned triggering factors. The examination of the patient will show the typical shallow ulcers anywhere in the mouth except for the hard mucosa (hard palate and attached gingiva). With these findings, it is appropriate to initiate treatment without any further workup.

Goals in the management of RAS reflect that it is generally mild and self-limiting, and that, currently, there is no treatment widely believed to be curative. Therefore, treatments that reduce pain and maintain function during attacks, or that reduce the severity and frequency of recurrent attacks, are considered successful. Treatments used for this generally benign disease should not be associated with more morbidity that the disease itself. Treatment options are those that either provide palliation or those that truly alter the course of the disease. Palliative medications are generally applied topically and are available over the counter. Preparations of benzocaine, diclonine, or benzydamine can be effective. Also, as described above, mixtures of lidocaine, diphenhydramine, and Kaopectate may provide some relief. Other therapies that have been reported include hydrogen peroxide, phenol, silver nitrate, topical antimicrobials, antivirals, and antiseptic mouthwashes. These treatments are generally not very effective. The mainstay of treatment of RAS is topical steroid application. Triamcinolone 0.1% in a cream, paste or an aqueous base is the most commonly used. If applied in the prodromal stage, outbreaks can be prevented or even aborted. Beclomethasone spray has also been shown to be of benefit in treating RAS. If patients have a large number of lesions or long duration of attacks, a "burst regimen" of systemic steroid treatment may be used in addition to topical therapy. For RAS major that is difficult to control, intralesional triamcinolone injection will often promote ulcer healing. Because oral candidiasis has been reported in patients using steroid sprays and solutions, prophylaxis with antifungal agents should be considered in these patients.

Behcet’s:

In 1937, Behcet described a symptom complex consisting of recurrent aphthous ulcers of the mouth, as well as recurrent painful ulcers of the eyes and genitals. Behcet's disease is a multisystem disorder that tends to affect persons of Mediterranean, Middle Eastern, or Japanese decent. Most of these patients present with the classic triad of aphthous ulcers, genital ulcers and uveitis or conjunctivitis. Other systemic manifestations may include arthritis of the rheumatoid type, neurological, vascular, and gastrointestinal involvement, as well as malaise and fever with ulcer eruptions, papulopustular truncal lesions, or development of a pustule at any site of minor skin trauma. The diagnosis of Behcet's disease is made on the basis of the clinicopathologic findings, which may be confused clinically with Stevens-Johnson syndrome and Reiter's disease. The oral manifestations of Behcet's disease may be treated in the same manner as those not associated with the disease, but these patients need referral for systemic treatment as well.

Herpesvirus Infection:

Herpes simplex is an acute viral infection that may produce a wide variety of symptoms. Two strains of herpesvirus occur, HSV-1 and HSV-2. HSV-1 primarily infects the oropharynx, whereas HSV-2 most frequently infects the genitals. HSV-2, however, may infect the
oropharynx just as HSV-1 may infect the genitals, and each may recur in that site. Infections with HSV are divided into two types: (1) primary and (2) secondary or recurrent infection, with the majority of primary infections of both HSV-1 and HSV-2 being clinically unapparent to the patient. Following primary infection, the HSV will remain latent in neural tissue, such as the trigeminal ganglia. Reactivation of latent virus then results in spread through centrifugal migration of infectious virions along peripheral sensory nerves to the mucosal surfaces, resulting in recurrent herpes infection. The term "herpetic gingivostomatitis" refers to a primary infection caused by herpes simplex. Primary infection usually occurs in young patients and is often asymptomatic but may be associated with systemic symptoms of fever, chills, and malaise. Vesicles will appear first and will progress to ulcers that crust. The lesions from primary herpes stomatitis can occur anywhere in the mouth, including the hard mucosa. Secondary or recurrent herpes is not associated with a systemic illness and is characterized by small vesicles that occur only on the hard mucosa (i.e. the hard palate and attached gingiva). Prodromal signs, such as burning, itching, or tingling, will usually occur about 1 day before the vesicles develop, and the vesicles tent to recur in the same spot. The diagnosis is generally made on history and physical examination alone, but can be confirmed if desired by a biopsy or Tzanck smear. In most patients recurrent herpes is benign and self-limiting, and treatment is supportive. Anesthetic agents are palliative. Antiviral drugs may shorten the course of disease and are especially helpful in immunocompromised patients.

The varicella zoster virus, HHV-3, shares many similar traits with the herpes simplex virus. It may remain dormant in nerve ganglia after a primary infection and can be reactivated many years later. If the trigeminal nerve is involved, HHV-3 may present as oral ulcers. These lesions will show a sharp demarcation at the midline and also will recur in the same spot. Treatment is generally supportive; Valacyclovir 1 gram three times a day for one week also has proven beneficial.

**Herpangina:**

Herpangina, despite its name, is not caused by a herpesvirus. Herpangina is caused by the Coxsackie A virus and generally occurs in children less than 10 years old. Children are most affected in the summer and fall seasons and this infection is often asymptomatic or subclinical. Symptomatic children develop systemic symptoms of headache and abdominal pain 48 hours prior to developing papulovesicular lesion of the tonsils and uvula. After onset of these ulcerative lesions patients will typically complain of sore throat. Supportive therapy is all that is required for treatment of Coxsackie virus infections.

**Chronic:**

The clinical features of chronic oral ulcers are very different from acute, short-term ulcers. Chronic oral ulcers share in common the fact that they are frequently well circumscribed with raised borders above the mucosal surface and have an indurated, cratered base. Other times, they may present as a diffuse granulomatous-appearing lesion. They are further characterized by their nonresolution within 2 to 3 weeks as, seen with acute ulcerations. An acute ulcer will rarely persist as such for longer than 2 weeks but will begin to develop hyperplastic borders with enlargement of the ulcer base. In cases which an ulcer that was initially thought to be acute or
short term has persisted and begins to develop the clinical features of a more chronic process, the clinician should rethink the diagnosis. It is not uncommon for the clinical history of the lesion to be vague with regard to the length of time it has been present or to the circumstances regarding its initial appearance. This may be accounted for by the fact that chronic ulcers, unlike their acute counterparts, may be either painless or painful, often being painless until they become secondarily infected or enlarged to the point of causing dysfunction or involving peripheral nerves. Also, chronic ulcers typically do not demonstrate the site specificity seen in their acute counterparts. Chronic ulcers typically fall into one of three broad categories: traumatic, infectious, or neoplastic.

**Trauma:**

Chronic ulcers of a traumatic origin develop when the traumatic stimulus has persisted over time. Such is the case in ill-fitting dentures worn for a long duration even after an ulcer has formed. Removal of the traumatic stimulus is often enough to promote healing, but specific therapy such as topical or injected steroid may be necessary. Performing an incisional biopsy as a diagnostic procedure may provide the stimulus for resolution of the ulcer. Rarely is it necessary to surgically excise the lesion if healing is not taking place.

**Infection:**

Infectious causes of chronic oral ulceration are rare. Viral infection will seldom lead to development of a chronic oral ulcer. One instance in which this might be seen is in a severely immunocompromised AIDS patient when the recurrent herpes simplex virus infection persists and does not resolve in the usual time. Although secondary, nonspecific bacterial infection of chronic oral ulcer is common, specific bacterial infections are not. An example of a chronic ulcerative disease caused by specific bacterial infection would include a gumma in tertiary syphilis, a tuberculous ulcer, or actinomycosis. Deep mycotic infections, such as histoplasmosis or blastomycosis, will typically cause chronic, deep-based ulcers that may be granulomatous and friable in appearance. Candidiasis is the most common type of fungal infection involving the oral mucous membranes. The causative organism, *Candida albicans*, is a common normal inhabitant of the mouth and is nonpathogenic under normal conditions. Oral candidiasis usually occurs only when there has been a reduction in the competitive oral micro flora, as seen following long-term broad-spectrum antibiotic therapy, or when there is a decrease in the resistance of the host tissue to infection. When there is a decrease in the host resistance to infection, some predisposing factor is usually present and should be sought out. Possibilities include infancy, pregnancy, decreased salivary flow, denture, poorly controlled diabetes, hypoparathyroidism, hypoadrenocorticism, malnutrition, immunosuppression including AIDS, underlying malignancy, and lymphoreticular disorders such as agranulocytosis, leukemia, lymphoma, etc. Oral candidiasis usually presents with profuse creamy white plaques, which cover any portion of the mouth, rub off easily, leaving a bright red, raw, bleeding surface. In some cases it may present as a brightly erythematous mucosa with only scattered white plaques. Chronic hyperplastic candidiasis is the form of the disease that presents clinically as a leukoplakic lesion that does not rub off the underlying mucosa. A biopsy is necessary to differentiate this form of candidiasis from other forms of leukoplakia. Although the diagnosis may be made primarily on the clinical features alone, cytologic smears are helpful in confirming it. This may
easily be done by making a smear of the suspected lesion on a glass slide, adding a drop of 20% potassium hydroxide, and examining the slide for the typical hyphae. Treatment of candidiasis is usually with nystatin oral suspension. Before topical application the oral mucous membranes should first be debrided with an oxidizing mouth rinse such as half-strength peroxide. When topical therapy fails, systemic therapy with ketoconazole tablets may be implemented. With severe systemic infection, intravenous amphotericin therapy may be employed.

**Neoplasm:**

Squamous cell carcinoma (SCC) is the most common malignancy of the oral cavity by far and therefore must not be overlooked. These lesions often begin as mixed white or red lesions and occur most often on the tongue, floor of mouth, or soft palate. Later lesions will often involve irregular ulcers with indurated or heaped margins. These lesions are chronic and do not heal with time or immunosuppressants. Oral SCC most often presents as an ulcerative lesion but can also be exophytic, infiltrative, or verrucoid. Histologically, these lesions show typical malignant epithelioid cells with intracellular bridging and possible keratin production. Treatment of oral SCC generally involves wide local resection, radiation therapy, or both. Clinically apparent metastases to cervical nodes will be found on presentation in about 30% of patients; the presence of occult nodes must be considered and addressed as well. Decision making in the workup of early SCC involves correlating the history and physical examination. Worrisome historical factors are the presence of risk factors of tobacco and alcohol use and lesions that have not healed for several weeks to months. Factors on examination are irregular ulcers with indurated or heaped margins and of course enlarged cervical nodes. Areas of leukoplakia in the oral cavity should generally be biopsied or carefully followed. Areas of long term erythroplakia, induration, or exophytic growth in the oral cavity should generally be biopsied immediately. A high degree of suspicion must be maintained to allow early diagnosis, as these malignant lesions may mimic lesions of lichen planus, pemphigus or pemphigoid, sialometaplasia, or even major aphthae.

**Necrotizing sialometaplasia:**

Necrotizing sialometaplasia is an inflammatory condition believed to result from transient ischemia to minor salivary gland tissue. This ischemia may result from prior surgery or radiation therapy or from chronic irritation from dental infection or ill-fitting dentures. These lesions often present as deep ulcers of the hard palate and usually occur in white males over the age of 50. Histologically, the lesions are characterized by lobular necrosis of salivary gland tissue, chronic inflammatory cells, squamous metaplasia of ducts or acini, and some maintenance of salivary morphology. These cytological features can cause this disorder to be confused with SCC or mucoepidermoid carcinoma. These lesions are benign and generally resolve without specific treatment in about 6 to 10 weeks.

**Generalized:**

Generalized oral ulcerative disease is a broad classification encompassing a wide variety of causative agents or conditions. Included here are some of the most common conditions that may cause ulceration of the oral mucosa.
Contact Stomatitis:

Ulceration of the oral mucosa may result from sensitization with a drug or other material. This is due to prior exposure of this area to a causative drug or material or one that is chemically very similar. Subsequent contacts following stimulation of the body’s immune system to produce antibodies against the sensitizing agent will cause the local tissue reaction to recur. Since this reaction is localized to the mucosa, rather than in the circulation, no severe anaphylaxis occurs. Some allergens that are responsible for this type reaction include dental prosthetic material, such as the acrylic resin used to fabricate dentures; oral and cosmetic preparations used by the patient such as denture powders and creams, mouthwashes, and lipstick; topical medications used by the patient such as antibiotic lozenges; topical anesthetics used by the dentist such as procaine; and other things like chewing gum, candy, and so on. The response may vary from mild edema to erosive or vesiculobullous lesions. Treatment includes cessation of the causative agent. Prompt healing usually occurs and antihistamines will speed resolution of the lesions.

Radiation Mucositis:

Reactions that result from radiation therapy for malignancies in the oral cavity and oropharynx may be quite severe. Radiation mucositis is an early and acute reaction usually beginning during the second week of radiation. It usually presents as erythema followed by spotty mucositis. The spotty mucositis will coalesce to form areas of ulceration covered by a yellow-white pseudomembrane with a bright erythematous border. The lips are often involved, with a tenacious pseudomembrane and crusting being noted in the areas of ulceration. Exquisite pain and burning may be present even at rest and are exacerbated by spicy foods. Healing usually begins with the cessation of therapy and is usually complete within 3 to 4 weeks, though the discoloration and mucosal atrophy may be life long. This often makes dental prosthesis placement difficult. Treatment is both supportive and therapeutic and includes oxidizing mouth rinses described above to help break up the thick, ropelike saliva covering the mucous membranes. By doing so, other supportive or therapeutic medications will have a greater effect. Local anesthetic rinses described above will reduce some of the discomfort and are particularly useful before meals. Topical antibiotic solutions may aid in preventing secondary infection. Prostaglandin inhibitors such as indomethacin have been shown to delay the onset of significant radiation mucositis and reduce the severity of this complication as it occurs.

Cancer Chemotherapy:

Cancer chemotherapy agents are extremely powerful drugs that have as a side effect the potential for disruption or destruction of the oral tissues. Chemotherapy-induced stomatitis is a common side effect of many of the antineoplastic drugs and may present as an exquisitely painful mucositis involving any of the oral mucous membranes either in a localized or generalized fashion. Also, the concomitant suppression of the immune system by these agents may make the patient unable to fight secondary opportunistic infections that may develop in areas in which the mucous membrane has become ulcerated. These oral manifestations of chemotherapy occur shortly after the beginning of therapy, peak within a week after its cessation,
and slowly resolve unless otherwise complicated by infection, hemorrhage, or restarting therapy. These lesions are treated palliatively with cleansing mouth rinses, topical anesthetics, antimicrobial agents, or with the use of analgesics.

**Dermatologic Disorders:**

Many dermatologic disorders have not only cutaneous manifestations but may affect the oral mucosa as well. Below are some of the more common.

**Erythema Multiforme:**

Erythema multiforme is a rapidly progressive, vesiculobullous eruption of unknown etiology that most commonly affects young adults. An allergic reaction to drugs, infection, food or alcohol is suspected resulting in antigen-antibody complex deposition in the vessels of the subdermis. Characteristic ring-like “target lesions” appear on the skin but are rarely seen on the oral mucosa. Diffuse ulceration and crusting of the lips, tongue, and buccal mucus are more common oral manifestations. The lesions are usually self-limited and heal without scarring in a few weeks. The histopathology in erythema multiforme is nonspecific and its explosive onset after a precipitating infection or drug is key in differentiating it from other vesiculobullous diseases. Stevens-Johnson syndrome is a severe form of erythema multiforme with systemic symptoms and involvement of the eyes, gastrointestinal tract, and genitalia. Treatment of severe cases of erythema multiforme and Stevens-Johnson syndrome requires systemic steroids. The prognosis of erythema multiforme is generally good but blindness or death can occur with Stevens-Johnson syndrome.

**Lichen Planus:**

Lichen planus is a chronic disease of the skin and mucous membranes which is felt to be due to basal cell layer destruction by activated lymphocytes. Characteristic skin lesions include violaceous, pruritic papules over the flexor surfaces of the extremities and several types of oral lesions have been described, including reticular, plaque, and atrophic (erosive) variations. Reticular lichen planus shows fine, slightly raised, white or violaceous threadlike lesions in a ring like, lacy pattern (Wickman’s striae). These lesions are often located on the buccal mucosa. The hypertrophic form resembles leukoplakia as homogenous white plaques. Atrophic or erosive lichen planus present as erythematous shallow ulcers that, in contrast to most forms of lichen planus, may be painful. Histologically, lichen planus shows hyperkeratosis, “saw-tooth” rete ridges, liquefactive degeneration of the basal cell layer, and a band-like” subepithelial inflammatory infiltrate. Discrete eosinophilic ovoid bodies (Civatte bodies) are occasionally seen in the basal cell layer. Treatment is symptomatic and mild cases usually do not require therapy. Topical steroids may be useful in controlling local symptoms and topical retinoids, with antikeratinizing effects, can be used for the plaque form. Dapsone has also been used for severe forms with some success.
Benign Mucus Membrane Pemphigoid (BMMP) and Bullous Pemphigoid:

Pemphigoid is characterized by the formation of tense, subepithelial bullae of the skin and mucous membranes. Two separate entities, benign mucous membrane pemphigoid and bullous pemphigoid, are often described but they represent variants of the same disease. BMMP occurs in the 40 to 50 year old age group and affects women twice as often as men. Tense oral bullae form and may persist for days before rupturing, forming large erosions that usually scar with healing. Gentle rubbing of adjacent uninvolved skin may denude the epithelium, production an ulcer or vesicle (positive Nikolsky’s sign). Involvement of the conjunctivae is relatively common and may lead to blindness. Bullous pemphigoid affects older patients and cutaneous lesions are more common than mucosal lesions. The lesions are similar but may heal with less scarring. Both lesions are histologically similar and show direct immunofluorescence to IgG in the basement membrane, supporting an autoimmune etiology. Biopsy shows subepithelial clefting with dissolution of the basement membrane but no degenerative intraepithelial changes. Treatment is often difficult and multiple sites are involved but potent topical steroids or intralesional steroids can be effective. Systemic steroids may be required for severe cases for ocular involvement. Steroids combined with immunosuppressants maybe needed in refractory cases.

Pemphigus Vulgaris:

Pemphigus vulgaris is a more severe, potentially fatal form characterized by intraepithelial bullae and acantholysis. The disease is more common in Jewish and Italian people and males are more often affected than females. The lesions almost invariably initially involve the oral mucosa and the bullae are so easily ruptured that painful irregular ulcers are often the presenting lesions. The most common sites include the buccal mucosa, palate and gingiva. Microscopically, the lesions show early intercellular edema and loss of intercellular bridges. The lack of cohesion allows cell separation and rounding (acantholysis), and intraepithelial clefting (as opposed to subepithelial clefting in bullous pemphigoid) occurs. The basal cells remain attached to the lamina propria creating a “tombstone” affect and free acantholytic cells assume a spherical form (Tzanc cells) which are considered pathognomonic for pemphigus vulgaris. Direct immunofluorescence shows antibodies against intercellular bridges, more specifically against the desmoglein 3 protein in the desmosomes. Serum levels of intercellular antibodies have been shown to correlate with the severity of the disease. Treatment with high dose steroids has greatly reduced the mortality and morbidity of pemphigus but significant morbidity from steroids has been reported as doses of 100 mg/day are often required for initial control. The dose can be tapered down to 20 mg/day over three months. Intramuscular gold has been used with some success and plasmaphoresis is currently under investigation.
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