

Chapter 72: Benign Tumors and Tumorlike Lesions of Oral Cavity and Oropharynx

Isaac van der Waal, Gordon B. Snow

Benign tumors occur more frequently in the oral cavity than in the oropharynx. A distinction, however, between neoplasms of the oral cavity and the oropharynx would be rather artificial. One can hardly think of a tumor that occurs in the oral cavity and not in the oropharynx, and vice versa. The benign tumors of both locations are therefore grouped together. Tumors arising from adjacent nerves or tumors of the deep lobe of the parotid gland may indent the lateral wall of the oropharynx and appear as symptomless swellings. This chapter does not discuss these tumors of the parapharyngeal space or neoplasms that arise in the nasal cavity and maxillary sinus that manifest themselves as oral swellings. The odontogenic tumors are also dealt with elsewhere. This chapter discusses reactive, cystic, and developmental lesions.

Cysts

The cysts arising in the soft tissues are discussed here but not cysts arising in the jawbones, such as some of the fissural cysts (for instance, the nasopalatine duct cyst), odontogenic cysts, and bone cysts. The mucous retention cyst is included in the discussion of salivary gland lesions.

Epidermoid and dermoid cysts

An epidermoid cyst is a cyst lined by epidermis without the adnexal structures in the fibrous wall that a dermoid cyst has. Sometimes the term *dermoid cyst* is used in a clinical way, using histologic subdivisions such as dermoid type, epidermoid type, and teratoid type.

An epidermoid cyst may result from traumatic implantation of epithelial cells into surface epithelium, whereas in a dermoid cyst entrapment of epithelium during the embryologic phase seems to be the most likely explanation.

Both the epidermoid and dermoid cysts rarely occur in the oral cavity and are even rarer in the oropharynx (Ziesmann and Laubert, 1989).

Epidermoid and dermoid cysts may occur in the floor of the mouth, the lips, and the cheek mucosa. Just a few cases of lingual involvement have been reported. The clinical aspect is not characteristic and merely consists of a cystic swelling (Fig. 72-1).

Stratified squamous epithelium without adnexal structures lines an epidermoid cyst. When adnexal structures (such as sebaceous glands) exist, a diagnosis of dermoid cyst can be made.

In most instances epidermoid and dermoid cysts can be enucleated. Only in very large cysts must marsupialization be considered. Recurrence is rare (Blenkinsopp and Rowe, 1980).

Nasolabial cyst

The nasolabial cyst is a developmental cyst probably derived from epithelial remnants of the nasolacrimal duct. In reviews of the literature less than 200 cases could be collected, which demonstrates its rarity (Allard, 1982; Wesley et al, 1984).

The nasolabial cyst usually appears as an asymptomatic extremely slow-growing swelling of the soft tissues in the nasal vestibule, the nasolabial fold, or the mucobuccal fold of the upper jaw. Only in large cysts may a radiograph show some erosion of the underlying bone. The cyst may be confused clinically with other lesions, especially those of an odontogenic nature, so a careful dental examination should be carried out.

Various types of epithelial cells may form the lining of the cyst lumen, often including ciliated cells and goblet cells.

In almost all cases the cyst can be removed through an intraoral approach. If a small perforation of the nasal mucosa appears, it can be left alone.

Eosinophilic Granuloma of Mucosa

Eosinophilic granuloma of the oral mucosa (also called *traumatic granuloma*) is a benign lesion with an unknown cause. It has no relation to eosinophilic granuloma of bone. The tongue is a site of predilection.

Until 1984 approximately 25 cases had been reported (Devenish, 1981; Tiwari et al, 1984). The eosinophilic granuloma may occur at any age and does not show a preference for either sex. The majority of the eosinophilic granulomas that have been reported were ulcerative, not indurated, and rather well circumscribed. The ulceration is probably the result of the moist environment and frequent traumatization (Pindborg, 1985). The lesion may be confused clinically with a squamous cell carcinoma.

Histopathologic examination shows varying numbers of eosinophilic granulocytes, neutrophils, plasma cells, and histiocytes. No true granuloma formation exists.

Eosinophilic granulomas heal spontaneously in a matter of weeks; therefore surgical intervention is not indicated.

Fibroma

Almost all lesions in the oral cavity that are called fibromas are not true neoplasms, but merely fibrous overgrowths caused by chronic irritation. Many authors therefore prefer the term *fibroepithelial polyp* or *fibrous hyperplasia* for this type of lesion.

Axéll (1976) encountered a prevalence for fibromas in 3.25% of the adult Swedish population. They rarely occur before the fourth decade and show no preference for either sex.

A fibroma has a smooth overlying mucosa and is often pedunculated. The size may vary from a few millimeters up to some centimeters. The consistency may vary from soft and

myxomatous to firm and elastic. A fibroma is asymptomatic and can be located at all sites of the oral and oropharyngeal mucosa (Fig. 72-2).

The microscopic picture may show a collagenous stroma and a varying number of inflammatory cells. The fibroblasts may have a giant cell appearance, justifying in some cases the term *giant cell fibroma*, which does not have any clinical implication (Houston, 1982). A fibroma is not demarcated or encapsulated. Vascularity may be scarce or very abundant. In the latter case it may be difficult to differentiate the lesion either from a hemangioma with secondary inflammatory signs or from a pyogenic granuloma. In some cases myxoid changes can be observed and also osseous and chondroid metaplasia.

Treatment consists of conservative excision. At the same time any possible irritating factors should be removed. Recurrences are exceptional.

Granular Cell Tumor

A granular cell tumor, also called *granular cell myoblastoma* or *Abrikosov's tumor* in the past, is a benign lesion of the soft tissues whose origin and nature are not fully understood. For a long time the lesion was considered a benign neoplasm related to muscles. Currently a neurogenic origin seems to be more likely. Moreover, evidence is increasing that the lesion is not a true neoplasm but merely a benign proliferation of peripheral neurogenic elements of the Schwann cell (Mazur et al, 1990) or even represents a degenerative alteration of these cells.

It has no preference for race, sex, or age. The tumor may occur in children and even be present at birth.

The granular cell tumor occurs everywhere in the body, the oral cavity being a favorite location. The majority of the oral cases are located in the tongue. In rare instances multiple tumors have been reported, located either in the oral cavity or elsewhere in the body (White et al, 1980). The tumor usually appears as a firm, submucosal nodule. Its size is variable, from a few millimeters up to a few centimeters. The color of the overlying mucosa may be unchanged but may also be somewhat yellow or pink. Ulceration of the epithelium is rare (Fig. 72-3). In congenital cases the tumor is located on the alveolar ridge and is called *epulis of the newborn*.

Histologic examination shows a somewhat circumscribed but not encapsulated mass of large cells with a coarse, granular, slightly eosinophilic cytoplasm. No signs of cellular or nuclear polymorphism or any mitotic activity exist. In about 50% of cases the overlying epithelium shows pseudoepitheliomatous hyperplasia, which may be mistaken for a differentiated squamous cell carcinoma.

Some authors believe that a malignant counterpart of this lesion exists. In a series of 95 cases malignancy was reported in three cases; the size of the neoplasm, growth speed, and invasiveness seemed to be of greater value in differentiating benign from malignant tumors than histologic examination alone (Strong et al, 1970).

Management of a granular cell tumor consists of conservative surgical removal.

Recurrences are rare, even when the excision has not been radical. Radiotherapy of a granular cell tumor has not been shown to be successful.

Hemangioma, Hemangiopericytoma, and Phlebectasias

A hemangioma is a benign lesion of blood vessels or vascular elements. The majority of oral and oropharyngeal hemangiomas seem to be of a developmental nature. In some instances lesions are probably a mixture of hemangioma and lymphangioma, leading to the term *angiomatosis*. In rare instances a hemangioma is located within the jawbones.

Hemangiomas of the oral cavity are often present at birth or shortly thereafter. They have a strong preference for occurrence in the tongue and the floor of the mouth (Fig. 72-4). A hemangioma of the tongue may affect just a part of the tongue or the entire tongue, producing macroglossia. The color of a hemangioma may vary from bluish to purple or fiery red. The texture of the mucosa may be more or less unchanged, showing only an increased vascularity on the surface; in other cases, however, there is a pebbly appearance. Pain is not a prominent feature, except in cases of traumatization or secondary inflammation. In severe cases loss of tongue mobility may occur. Bleeding, either spontaneously or from mechanical irritation, can be a serious problem. Angiography may be an aid in diagnosing a hemangioma (Zhao-ju et al, 1983).

A hemangioma may histologically consist of numerous irregular, blood-filled spaces, lined by endothelial cells and surrounded by connective tissue. When a large number of proliferating endothelial cells line small capillaries, the lesion is referred to as a *capillary hemangioma*. In the case of large dilated blood sinuses, the term *cavernous hemangioma* is applied. A cavernous hemangioma and a lymphangioma may occasionally be indistinguishable from each other, both clinically and histologically. In the case of ulceration (and thereby the presence of inflammatory cells) distinguishing a hemangioma from a pyogenic granuloma may be impossible.

When hemangiomas undergo regression, extensive sclerosis can occur, sometimes followed by calcification. Such concretions are called *phleboliths* (Keathly et al, 1983).

The majority of hemangiomas do not require treatment and regress spontaneously during childhood. Therapeutic management of a large, persisting, or even growing hemangioma is a difficult problem. A conservative approach seems justified: that is, managing only the areas that produce bleeding. In large, diffuse lesions the use of cryosurgery or CO₂ laser therapy does not seem to be effective. Injection of sclerosing agents has been advocated in the past but has not been shown to be effective. The technique of selective percutaneous embolization before surgery has emerged as a valuable adjunct to surgery in the management of such lesions (Braun et al, 1985; Thompson et al, 1979). Radiotherapy should be avoided because of possible late adverse sequelae.

A *hemangiopericytoma* is a complex neoplasm that should be regarded as malignant, not in the usual sense of a 5-year survival but over the lifetime of the host (Batsakis, 1979). Occurrence in the oral cavity and the oropharynx is extremely rare (Morita et al, 1982). The clinical appearance is just a firm, usually well-circumscribed swelling of the mucosa.

In patients above the age of 40 to 50 years, single or multiple, bluish, hemangioma-like changes may occur in the oral and lingual mucosa as the result of vein widening. These are so-called *phlebectasias* (Ettinger and Manderson, 1974). No treatment is required.

Keratoacanthoma

A keratoacanthoma, also called *molluscum sebaceum*, is a benign cutaneous lesion that is believed to arise from hair follicles. Its etiology is unknown. Men are affected twice as often as women.

A keratoacanthoma is usually a solitary and rapidly growing lesion. It appears as a well-circumscribed, slightly elevated lesion that rarely measures more than 1 cm. Centrally a crateriform excavation can be seen with slightly indurated borders. Clinically the lesion may mimic a squamous cell carcinoma. In most cases, however, spontaneous regression occurs, usually within a few months.

Occurrence on the lower lip is not uncommon; intraoral and oropharyngeal locations are exceptional (Eversole et al, 1982).

Histologic examination of a keratoacanthoma shows hyperplastic epithelium with carcinoma-like features. In fact, no distinct histologic features seem to be available that can in every case histologically substantiate the diagnosis.

Because of the clinical and histologic uncertainty about the diagnosis, the lesion is often treated as a squamous cell carcinoma.

Leiomyoma

A leiomyoma is a benign neoplasm composed of smooth muscle cells. The source of a smooth muscle tumor in the oral cavity is believed to be the walls of blood vessels or undifferentiated mesenchymal cells. Occurrence of a leiomyoma in the oral cavity is rare. In two reviews of the literature (Natiella et al, 1982; Praal et al, 1982) approximately 80 oral leiomyomas were collected.

The majority of reported leiomyomas of the oral cavity and oropharynx were small, circumscribed, and asymptomatic swellings, covered with an apparently intact mucosa. They were either single or multiple.

A leiomyoma is composed of whorls of smooth muscle cells. The diagnosis of leiomyoma can be difficult to make just from light microscopic examination. The tumor should be differentiated from fibromatosis and schwannoma on the one hand and leiomyosarcoma on the other hand.

Management consists of surgical removal.

Lingual Osteochondroma

An osteoma of the soft tissues is a benign lesion that consists of bone. A similar definition can be given for a chondroma. In some cases an intermingling of the two lesions occurs, leading to the term *osteochondroma*. The osteochondroma probably represents a choristoma rather than a neoplasm.

It has no predilection for race. There seem to be more occurrences in women between the ages of 20 and 40 years. A total number of about 70 cases have been reported in the world literature (Van der Wal and Van der Waal, 1987).

Although the osteochondroma may occur everywhere in the oral cavity, the tongue is by far the most common site. Clinically the lesion appears as a pedunculated swelling of about 1 cm, usually in the posterior part of the dorsum of the tongue near the foramen cecum. Dysphagia may be the only symptom. In the clinical differential diagnosis, a lingual thyroid and a salivary gland tumor should be taken into account.

The histology shows a well-circumscribed lesion of mature lamellar bone or cartilage or a mixture of those tissues. Haversian canals may exist in the bone. Blood-forming elements are rarely present.

Management consists of surgical removal.

Lingual Thyroid

Lingual thyroid is a condition in which thyroid tissue is found in the foramen cecum area of the tongue. Approximately 400 cases have been reported in the literature (Van der Wal et al, 1986).

Ectopic thyroid tissue becomes clinically manifest almost exclusively in women and is perhaps the result of hormonal influences. The age of onset ranges from birth to the sixth decade, with a peak in the second decade. No racial or geographic predilection exists.

The lesion appears as a nodule or mass in the foramen cecum area, reaching a size of a few centimeters. The overlying mucosa may show an increased vascularity. The patient may experience dysphagia, dysphonia, and a feeling of fullness or pain. In some cases the lingual thyroid tissue is the only functioning thyroid tissue. Therefore a thyroid scan is mandatory.

The histopathologic findings of lingual thyroid are similar to those of cervical thyroid tissue. The chance of malignant degeneration in a lingual thyroid is rather small. Just a few such cases have been reported (Gooder, 1980).

Treatment of lingual thyroid is not always necessary and largely depends on the complaints. Most patients are in an euthyroid state, with normal thyroxine (T3), triiodothyronine (T4), and T7 determinations. The serum thyroid-stimulating hormone concentration may be increased. Some patients show hypothyroidism. Hyperfunction is exceptional. When the mass is causing functional impairment, suppressive doses of thyroid hormones may be sufficient; when it is not, total excision should be considered. This usually

can be done via an intraoral approach, which may require midline splitting of the tongue.

Lipoma

A lipoma is a benign neoplasm composed of fat cells. Its cause is unknown. Trauma and metaplasia of perivascular connective tissue have been suggested as playing a role. Oral and oropharyngeal lipomas are rather rare. There is no predilection for sex. An oral lipoma rarely occurs before the second decade.

A lipoma appears as a sessile, soft, and asymptomatic swelling (Fig. 72-5). When it is located superficially, a yellowish texture can be seen. In rare instances bilateral or multiple occurrence has been reported (Pisanty, 1976).

Histologic examination of a lipoma shows a well-delineated mass of lobules of fat cells with fibrous septa interspersed between them. In rare instances one encounters a benign "infiltrative" lipoma, which should not be confused with a liposarcoma (Bennhoff and Wood, 1978). The distinction between a benign lipoma and a low-grade liposarcoma may indeed be difficult in some cases. When fibrous tissue is a substantial part of a lipom, the term *fibrolipoma* can be applied. When vascularity is a prominent feature, the term *angiolipoma* is used.

Surgical removal is the treatment of choice. Recurrences have not been reported.

Lymphangioma

A lymphangioma is a benign lesion characterized by proliferation of lymphatic vessels. It is a hamartoma rather than a neoplasm. In some cases making the distinction between a lymphangioma and hemangioma is difficult, in which case the term *angiomatosis* may be used.

Occurrence in the oral cavity and oropharynx is rather rare, the tongue being the usual site (Fig. 72-6). The size may vary from pinhead to massive dimensions. The typical lymphangioma is characterized by irregular nodularity of the mucosa, with gray and pink, grapelike projections.

Histologically, endothelium-lined spaces are found in the connective tissue. In some cases the spaces contain elements of blood, making the distinction between lymphangioma and hemangioma difficult or even impossible to make. No true encapsulation occurs and quite often the proliferation of lymphatic vessels spreads diffusely into the surrounding soft tissues.

During infectious episodes the combined use of corticosteroids and antibiotics may be required. Small lesions can be excised. With extensive, symptomatic lymphangiomas surgical removal of the bulk of the lesion seems to be the only possible treatment. Complete surgical excision is difficult, particularly in the mouth, because of the multiple fingerlike projections extending into the adjacent tissues. Steroids and antibiotics should be administered during and after surgery (Goldberg et al, 1977). Recurrences are common.

Lymphoid Patches

Lymphoid patches are localized, solitary or multiple lymph follicles occurring in the oropharynx, including the base of the tongue. In the latter location these patches are called *lingual tonsils*. Lymphoid patches are to be regarded as physiologic rather than pathologic and can be seen in almost every individual.

Lymphoid patches are often found in the posterior pharyngeal wall, appearing as single or multiple, slightly elevated projections of the mucosa. Their size may vary from a few millimeters up to 1 cm. The color is usually yellowish or grayish. During a cold the lymphoid patches may cause slight irritation but are otherwise asymptomatic.

Enlargement of the lingual tonsils may occur after tonsillectomy, probably because of a compensatory mechanism. In rare instances lingual tonsillitis and even abscess formation may occur (Joseph et al, 1984).

Occasionally, single or multiple lymphoid patches are encountered in the oral cavity, especially in the floor of the mouth (Fig. 72-7). These are sometimes called *oral tonsils* (Buchner and Hansen, 1980). The diagnosis is usually based on clinical judgment. Only in doubtful cases is a biopsy indicated.

A few cases have been described of benign lymphoid hyperplasia of the hard palate, which may simulate malignant non-Hodgkin's lymphoma (Napier and Newlands, 1990).

No specific treatment is usually required.

Mesenchymoma

A mesenchymoma is a controversial lesion that is composed of two or more mesenchymal tissues in addition to the fibrous tissue that is actually always present in mesenchymal growths. Whether a mesenchymoma is a true neoplasm or just a hamartoma is not always clear. However, malignant mesenchymomas have been reported (Glendinning, 1979). Very few oral and oropharyngeal mesenchymomas have been reported (Freedman et al, 1982; Makek and Lello, 1982). The ages of the reported patients range from 2.5 months up to 23 years.

A mesenchymoma is usually a single, well-circumscribed lesion appearing as a submucosal nodule. Of the reported cases a few were located in the base of the tongue.

It consists, as described, of two or more mesenchymal tissues in addition to fibrous tissue. Smooth or striated muscular tissue may be found as well as fat, chondroid, or osseous tissues.

Management consists of simple excision.

Neurogenic Tumors

Although the distinction between a schwannoma (neurilemmoma) and a neurofibroma may be debatable, most authors adhere to the concept that there are indeed two separate entities.

Schwannoma (neurilemmoma)

A schwannoma is a benign neurogenic neoplasm composed of Schwann's cells. In a review from the literature 152 cases of oral schwannomas were collected (Gallo et al, 1977). The tumor may occur at all ages and does not show a preference for men or women.-

A schwannoma is a slowly growing, rather circumscribed, submucosally located tumor that may be painful. No characteristic clinical features appear. It may occur at any site in the oral cavity and rarely involves the oropharynx.

Histologically, one sees an encapsulated tumor composed of two cell types, the so-called Antoni type A and Antoni type B cells. The A cells have elongated nuclei and are often arranged in a palisade pattern, including hyalinized material between them, the so-called Verocay bodies.

Management consists of conservative surgical removal. Recurrences are rare.

Neurofibroma

A neurofibroma is, like a schwannoma, derived from sheath cells. It actually may represent in many instances a hamartoma or a reactive process rather than a neoplasm.

A neurofibroma is asymptomatic and rarely occurs as a single lesion. Most often neurofibromas are part of von Recklinghausen's disease (Fig. 72-8). Quite often the tongue is involved, in some cases resulting in unilateral macroglossia. Also the possibility of hereditary neuropolyendocrine syndrome - consisting of mucosal neuromas, pheochromocytoma of the adrenal glands, and medullary thyroid carcinoma - should be taken into account. In general, the mucosal neuromas in that syndrome are already present at childhood, being the first manifestation of the syndrome (Casino et al, 1981).

In contrast to the schwannoma, a neurofibroma is not encapsulated. Proliferating Schwann's cells are haphazardly arranged, not showing the palisade arrangement of schwannomas.

With a single neurofibroma, management consists of surgical removal. With multiple or massive involvement, surgical removal may be impossible to carry out and is indicated only when malignant changes are suspected. With von Recklinghausen's disease, there is a 5% to 15% risk of malignant degeneration. This seems especially true for deeply located lesions (Maceri and Saxon, 1984).

Traumatic neuroma

A traumatic neuroma is a reactive hyperplasia caused by injury of a nerve.

Traumatic neuromas may occur anywhere in the oral cavity. Occurrence in the oropharynx is exceptional. The lesion usually manifests itself as a small submucosal nodule that may be painful at palpation. No characteristic clinical features appear.

Histologically masses of irregularly arranged nerve fibrous and Schwann's cells are seen to spread diffusely throughout the tissue, mimicking to some extent the picture of a neurofibroma.

Management consists of conservative surgical removal, if possible, followed by coagulation of the adherent nerve. Recurrence is rare.

Papilloma and Allied Lesions

Papilloma

A papilloma is a benign epithelial neoplasm composed of fingerlike projections of squamous epithelium. Some authors use the term *squamous papilloma* (Abbey et al, 1980). The cause is unknown, although a virus is most likely.

The prevalence of oral papillomas is less than 0.1% (Axéll, 1976). Oral and oropharyngeal papillomas may occur as single or multiple, sessile, warty lesions, seldom measuring more than a few millimeters. When they involve the oropharynx, the soft palate and the uvula are the usual sites. The clinical differential diagnosis of a papilloma includes verruca vulgaris (Green et al, 1986), fibroepithelial polyp, focal epithelial hyperplasia, and condyloma acuminatum.

The histology of a papilloma shows fingerlike projections of squamous epithelium above the level of the surrounding mucosa. In most cases a mild hyperorthokeratosis occurs. Epithelial dysplasia is not a feature of papilloma. Carcinomatous changes in a papilloma are exceptional, if indeed ever proven.

Management consists of surgical excision. Recurrences are rare.

Condyloma acuminatum

Condyloma acuminatum is a papillomatous growth that occurs most frequently on anogenital skin and mucosa and is caused by a papilloma virus of the papova group. Condyloma is currently a quite common venereal disease. One probable reason for the very few reports on oral condylomas is that the condylomas have been diagnosed as papillomas, verrucae, or fibroepithelial polyps.

They start as multiple, small, whitish-pink nodules that often proliferate and coalesce to form soft, sessile, or pedunculated papillary growths (Swan et al, 1981). They may occur anywhere in the oral mucosa and in the upper aerodigestive tract (Nash et al, 1987).

The lesions show a hyperplastic epithelium arranged in a papillomatous pattern but without keratinization. There is often spongiosis of the epithelium, which has a benign appearance.

Management consists of surgical removal. Recurrences are rare.

Focal epithelial hyperplasia

Focal epithelial hyperplasia, also called "Heck's disease", is a benign disorder of the oral mucosa. The condition is characterized by multiple, more or less papillomatous lesions, possibly caused by a virus of the papova group. When first reported in 1965, focal epithelial hyperplasia was thought to be an extremely rare entity, occurring exclusively in children of American Indian origin (Archard et al, 1965). It has been shown, however, that focal epithelial hyperplasia occurs worldwide and is certainly not limited to youngsters (Morency et al, 1982).

The lesions measure several millimeters and have a papillomatous or fibroma-like appearance and consistency. They are asymptomatic and may occur everywhere in the oral mucosa. In a study of adults from Sweden, the tongue was the usual location for these lesions (Axéll et al, 1981). A biopsy is usually not required to confirm the diagnosis.

The histologic picture of focal epithelial hyperplasia is more or less pathognomonic. It comprises hyperplastic epithelium without keratosis, and broadening and clubbing of the rete ridges. No dysplasia occurs. In the upper spinous layer of the epithelium, so-called mitosoid cells may be observed. The lamina propria occasionally shows signs of inflammation.

No specific treatment is required.

Verruciform xanthoma

Verruciform xanthoma is a benign lesion of the oral mucosa, histologically characterized by the presence of numerous foam cells in the connective tissue papillae.

The cause is unknown. Some speculate that epithelial cells implanted by trauma or inflammation become necrotic and that the cell membrane lipids are ingested by macrophages that form the characteristic foam cells. Over 100 cases have been reported. No sex predilection exists. The age of the patient is usually above the second decade (Neville, 1986).

A verruciform xanthoma clinically manifests itself as an asymptomatic, slowly growing, somewhat raised, papilloma-like lesion with a normal or somewhat reddish or yellowish color. Crateriform surfaces have also been reported. The lesion may occur anywhere in the oral cavity.

Histologically, the lesion is characterized by a papillomatous surface with elongated rete processes. The more or less pathognomonic feature is the presence of foam cells in the lamina propria.

Management consists of conservative surgical removal. Recurrence is highly unlikely.

Extramedullary Plasmacytoma

Plasmacytoma, also called *plasma cell myeloma* or *multiple myeloma*, is primarily a neoplasm of bone. Extramedullary location without bony involvement may occur in the nasopharynx, nasal cavity, and paranasal sinuses and rarely in the oral cavity and oropharynx. It remains debatable whether such soft tissue plasmacytomas are related to the intrabony lesions.

The oral and oropharyngeal lesions have been described as being reddish, pedunculated, or diffuse, without ulceration or any characteristic features (Kurihara and Hashimoto, 1983). The disease usually involves a single lesion. In a small number of patients, regional metastases may develop.

The histologic picture shows a homogeneous picture of densely packed plasma cells and is indistinguishable from the bony lesion in multiple myeloma.

For localized extramedullary plasmacytomas, surgery seems to be the treatment of choice. Radiotherapy may be considered as well. In general, the prognosis is good unless the lesion proves to be the initial sign of multiple myeloma.

Pyogenic Granuloma

A pyogenic granuloma is a benign, elevated, and capillary-rich lesion occurring on the skin and mucous membranes. When located at the gingiva of pregnant women, the term *pregnancy tumor* may be used. The pyogenic granuloma is thought to be the result of an overreaction to minor trauma rather than to infection. Hormonal changes may be another cause. It has no predilection for sex or age group.

An oral pyogenic granuloma most frequently involves the gingiva. The lower lip and the dorsal surface of the tongue are rather common sites as well. The lesion is usually pedunculated or sessile, and the surface is often ulcerated. The size of the lesion's diameter may vary from 0.5 to 2 cm or more.

Histologically a pyogenic granuloma does not consist of true granulomas. Large numbers of vascular spaces can exist together with numerous inflammatory cells, sometimes rising the question of whether one is dealing primarily with a vascular lesion with secondary signs of inflammation or with an inflammatory condition. Mitotic activity may be abundant and should not be mistaken as a sign of malignancy.

Surgery is the management of choice. With the exception of the gingival lesions, recurrences of a pyogenic granuloma is rare.

Rhabdomyoma

A rhabdomyoma is a benign neoplasm of striated muscle. It is an exceedingly uncommon tumor. The male-female ratio is more than 2 to 1. The mean age of patients with a rhabdomyoma is about 40 years.

Although extracardiac rhabdomyomas show a preference for the head and neck, occurrence in the oral cavity and oropharynx is rare. The floor of the mouth is the most common site. Multifocal appearance is exceptional (Schlosnagle et al, 1983). The clinical presentation is a submucosal swelling without any specific signs or symptoms.

A rhabdomyoma is a well-circumscribed tumor. Based on histopathologic characteristics and gross morphology, two types are recognized: fetal and adult. The adult type is composed of large, round or polygonal cells with a slight granular cytoplasm. The cytoplasm may contain lipid material. Cross striations may be found in just a few cells. The fetal type almost exclusively occurs in the first few years of life. Histologically that type is characterized by immature skeletal muscle in varying stages of developmental and undifferentiated mesenchymal cells. Differentiating a rhabdomyoma from a rhabdomyosarcoma may be difficult.

Management of a rhabdomyoma consists of surgical removal.

Palatine Torus and Mandibular Torus

The palatine torus and mandibular torus are exostoses rather than neoplasms of the palatal and the mandibular bone, respectively; both are rather common. The palatal protuberance is located in the midline of the hard palate, having either a unilobular or multilobular shape (Fig. 72-9). The consistency is bony hard. There are no symptoms. From a clinical point of view a palatine torus may be confused with a firm, indurated neoplasm and vice versa. However, the bony consistency is more or less diagnostic. In rare instances additional radiographic examination is needed for diagnostic support.

The mandibular torus is less common than the palatal exostosis. Usually, this torus is seen bilaterally at the lingual aspect of the bicuspid region.

The histologic picture of a torus shows normal, vital bone without any further characteristics.

Surgery is indicated only in cases of the construction of dental appliances.