LESSON № 5 Oncology. Tumours of maxillofacial area and neck.

Hemangioma

Hemangioma is an abnormal build up of blood vessels in the skin or internal organs.

Causes The classically recognized hemangioma is a visible red skin lesion that may be in the top skin layers (capillary hemangioma), deeper in the skin (cavernous hemangioma), or a mixture of both.

Hemangiomas are usually present at birth, although they may appear within a few months after birth, often beginning at a site that has appeared slightly dusky or differently colored than the surrounding tissue.

Hemangiomas, both deep and superficial, undergo a rapid growth phase in which the volume and size increase rapidly. This phase is followed by a rest phase, in which the hemangioma changes very little, and an involutional phase in which the hemangioma begins to disappear.

During the involutional phase, hemangiomas may disappear completely. Large cavernous hemangiomas distort the skin around them and will ultimately leave visible changes in the skin. A superficial capillary hemangioma may involute completely, leaving no evidence of its past presence.

Hemangiomas may be present anywhere on the body. However, they are most disturbing to parents when they are on the infant's face or head. Hemangiomas of the eyelid may interfere with the development of normal vision and must be treated in the first few months of life. On rare occasions, the size and location of hemangiomas may interfere with breathing, feeding, or other vital functions. These lesions also require early treatment.

Large cavernous hemangiomas may develop secondary infections and ulcerate. Bleeding is common and may be significant following injury to the hemangioma.

Symptoms

- A red to reddish-purple, raised lesion on the skin
- A massive, raised tumor with blood vessels (a possibility)

Exams and Tests Hemangiomas are diagnosed by a physical examination. In the case of deep or mixed lesions, a CT scan or MRI scan may be performed to ensure that deeper structures are not involved.

Occasionally, a hemangioma may be associated with other rare syndromes. Additional studies may be done to determine if any of these syndromes are present.

Treatment Superficial or "strawberry" hemangiomas often are not treated. When they are allowed to disappear on their own, the result is usually normal-appearing skin. In some cases, a laser may be used to eradicate the small vessels.

Cavernous hemangiomas that involve the eyelid and obstruct vision are generally treated with injections of steroids or laser treatments that rapidly reduce the size of the lesions, allowing normal vision to develop. Large cavernous hemangiomas or mixed hemangiomas are treated, when appropriate, with oral steroids and injections of steroids directly into the hemangioma.

Recently, lasers have been used to reduce the bulk of the hemangiomas. Lasers emitting yellow light selectively damage the vessels in the hemangioma without damaging the overlying skin. Some physicians are using a combination of steroid injection and laser therapy together.

Fibroma

Fibromas (or **fibroid tumors** or **fibroids**) are benign tumors that are composed of fibrous or connective tissue. They can grow in all organs, arising from mesenchyme tissue.

The term "fibroblastic" or "fibromatous" is used to describe tumors of the fibrous connective tissue. When the term **fibroma** is used without modifier, it is usually considered benign, with the term fibrosarcoma reserved for malignant tumors.

The term **fibroid** can also refer to tumors of smooth muscle, as in uterine fibroids.

Hard Fibroma

The hard fibroma (fibroma durum) consists of many fibres and few cells, e.g. in skin it is called **dermatofibroma** (fibroma simplex or nodulus cutaneous), might A special form is the keloid, which derives from hyperplastic growth of scars.

Soft Fibroma

The **soft fibroma** (fibroma molle) or fibroma with a shaft (acrochordon, skin tag, fibroma pendulans) consist of many loosely connected cells and less fibroid tissue. It mostly appears at the neck, armpits or groins. The photo shows a soft fibroma of the eyelid.

Other Types of Fibroma

The fibroma cavernosum or **angiofibroma**, consists of many often dilated vessels, it is a vasoactive tumor occurring almost exclusively in adolescent males.

The **cystic fibroma** (fibroma cysticum) has central softening or dilated lymphatic vessels.

The **myxofibroma** (fibroma myxomatodes) is produced by liquefaction of the underlying soft tissue.

The **cemento-ossifying fibroma** is hard and fibrous, most frequently seen in the jaw or mouth, sometimes in connection with a fracture or another type of injury.

Other fibromas: chondromyxoid fibroma, desmoplasmic fibroma, nonossifying fibroma, ossifying fibroma, perifollicular fibroma, pleomorphic fibroma etc.

Treatment Benign fibromas can be removed or left alone. A physician should examine the fibroma and determine whether it may be malignant. If there is any question as to whether it may be cancer-related, it should be removed. This is usually a brief outpatient procedure.

Papilloma

Papilloma refers to a benign epithelial tumor growing exophytically (outwardly projecting) in finger-like fronds. In this context Papilla refers to the projection created by the tumor, not a tumor on an already existing papilla (such as the nipple.)

When used without context, it frequently refers to infections caused by Human papillomavirus. However, there are other conditions that cause papilloma, such as Choroid plexus papilloma (CPP).

Two types of papilloma often associated with HPV are "squamous cell papilloma" and "transitional cell papilloma" (also known as "bladder papilloma".)

Epulis fissuratum

Epulis fissuratum is an oral pathologic condition that appears in the mouth as an overgrowth of fibrous connective tissue. Also referred to less commonly as **inflammatory fibrous hyperplasia**, **denture epulis**, and **denture induced fibrous hyperplasia**, it is associated with the edges of a denture that does not fit well. The word, "epulis", can be used to describe any gingival tumor, but it is widely used in association with this specific condition.

Epulis fissuratum appears as a single or multiple fold of tissue that grown in excess around the alveolar vestibule, which is the area where the gums meet the inner cheek. Usually, the edge of the denture rests in between two of the folds. The excess tissue is firm and fibrous, and ulcerations may be present. The size of the affected tissue varies widely, since almost the entire length of tissue around a denture can be affected. More commonly found in women, it can appear in either the mandible or maxilla (upper jaw) but is more commonly found in the anterior portions of the mouth rather than in the posterior. Fibroepithelial polyps, pedunculated lesions of the palate beneath an upper denture, are associated with this condition.

The appearance of an epulis fissuratum microscopically is an overgrowth of cells from the fibrous connective tissue. The epithelial cells are usually hyperkeratotic and irregular, hyperplastic rete ridges are often seen.

Treatment consists of surgical removal with the fixing of a denture in a process called a "reline" or with making a new denture.

Lipoma

A **lipoma** is a benign tumor composed of fatty tissue. These are the most common form of soft tissue tumor. Lipomas are soft to the touch, usually moveable, and are generally painless. Many lipomas are small (under one centimeter diameter) but can enlarge to sizes greater than six centimeters. Lipomas are commonly found in adults from 40 to 60 years of age, but can also be found in children. Some sources say that malignant transformation can occur while others claim that this has yet to be convincingly documented.

Pleomorphic adenoma

Pleomorphic **adenoma** is a benign neoplastic tumor of the salivary glands. It is the most common type of salivary gland tumor and the most common tumor of the parotid gland. It derives its name from the architectural pleomorphism (variable appearance) seen by light microscopy. It is also known as "Mixed tumor, salivary gland type", which describes its pleomorphic appearance as opposed to its dual origin from epithelial and myoepithelial elements.

Clinical Presentation The tumor is usually solitary and presents as a slow growing, painless, firm single nodular mass. Isolated nodules are generally outgrowths of the main nodule rather than a multinodular presentation. It is usually mobile unless found in the palate and can cause atrophy of the mandibular ramus when located in the parotid gland. When found in the parotid tail, it may present as an eversion of the ear lobe. Though it is classified as a benign tumor, pleomorphic adenomas have the capacity to grow to large proportions and may undergo malignant transformation, to form carcinoma ex pleiomorphic adenoma, a risk that increases with time. Although it is "benign" the tumor is aneuploid, it can recur after resection, it invades normal adjacent tissue and distant metastases have been reported after long (+10 years) time intervals.

Histology Histologically, it is highly variable in appearance, even within individual tumors. Classically it is biphasic and is characterized by an admixture of polygonal epithelial and spindle-shaped myoepithelial elements in a variable background stroma that may be mucoid, myxoid, cartilaginous or hyaline. Epithelial elements may be arranged in duct-like structures, sheets, clumps and/or interlacing strands and consist of polygonal, spindle or stellate-shaped cells (hence

pleiomorphism). Areas of squamous metaplasia and epithelial pearls may be present. The tumor is not enveloped, but it is surrounded by a fibrous pseudocapsule of varying thickness. The tumor extends through normal glandular parenchyma in the form of finger-like pseudopodia, but this is not a sign of malignant transformation.

The tumor often displays characteristic chromosomal translocations between chromosomes #3 and #8. This causes the PLAG gene to be juxtaposed to the gene for Beta-catenin. This activates the catenin pathway and leads to inappropriate cell division.

Diagnosis The diagnosis of salivary gland tumors utilize both histopathological sampling and radiographic studies. Histopathological sampling procedures include fine needle aspiration (FNA) and core needle biopsy (bigger needle comparing to FNA). Both of these procedures can be done in an outpatient setting. Diagnostic imaging techniques for salivary gland tumors include ultrasound, computer tomography (CT) and magnetic resonance imaging (MRI).

Fine needle aspiration biopsy (FNA), operated in experienced hands, can determine whether the tumor is malignant in nature with sensitivity around 90%. FNA can also distinguish primary salivary tumor from metastatic disease.

Core needle biopsy can also be done in outpatient setting. It is more invasive but is more accurate compared to FNA with diagnostic accuracy greater than 97%. Furthermore, core needle biopsy allows more accurate histological typing of the tumor.

In terms of imaging studies, ultrasound can determine and characterize superficial parotid tumors. Certain types of salivary gland tumors have certain sonographic characteristics on ultrasound. Ultrasound is also frequently used to guide FNA or core needle biopsy.

CT allows direct, bilateral visualization of the salivary gland tumor and provides information about overall dimension and tissue invasion. CT is excellent for demonstrating bony invasion. MRI provides superior soft tissue delineation such as perineural invasion when compared to CT only.

Treatment Overall, the mainstay of the treatment for salivary gland tumor is surgical resection. Needle biopsy is highly recommended prior to surgery to confirm the diagnosis. More detailed surgical technique and the support for additional adjuvant radiotherapy depends on whether the tumor is malignant or benign.

Generally, benign tumors of the parotid gland are treated with superficial or total parotidectomy with the latter being the more commonly practiced due to high incidence of recurrence. The facial nerve should be preserved whenever possible. The benign tumors of the submandibular gland is treated by simple excision with preservation of mandibular branch of the trigeminal nerve, the hypoglossal nerve, and the lingual nerve. Similarly, other benign tumors of minor salivary glands are treated similarly.

Malignant salivary tumors usually require wide local resection of the primary tumor. However, if complete resection cannot be achieved, adjuvant radiotherapy should be added to improve local control. This surgical treatment has many sequellae such as cranial nerve damage, Frey's syndrome , cosmetic problems, etc.

Ranula

A **ranula** is a type of mucocele found on the floor of the mouth. swelling of connective tissue consisting of collected mucin from a ruptured salivary gland duct, which is usually caused by local trauma.

The latin *rana* means frog, and a ranula is so named because its appearance is sometimes compared to a frog's underbelly.

Locations The gland that most likely causes a ranula is the sublingual gland. Nonetheless, the submandibular gland and minor salivary glands may be involved.

Appearance An oral ranula is a fluctuant swelling with a bluish translucent color that somewhat resembles the underbelly of a frog Rana. If it is deeper it does not have this bluish appearance. If it is large (2 or more cm.), it may hide the salivary gland and affect the location of the tongue. Most frequently it stems from the sublingual salivary gland, but also from the submandibular gland.

Though normally above the mylohyoid muscle, if a ranula is found deeper in the floor of the mouth, it can appear to have a normal color. A ranula below the mylohyoid muscle is referred to as a "plunging or cervical ranula", and produces swelling of the neck with or without swelling in the floor of the mouth.

Ranulas measure several centimeters in diameter and are usually larger than mucoceles. As a result, when ranulas are present the tongue may be elevated. As with mucoceles, ranulas may be subject to recurrent swelling with occasional rupturing of its contents. When pressed, they may not blanch.

Symptoms Ranulas are usually asymptomatic, although they may change gradually in size, shrinking and swelling, making most ranulas hard to detect. The overlying skin is usually intact. The mass is not fixed and is also not tender. The mass is not connected to the thyroid gland or lymph nodes. The mass may not be well defined. If it gets large enough it may interfere with swallowing, and cervical ranulas may even interfere with breathing. Some pain may be connected with very large ranulas.

Histology Microscopically, ranulas are cystic saliva filled distensions of salivary gland ducts on the floor of the mouth alongside the tongue, and are lined by epithelium. A salivary mucocele, in contrast is not lined by epithelium.

Treatment

Treatment of ranulas could involve either a procedure known as "marsupialization" or more often excision of both the gland and lesion. Ranulas are likely to reoccur if the sublingual gland or other gland causing them is not also removed with the lesion. There is little morbidity or mortality connected with treatment