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Benign Neoplasms of Head and Neck Region in Pediatric Population

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Abstract

Benign neoplasms of head and neck region in pediatrics are very rare. Therefore it is important for general as well as the dentists to have proper knowledge, so that with early diagnosis, timely treatment and careful follow up, the risk of potential malignancy can be reduced and more lesions can be treated before it progresses into malignant.

Keywords: Trauma; Condyle; Pediatric; Mandible; Conservative approach

Fibroma

Fibromas are hyperplasia of oral mucosa in response to trauma or local irrigation [1]. Fibroma is the most common benign neoplasm of the oral cavity. It is also known as irrigational fibroma, traumatic fibroma, or fibro epithelial polyp [2]. Fibromas are usually less than one cm in diameter. Its presumed etiology is trauma to affected mucosa mainly due to parafunctional habit or trauma from sharp object. It is seen most on buccal mucosa along the occlusal line, labial mucosa tongue and gingiva. These lesions are often encapsulated with nodular, hard, smooth surface and do not metastasize. Microscopically it shows keratinized stratified squamous epithelium with short rete pegs and nodular deposition of dense collagen and spindle shaped fibroblasts. Lymph nodes maybe palpable, non-tender and enlarged. These lesions are generally asymptomatic. Complete surgical excision with scalpel is the treatment of choice. Ablation with carbon dioxide and (Er:YAG) lasers can be used [2,3].

Lymphangioma

Lymphangiomas are rare, congenital benign lesions occurring in head, neck and oral cavity. Its incidence is 1.2-2.8 per 1000 newborns [4]. 50% - 70% of these lesions are located in head and neck region; and rarely occurs in oral cavity, of which 50% are noted at birth and 90% develop by age of 2 years (5,6).Anterior triangle of neck is the most common site for lymphangiomas. Intra oral lymphangiomas are seen on dorsum of the tongue (6% cases), followed by palate, buccal mucosa, gingiva, and lips. Most prominent sign is the presence of mass, usually characterized by presence of a soft, compressible, lobulated, and ill-defined mass which is not attached to the skin or movable across deeper tissues. Increased size of lesion leads to difficulty in swallowing, airway obstruction, speech disturbances and maxillofacial deformities. Lymphangioma of tongue is the most common cause of macroglossia in children [4,5]. Lymphangiomas most likely present as development malformations arising from sequestration of lymphatic tissue that do not communicate with rest of the lymphatic channels. They are known to be associated with turner'syndrome, noonan's syndrome, trisomies, cardiac anomalies, fetal hydrops, fetal alcohol syndrome and familial pterygium coli [6]. Pretreatment with OK-432 and followed by surgical removal is the treatment of choice. Total removal of mass is necessary to reduce the risk of recurrence [4].

Lipoblastoma

It is a rare benign mesenchymal tumor of infancy and early childhood. It rarely occurs in head and neck region; and accounts for 30% of adipocytes tumors in children. It is common in boys than girls (3:1). It occurs exclusively in infants and children

below 3 years. Site of origin for these lesions is limbs, followed by trunk, retroperitoneum and the head and neck. Other locations include parotid gland, cheeks, skin, and orbit. It can be either circumscribed (70%) or diffused (30%) and usually presents as painless and progressive growing soft tissue mass which is lobulated. Lobules are composed of mature and immature fat cells in varying degree separated by fibrous septa. Depending on the location, nerve compression and related symptoms may be present. Treatment of choice is total excision with preservation of vital structures. Prognosis is excellent but the recurrence rate is high in incompletely resected tumors [7,8].

Hemangioma

Hemangioma is the most common benign vascular tumors of childhood occurring in head and neck region [9,10]. It is characterized by proliferative growth followed by very slow involutive phase between 1-10 years of age and 60%-70% of these lesions are found in head and neck region .It is common in Caucasian females with female to male ratio 2.4:4.1 [11-13]. These lesions have unknown etiology and manifest as a pale patch which is easily neglected, later it grows rapidly and finally appears as port wine stain like lesion. Most of them appear as bright red exophytic lesions of skin, though deep-seated lesions can cause no discolorations. These lesions are primarily composed of highly proliferative hyperplastic endothelial cells. If the growth rate of proliferative tumors is faster than that of infant's development, then functional and cosmetic problems such as ulcerations, nasal obstruction, vision problems and airway obstruction would appear [14]. Treatment should be conservative except when there is mechanical obstruction of airway, haemorrhage, infection, tissue loss or threatened cardiovascular decompensation [10]. Embolization, surgery, laser, cryotherapy with steroids and antifibrinolytics may be used in selected cases. Prognosis is excellent with 90% resolution by 9 years of age [13].

Squamous Papilloma

They are common benign lesions of the oral mucosa, common in children. They represent as single, multiple, or diffuse lesions involving broad areas of oral mucosa. They are commonly seen in children less than 10 years of age and accounts for 8% of all oral tumors in children. Average size of the lesion is less than 1.0 cm and there is no sex predilection. Common site of occurrence is tongue and soft palate [15-17]. Etiology is unknown, but it has been associated with HPV 6, 11 and trauma. Mode of transmission in children has been reported as ingestion of viral particles of infected cells from birth canal. It may also result from haematogenous spread from a recent infection or reactivation of a latent infection in mother. They are often painless, slow growing lesions with cauliflower appearance and present as a papillary or verrucous exophytic mass [15]. Surgical removal is the treatment of choice and can be performed with electrocautery, laser ablation, and cryosurgery or intra lesional injections of interferon [16].

Juvenile Angiofibroma

It is a rare, benign, highly vascular lesion of the base of the skull. It usually affects males between 9 - 19 years of age and accounts for 0.05% of head and neck tumor. It is common in Indian subcontinent than in the west. It originates in the lateral wall of nasal cavity, close to the superior border of sphenopalatine foramen and is usually rounded, circumscribed, non-capsulated mucosa covered mass. Frequent symptoms are nasal obstruction and epistaxis (brisk or intermittent) with or without rhinorrhea. It invades adjacent structures causing further symptoms such as impaired eustachian tube function, facial deformation, proptosis, and changes in visual acuity. Angiofibroma originating outside the nasopharynx may appear as an intraoral mass in retromolar or buccal space area. Surgery is the treatment of choice and pre-operative embolization can be used to control the bleeding. Radiotherapy is also effective as it shows 80-85% control rates. It is locally invasive, and rate of recurrence is high [18-20].

Pleomorphic Adenoma

Although rare, it is the most common benign tumor of salivary gland in children. It accounts for 60% of all salivary gland neoplasms and is frequently found in major salivary glands (85%) and rarely in minor salivary glands (10-15%). Hard palate and soft palate are the most common site of occurrence [21]. Etiology remains unclear although exposure to radiation and virus infection (SV40) has been reported as a causative role in its development. Painless intra oral swelling is the most common symptom. It is usually mobile, slow growing, firm, nodular, well circumscribed, painless mass and may grow rapidly at times. It causes difficulty in eating and talking [21,22]. Treatment of choice is complete wide excision with good safety margins to prevent recurrence. Most head and neck masses in children are inflammatory in nature and most of these growths in children are benign. These benign growths can be related to infection, inflammation, or swellings. Low rate of benign neoplasms in children indicates that more attention should be paid to the diagnosis for proper management of the condition [22].

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