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Case Report

Intrinsic laryngeal lipoma: a case report

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ABSTRACT

Lipomas are the most common subcutaneous tumors. Intralaryngeal lipoma comprises 0.1% of all benign laryngeal tumors. Slow and insidious growth, for a long time; these may give rise to symptoms due to physical discomfort due to their size and compression on surrounding structures. Lipomas are benign mesenchymal tumors with rare localization in the upper aero-digestive tract. Intralaryngeal lipoma may present with clinical features including; feeling of a lump in the throat, cough and airway obstruction, stridor and dyspnea on exertion or even at rest may be present in more severe cases. We present a case of a 32 years old male patient with the complaint of gradually change of voice and dysphagia and difficulty in breathing on extreme physical activity for 5 months. Total removal of these lesions is important to avoid recurrences, a possibility that has been described in the Literature. The possibility of recurrence after long free-intervals should be borne in mind; thus, an extended period of long-term follow-up is mandatory.

Keywords: Lipoma, Larynx, Flexible fiberoptic endoscopy

INTRODUCTION

Lipomas rarely occur in pediatric age; they are more frequent (50%) between the 4th and 5th decade while 28% occur after 5th decade and 27% between the 3rd and 4th decade of life.[1] Lipomas are the most common mesenchymal tumors. Because of slow and insidious growth, lipomas may remain clinically asymptomatic for a long time; but once a mass has been grown, these may give rise to symptoms due to physical discomfort dur to their size and compression on the surrounding anatomical structures. Laryngeal lipomas represent 1% of all of lipomas but unlike other locations, laryngeal lipoma may cause life threatening problems by obstruction of upper respiratory tract.[2] Lipoma are the most common subcutaneous tumors. They may appear at any age group or body location. Lipomatous tumors in adults are common in the upper trunk, abdomen and shoulders. Rare in first two decades, they manifest at the age where fat cells start to accumulate in the body.[2] Their appearance in the head and neck is relatively uncommon, representing only 13%[3] and less than 115 cases have been reported in the literature.[4] Other unusual sites are parotid gland, pharynx, oral cavity, tonsils, tongue, infratemporal fossa.[3] Because isolated laryngeal lipomas symptoms are uncharacteristic, rare and often have no systemic manifestation, clinical diagnosis is difficult.[5] Intralaryngeal lipoma comprises 0.1% of all benign laryngeal tumors. Most of the laryngeal lipomas are found over epiglottis and aryepiglottic fold as these areas are rich in subepithelial fat.[6]

CASE REPORT

A 32 years old male patient presented to ENT OPD of institute with complaint of gradually change of voice and dysphagia and difficulty in breathing on extreme physical activity for 5 months. On neck examination there was no external swelling was present. Videolaryngoscopic examination revealed a huge, smooth, encapsulated

solitary mass over the left aryepiglottic fold hanging and covering the left-sided false cord, part of inlet of the larynx, and left side of the pyriform sinus. The cords were mobile, and the mass occupied the greater side of the laryngeal inlet. There were no signs of congestion and swelling in the neck or any other part of body (Figure 1).

Due to the site of this lesion, and the compression exerted on the surrounding anatomical structures, it was decided to proceed with surgical management, via an external (trans-cervical) approach, in order to ensure complete removal of tumor. Macroscopically, it was well-defined, light-colored, solitary mass, which was sessile and smooth. Microscopically, it was composed of mature, white adipocytes. Fat cells uniform in shape and size.

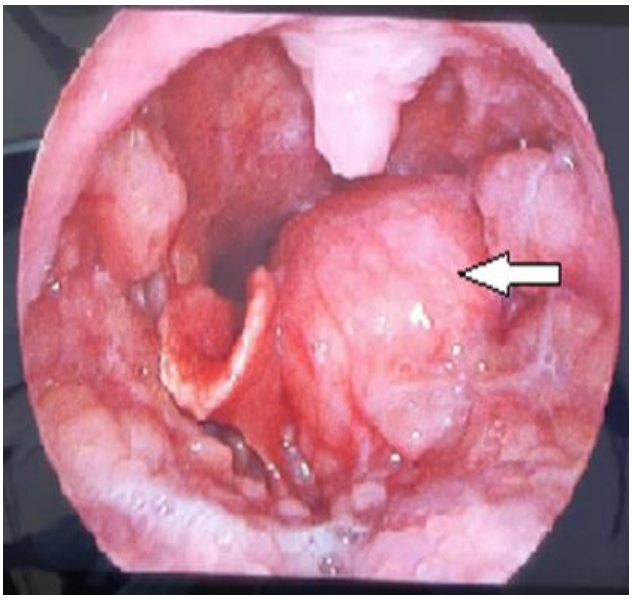

Figure 1: Videolaryngoscopic image; arrow pointed towards lipoma.

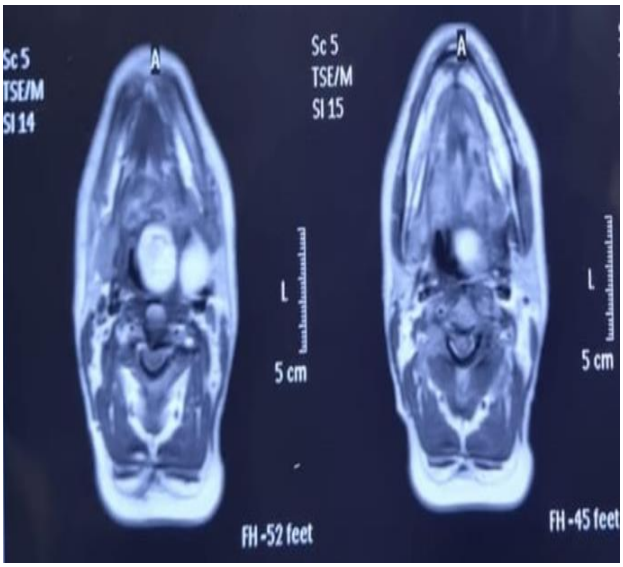

Figure 2: MRI scan T2-weighted, Axial image of same patient.

DISCUSSION

Lipoma is a benign tumor of mesenchymal origin occurring most commonly at trunk and lower and upper limbs where subcutaneous fat tissue found more abundantly while very rare occurrence in the upper aero-digestive tract (larynx and hypopharynx); approximately 0.6% of all benign laryngeal tumors. There male-to-female ratio is 5:1 and they often occur in the sixth decade of life.[7] Laryngeal lipomas appears as pseudo-cystic pedunculated, single and straight surfaced lesions.[8] On contrast enhance computed tomography (CT) scan, adipose tissue visualize as non-enhancing, homogenous low-density areas (ranging within -64 to -123 Hounsfield unit).[9] The differential diagnosis with malignant liposarcoma maybe difficult with the well differentiated form. Clinical features include; feeling of a lump in the throat, cough and airway obstruction, stridor and dyspnea on exertion or even at rest may be present in more severe cases. In the latter case, it is necessary to urgently perform tracheotomy, as in our case, since asphyxia and fatal respiratory arrest episodes occurs due to a pedunculated lipoma flopping into the laryngeal lumen.[10] Pain is unusual and may depend upon the amount of pressure exerted by a large lipomatous tumor on surrounding structures. These tumors are benign and do not metastasize; however, they have higher rates of recurrence and well documented potential for delayed dedifferentiation into higher grade sarcomas (with potential for metastasis).[11] The sarcomatoid degeneration on computed tomography scan manifests as abnormal tumor margins and irregular vascularization.[9] Liposarcoma rarely rise from pre-existing lipomas and mostly arise de-novo, but few cases of malignant changes in lipomas have been described before.[11] True etiology of laryngeal lipoma is not clear but possible theory as multipotential fibroblast cells may differentiate into a fat cell through an unknown mechanism. Recent classification of benign lipomatous tumors includes following categories; classic lipoma; lipoma variants, such as angiolipoma, chondroid lipoma, myolipoma and spindle cell/pleomorphic lipoma, all with specific clinical and histological features; diffuse lipomatous proliferations; hamartomatous lesions, and hibernoma.[12] Lipomas usually present as solitary lesions, but multiple site involvement may be seen in alcoholics, diabetes mellitus and syndromes such as, Gardner's syndrome, neurofibromatosis, Launois-Bensaude's syndrome, Madelung's disease (adiposalgia), Dercum's disease and Kobberling-Dunningan syndrome. Laryngeal lipomas may have extrinsic or intrinsic forms.[8] Extrinsic lesions are located in the posterior aspect of the larynx, lingual surface of the epiglottis and pyriform sinus, while the intrinsic form of laryngeal lipomas found rare. Within the 115 cases laryngeal lipomas reported in literature, only 30 are intrinsic; this occurs in regions where lipomatous tissues form a part of the subepithelial structures, such as in epiglottis, false vocal cords and aryepiglottic folds.[13] lipomas could arise from embryogenic lipoblast cells or metaplastic muscle cells, while others have suggested a

possible aetio-pathogenetic role of familial and endocrine factors, trauma, infections or chronic irritating conditions.

Lipomatous tumor is more frequent in males (62.5%). Histologically, they are partly or totally encapsulated, varying in size and shape or of an infiltrative growth into the surrounding tissues. Laryngeal lipomas may be pedunculated or submucosal. Pedunculated lipomas exert compression on adjacent anatomic structures and may cause airway obstruction while Submucosal lipomas deform the larynx and may cause upper airway obstruction and less phonatory disturbance. Treatment of lipomas is mainly complete surgical excision in order to minimize the recurrence rate. Depending on site, size and extent of the tumor, it can be removed by endoscopic or open surgical approach.[14] Recurrence may be indicative of low-grade sarcoma and should be subjected to further investigation.[15] It is very difficult to differentiate lipoma with other benign laryngeal lesions such as retention cysts or laryngoceles. On evaluation with endoscopic techniques (flexible fiberoptic laryngoscopy, oesophagoscopy), lipoma may have the appearance of submucosal or polypoid mass, sometimes pedunculated. In cases of deeply situated tumors it is necessary for diagnostic purposes to collect several biopsies specimens of which are submitted to histological examination. Pre-operative diagnosis is possible with the use of imaging techniques such as CT and MRI scans. On CT scans, lipoma has the appearance of homogeneous mass with low ionizing radiation attenuation values (0 or negative values of Hounsfield units) and a density lower than that of water and the extension of this tumor is accurately depicted.[16] MRI scan is to be preferred with respect to CT scan since it allows better differentiation of soft tissues, on account of the better definition achieved and patient is not exposed to ionizing radiation and iodine contrast agents are not needed. MRI allows a more accurate and specific diagnosis, also a clearer indication of the origin of the peduncle (high resolution rate in coronal and sagittal scans) of its cranial-caudal extension in para-laryngeal and para-pharyngeal spaces and of its relationship with surrounding cervical structures. Signal intensities in the T1 and T2 weighted sequences are like those of subcutaneous fat tissue thus suggesting that a fatty lesion has been revealed. No enhancement, after the application of Gadolinium-DTPA suggests a benign lesion.[17] Adipose tissue visualize as bright on T1-weighted images and will suppress on fat-saturated sequences.[18]

Surgery is the treatment of choice and includes endoscopic approach or an external surgical approach (cervicotomy). It is very important to completely remove these benign neoplasms in order to avoid their recurrence. There are four main differential diagnoses when evaluating fatty lesions of the larynx: Lipoma, liposarcoma, lipoblastoma, and hibernoma. Hemorrhage and necrosis are suggestive of liposarcoma, while complete fat suppression, lack of septations and no enhancement favors the diagnosis of lipoma. Definitive diagnosis is based on histopathology. Adipocytes of varying sizes as well as macrophages are suggestive of benign lipomas while lack of macrophages and variation of adipocytes suggests liposarcoma over lipoma.[19] Conservative endoscopic procedure is preferred in case of intralaryngeal tumor with small dimensions; while an external surgical approach (via lateral pharyngotomy, laryngofissure, subhyoid pharyngotomy) may be suitable above all for a large tumour (>2 cm in maximum diameter).[17,20] Therefore, the choice of surgical approach is based on several characteristics of the tumor such as site, submucosal growth, size, vascularity, and potential malignancy. Since lipomas can relapse, even after several years, as proven in a review of the Literature, long-term follow-up, for an extended period of time, is mandatory.[20]

CONCLUSION

Lipomas are benign mesenchymal tumors with rare intralaryngeal localization. On account of slow growth rate these tumors may remain clinically undetected for several years; if large in size, they may lead to compression on the surrounding structures and life-threatening symptoms (dyspnea, asphyxia). To consider the possibility of this entity in the differential diagnosis of a submucosal laryngeal mass is the aim of our case report. Total removal of these lesions is important to avoid recurrences, a possibility that has been described in the Literature. The possibility of recurrence after long free-intervals should be borne in mind; thus, an extended period of long-term follow-up is mandatory.

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