

**Original article:**

**Clinical Profile of Non-Malignant submandibular swellings in MMIMSR institute of medical sciences.**

Ginni Datta<sup>1</sup>, Saima Tabassum<sup>2</sup>, L N Garg<sup>3</sup>, Sajid Iqbal<sup>4</sup>

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**Introduction**

Submandibular triangle is an important area in ENT clinical practice, bounded medially by anterior belly of digastric muscle, posteriorly by posterior border of submandibular gland, and mandible superiorly. This triangular space contains submandibular gland, fat tissue, lymph nodes and neurovascular structures such as Facial and Lingual arteries, Anterior Facial vein, Marginal mandibular nerve, Hypoglossal, Lingual and Glossopharyngeal nerve<sup>1</sup>. Patients can present with isolated submandibular swelling arising from any of the containing structures.

The differential diagnoses of a submandibular mass include salivary gland pathologies, lymph node diseases, vascular and neuronal pathologies [PIC1]. The most common submandibular gland pathologies are sialadenitis, sialolithiasis and benign tumors<sup>2</sup>.

**Aim and Objectives**

To find out relative incidence of various benign pathological conditions presenting as submandibular

region swelling with their Clinico-pathological and radiological examination wherever required.

**Review Of Literature**

A literature review aiming to find out the relative frequencies of various clinical entities presenting as submandibular lateral neck swelling with respect to age reveal that Benign swellings are a common cause in children and adolescent, whereas malignancy is common in patients older than 40 years<sup>3</sup> Common Benign submandibular swellings are hyperplastic lymphadenopathy, sialadenitis, sialolithiasis, lipoma etc<sup>4</sup>. Very few reports in the literature have focused on submandibular gland neoplasms as they are rare. Common neoplasms in submandibular glands are Pleomorphic adenoma, adenoid cystic carcinoma, mucoepidermoid carcinoma and malignant mixed tumor (10%).<sup>5</sup> ultrasound helps in localization and characterization of submandibular swellings besides providing excellent tissue images<sup>4</sup>. FNAC is a less invasive, readily available, cost effective, office

1. Ginni Datta, Associate Professor, Department of Otolaryngology- Maharishi Markandeshwer Institute of Medical Sciences and Research, Mullana,(Distt-Ambala),Haryana, India, E-mail : [mksaint9@gmail.com](mailto:mksaint9@gmail.com), mobile no- 9992023667
2. Saima Tabassum, Senior Resident Otolaryngology, Department of ENT- Maharishi Markandeshwer Institute of Medical Sciences and Research, Mullana,(Distt-Ambala), Haryana, India E-mail : [drsaima.sajid786@gmail.com](mailto:drsaima.sajid786@gmail.com), mobile no- 8059931568
3. L N Garg, Associate Professor, Department of Otolaryngology- Maharishi Markandeshwer Institute of Medical Sciences and Research, Mullana, (Distt-Ambala), Haryana, India, Email : [dr.lngarg@gmail.com](mailto:dr.lngarg@gmail.com) , mobile no- 9896320022
4. Sajid Iqbal, Assistant Professor, MBBS, M.S (General Surgery), FMAS. Department of Surgery- Maharishi Markandeshwer Institute of Medical Sciences and Research, Mullana,(Distt-Ambala),Haryana, India E -mail: [drsajid.iqbal82@gmail.com](mailto:drsajid.iqbal82@gmail.com), mobile no- 08059931568 ORCID- <http://orcid.org/0000-0002-2111-5849>

**Correspondence to:** Sajid Iqbal, Assistant Professor, Department of Surgery- Maharishi Markandeshwer Institute of Medical Sciences and Research, Mullana,(Distt-Ambala), Haryana, India.  
E -mail : [drsajid.iqbal82@gmail.com](mailto:drsajid.iqbal82@gmail.com), mobile no- 08059931568

procedure. It can differentiate neoplastic and non neoplastic lesions<sup>3</sup> However the predictive value of FNAC is low<sup>6</sup>, hence Surgical or medical treatment should not be based solely on the FNAC results only. Excision biopsy should augment FNAC results wherever FNA is equivocal<sup>7</sup>.

### Material & methods

Our study was a prospective study comprising 50 patients. All Patients with a clinically palpable swelling in submandibular region were included. Swelling because of abscess formation in submandibular region was excluded. Detailed history was taken followed by general and specific examination. All patients were subjected to ultrasound using a 8-12 MHz linear probe with a facility of real time Colour Flow Doppler technology. Low frequency probe was used in some patients where deeper penetration was required. multi-slice CT was advised where ultrasound was not confirmatory using Somatom plus 4 Volume Zoom (Ms Siemens Ltd) technology. FNAC was advised in chronic cases. Infective swellings were given a conservative trial in the form of Antibiotics, Analgesics and other supportive drugs for 2-4 weeks. Final diagnosis was made by clinical, cytological and radiological examination and their respective Histopathological features wherever applicable.

**Results-** Out of 50 cases, majority patients (n=35) were males. Most patients were in the 4<sup>th</sup> to 5<sup>th</sup> decade of life. Pathology originating from Salivary gland was the most common (n=35) followed by lymph node and lymphatic diseases (n=8). Origin from other sources was 7 cases [FIG1].

Inflammatory causes were most common comprising submandibular sialadenitis (n=30), mumps (n=3) and tubercular lymphadenitis (n=6) [FIG2].

Non inflammatory causes, comprised pleomorphic adenoma (n=5), lymphangioma (n=2). One case each of Masson hemangioma, Hypoglossal Schwannoma, Exophytic thyroid and Sjogrens syndrome was also noted [FIG3].

FNAC was confirmatory in all the cases of sialadenitis, tubercular lymphadenitis, and pleomorphic adenoma and suspicious of schwannoma in one case. Exophytic submandibular thyroid was reported as colloid goiter by FNAC. Schwannoma was confirmed by biopsy.

### Discussion

Owing to their anatomical position, submandibular gland swellings are often mistaken for cervical lymphadenopathy, or can be misdiagnosed as chronic sialadenitis, resulting in diagnostic delay. Careful history taking and examination is essential in diagnosis. Bimanual intraoral and extraoral palpation is important to diagnose tissue of origin. Ultrasonography is the workhorse investigation in diagnosing submandibular gland swellings. Fine needle aspiration, CT, MRI and contrast sialography have a role in specific circumstances. Most submandibular gland swellings are benign. In developing countries, diagnosis of tubercular pathology should always be kept in mind. The epidemiological results in our study are compatible with most previously done studies in developing countries.

**Conclusion-** In this study, the clinical evaluation of submandibular mass were discussed. Inflammatory condition like submandibular sialadenitis were much more frequent than other benign conditions. Some rare pathologies such as Masson hemangioma, Exophytic submandibular thyroid were also found and diagnosed by histopathological examination..

A mass in the submandibular region should be approached by a careful medical history, including thorough physical examination such as bimanual oral palpation and histopathologic evaluation, which are the main procedures in the differential diagnosis. The Ultrasonography should be considered as the first line of noninvasive radiologic diagnostic test. FNAC is usually sufficient diagnostic procedure for histopathologic diagnosis. Excisional biopsy can be performed when the FNAC is failed.

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USG	- Ultrasonography
FNAC	- Fine Needle Aspiration Cytology
FNA	- Fine Needle Aspiration
CT	- Computerised Tomography
MRI	- Magnetic Resonance Imaging
MHz	- Mega Hertz



PIC 1: showing clinical and intra-operative pictures of submandibular region swellings.

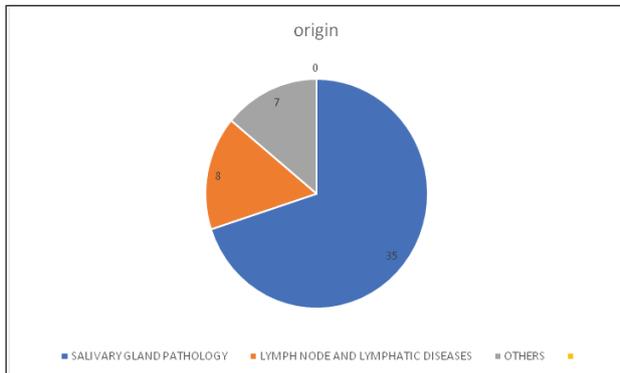


Fig1 showing origin of submandibular swellings

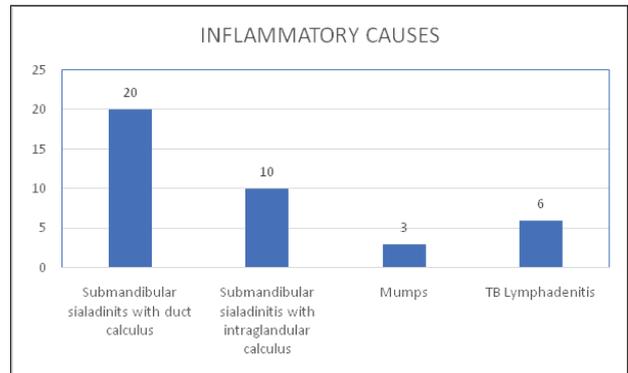


Fig 2 showing inflammatory causes of submandibular swellings

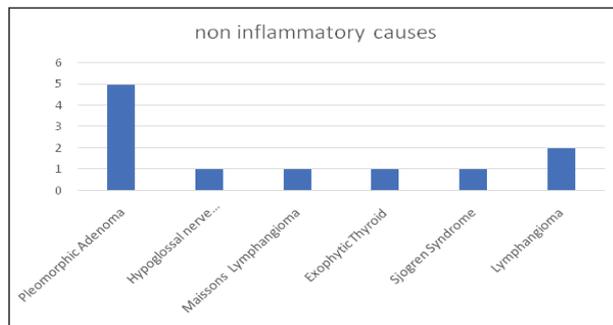


Fig3 showing non inflammatory causes of submandibular swellings

**References:**

1. Robert H, Ivy. Swellings Of The Submaxillary Region. *Ann Surg* 1925;81(3):605-610. <https://doi.org/10.1097/00000658-192503010-00005>
  2. Preuss SF, Klusmann JP, Wittekindt C, Drebber U, Beutner D, Guntinas-Lichius O. Submandibular Gland Excision: 15 Years Of Experience. *J Oral Maxillofac Surg* 2007;65(5):953-7. <https://doi.org/10.1016/j.joms.2006.02.036>
  3. Manjula K., C Prasad, Gayathri B, Harendra Kumar. Cytomorphological study of lateral neck swellings. *Journal Of Clinical And Diagnostic Research* 2011 ;5(5) :1016-19.
  4. Kraus R, Han BK, Babcock DS, Oestreich AE. *AJR Am J Roentgenol.* 1986;146(3):609-13. <https://doi.org/10.2214/ajr.146.3.609>
  5. Hanna E, Lee S, Fan C, Suen J. Benign Neoplasms Of The Salivary Glands. In *Cummings Otolaryngology Head & Neck Surgery*. Philadelphia. Mosby, 2005;1348-77.
  6. Cohen EG, Patel SG, Lin O, Boyle JO, Kraus DH, Singh B, et al. Fine-needle aspiration biopsy of salivary gland lesions in a selected patient population. *Arch Otolaryngol Head Neck Surg.* 2004 ;130(6):773-78. <https://doi.org/10.1001/archotol.130.6.773>
  7. Shaha AR, Webber C, DiMaio T, Jaffe BM. Needle aspiration biopsy in salivary gland lesions. *Am J Surg.* 1990;160(4):373-76. [https://doi.org/10.1016/S0002-9610\(05\)80546-X](https://doi.org/10.1016/S0002-9610(05)80546-X)
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