ORIGINAL RESEARCH PAPER

Otolaryngology

KEY WORDS: submandibular gland surgery, sialadenitis, histopathology.

CLINICOPATHOLOGICAL AUDIT OF SUBMANDIBULAR GLAND SURGERY

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ABSTRACT

Aim:- Aim of this study is to evaluate clinical profile and histopathological findings in patient undergoing submandibular gland excision (due to sialadenitis and primary tumors of submandibular gland benign or malignant). **Method:**-we carried out retrospective analysis of submandibular gland excisions performed in our hospital over five year period and analysed clinical data and postoperative histopathological findings of excised glands. **Results:-** In 43 cases of submandibular gland excision main presenting symptom was swelling of submandibular gland (100%). Patients presented with pain 26 (60%), swelling 43 (100%), recurrent swelling 30 (70%), persistent swelling 13 (30%). On palpation, firm consistency was seen in 42 cases (97.67%) and hard consistency in 1 case (2.3%). Swelling was tender in 20 Cases (46.5%) and non tender in 23 cases (53.4%). Most frequent indication of submandibular gland excision was sialadenitis with sialolithiasis (37 patients, 86%). Neoplastic pathology was present in 6 patients (14%). Benign pathology (4 patients, 9.3%) was more common than malignancy (2 patients, 4.7%). Most common benign tumour was pleomorphic adenoma of submandibular gland. Among the malignant tumour 2 cases were identified in histopathogy, one of adenoid cystic carcinoma and 1 of acinic cell carcinoma of submandibular gland. Overall benign/malignant ratio was 2:1.**Conclusion:-** Inflammatory submandibular gland swelling are mainly enlarged and tender while neolastic swellings are non tender. The most common pathology of the patients undergoing submandibular gland excision was chronic sialadenitis followed by neoplastic Pathology. In neoplastic pathologies benign tumors were more common than malignancy.

INTRODUCTION

Sialadenitis with or without Sialolithiasis is most common cause of submandibular gland swelling.[1,2,3,4,15] Subamandibular gland is normally not palpable..It.is palpated .clinically in enlargement due to any disease like sialadenitis with or .without .sialolithiasis, malignant and benign tumours. Clinically sialadenitis.presents.as enlarged, recurrent and tender .swelling but in some.cases.it may be non tender or persistent .swelling. .Persistent enlargement but no tenderness was invariably noted.with .submandibular.gland tumours.[1,3] Although .primary .neoplasia .of .the .submandibular .gland is.uncommon, there is high incidence of malignancy in persistently enlarged glands. The clinical and radiological investigation can not accurately rule out malignancy so the excision of the persistently enlarged non tender gland is advisable.[5,6,7] 3% of.all .head .and .neck .tumors .are .seen .in salivary .glands. 10 to 15% .of .salivary .gland .tumors .are .seen .in submandibular .gland.[8,9] In submandibular gland most.common .malignant.tumor is adenoid cystic carcinoma. The most.common benign tumor. is pleomorphic adenoma.[10,11] Malignant. tumours of the submandibular .salivary .gland .are .rare, .difficult .to.distinguish clinically from benign disease and. often.only.diagnosed.after.initial excision of .the .enlarged .gland.[12,13,14] The clinical and radiological investigation can not accurately rule out malignancy so the excision of the persistently enlarged non tender gland is advisable.[5,6,7] Submandibular .gland .removal .is .commonly .performed .for .recurrent .obstructive .sialadenitis, .secondary .to .calculus .formation.[1,2,3,4,14] Other .indication .are .benign .and .malignant .tumours .of .gland..

MATERIAL AND METHODS

This is retrospective observational study conducted in department of Otorhinolaryngology, MDM Hospital, Dr. S.N. medical college Jodhpur Rajasthan, India and it includes the cases of submandibular gland swelling who have undergone submandibular gland excision due to inflammatory, neoplastic disease of submandibular gland of all age group and sex between September 2015 to September 2019 (5 year). Patients who underwent submandibular gland excision as a part of neck dissection were excluded from this study. The data regarding above mentioned cases were retrieved from record of patients from department of Otorhinolaryngology, MDM hospital Jodhpur and subjected to clinical and histopathological evaluation. In clinical examination of submandibular gland swelling gross appearance of submandibular gland swelling, tenderness of swelling, consistency of swelling, palpation of stone in gland or duct, margin, edge of swelling, invasion into surrounding structure and mobility was noted along with examination of neck level 1B lymph node status. After clinical and radiological evaluation these patients underwent submandibular gland excision by transcervical approach. After excision the histopathological findings in submandibular gland excision specimen was used as a standard of reference.

RESULTS

In our study 43 cases of submandibular gland excision were carried out. In which 25 were male (58%) and 18 were female (42%). Male to female ratio was 1.38. All patients were operated on unilateral side. The age range was between 10 to 68 year and the mean age of patients was 34.23 year. More of patients were of 30-39 age group.

The main presenting symptom was swelling of submandibular gland (100%). Patients presented with pain 26 (60%), swelling 43 (100%), recurrent swelling 30 (70%), persistent swelling 13 (30%). In neoplastic disease of gland swelling was persistent in all cases (100%). All swellings (100%) were ballotable in bimanual palpation.

Table 1: Showing clinical symptoms of study subjects

CLINICAL SYMPTOMS	PRESENT	PERCENTAGE (%)
Pain	26	60
Recurrent Swelling	30	70
Persistent Swelling	13	30

On palpation, firm consistency was seen in 42 cases (97.67%) and hard consistency in 1 case (2.3%). This

patient had malignancy on histopathology. Inflammatory and benign lesions of gland had smooth margin on palpation while in out of 2 cases (4.7%) of malignancy of gland, 1 case (2.3%) had smooth margin on palpation and 1 case (2.3%) was having irregular margin on palpation.

The surface of swelling was smooth in 42 cases (97.67%) and irregular in 1 case (2.3%). Swelling were freely mobile in 42 cases (97.67%) with no fixity to surrounding skin on palpation. In 1 case (2.3%) swelling was fixed and adherent to surrounding skin on palpation. Swelling was tender in 20 Cases (46.5%) and non tender in 23 cases (53.4%). Out of these 23 non tender cases 17 cases (39.5%) were having sialadenitis. In all cases of tumour of gland, swelling was non tender. Persistently enlarged swelling with no tenderness was in favour of submandibular gland tumour. In cases of sialolithiasis of submandibular gland stone was palpable in 7 Cases (16%).

Level 1B lymphadenopathy was seen in 7 cases out of which 4 (9.3%) had inflammatory pathology and 3 (7%) had neoplastic pathology .Out of these 3 cases, 2 were malignant i.e. 100% of malignant tumors of submandibular gland presented with lymphadenopathy.

Table 2: Showing histopathological diagnosis of excised submandibular glands

HPE Diagnosis	Number	Percentage (%)
Chronic sialadenitis with sialolithiasis	32	74.41
Chronic sialadenitis	5	11.62
Pleomorphic adenoma	4	9.30
Acinic cell carcinoma	1	2.32
Adenoid cystic carcinoma	1	2.32
Total	43	100

Most frequent indication of submandibular gland excision was sialadenitis with sialolithiasis (32 patients, 74.41%). A total of 5 cases (11.62%) of sialadenitis without stone were identified as chronic sialadenitis. Neoplastic pathology was present in 6 patients (14%). Benign pathology (4 patients, 9.3%) was more common than malignancy (2 patients, 4.7%). Most common benign tumour was pleomorphic adenoma of submandibular gland. Among the malignant tumour 2 cases were identified in histopathogy, one of adenoid cystic carcinoma and 1 of acinic cell carcinoma of submandibular gland. Overall benign/malignant ratio was 2:1.

DISCUSSION

The histopathology of excised submandibular glands in our study showed inflammatory pathology in 86% of cases out of which 74% was due to sialolithiasis. Neoplastic pathology was present in 14% of cases in which benign pathology was 9.3% and malignant pathology was present in 4.7% of cases.

Yazici D et al[15] in 2018 found that inflammatory pathology was present in 62% cases and neoplastic pathology was present in 23% of cases in which benign Pathology was present in 15% of cases and malignant pathology at present in 8% of cases. Erbek et al[14] in 2016 observed that non neoplastic pathology was present in 67% of cases and neoplastic pathology was present in 31% of cases of excised submandibular glands. De M et al[3] in 2006 stated that inflammatory pathology in histopathology findings was present in 68% of cases and neoplastic pathology was present in 22% of cases. Yilmaz et al[13] in 2013 saw that inflammatory pathology was present in 48% of cases and neoplastic pathology was present in 46% of cases. Kukuckova B et al[4] in 2011 found that inflammatory pathology was found in 73% cases and neoplastic pathology was found in 26% of cases. WP smith et al[1] in 1993 saw that inflammatory pathology was present in 80% of cases and neoplastic pathology was present in 4% of cases of excised submandibular glands. Milton et al[2] in 1986 observed that inflammatory pathology was present in 83% of cases and neoplastic Pathology as present in 4% of cases of excised submandibular glands.

When all studies were compared, inflammatory pathology was more common in excised submandibular gland then neoplastic pathology. In neoplastic pathologies benign pathology was more common than malignant pathology in all studies. In our study percentage of inflammatory pathology was similar to study of Milton et al2 1986 and WP Smith et al1 1993. In our study incidence of malignancy was similar to the study of Erbek et al[14] 2016.

Table 3: Comparison of histopathological findings in excised submandibular glands in different studies:

	Milton et al[2] 1986	W p smith et al[1] 1993	Kukuckova B et al[4] 2011	Yilmaz et al[13] 2013	De M et al[3] 2006	Erbek et al[14] 2016	Yazici D et al[15] 2018	Our study 2019
Inflammatory:	**83.2%**	**83%**	**73.3%**	**47.77%**	**68%**	**66.7%**	**62.5 %**	**86%**
1.Chronic Sialadenitis with Sialolithiasis	45.6%	83%	39.6%	34.44%		31.1%	57.8 %	74.4 %
2.Chronic sialadenitis	37.6%		33.7%	13.33%		35.6%		11.6 %
Benign: Pleomorphic Adenoma	3.2%	2%	15.1%	31.11%	15%	26.7%	15.6 %	9.30 %
Malignancy:	**0.8%**	**2%**	**11.6%**	**15.55%**	**7%**	**4.4%**	**7.81 %**	**4.70 %**
1.Acinic Cell Carcinoma								2.35 %
2.Adenoid Cystic Carcinoma								2.35 %
Other	3.2%	2%		5.57%	10%	2.2%	14.9 %	0
Normal	9.6%	11%		0	0	0		0

CONCLUSION

Inflammatory submandibular gland swelling are mainly enlarged and tender while neolastic swellings are non tender. The most common pathology of the patients undergoing submandibular gland excision is chronic sialadenitis followed by neoplastic Pathology. In neoplastic pathologies benign tumors are more common than malignancy.

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