ORIGINAL RESEARCH PAPER
Volume - 9 | Issue - 9 | September - 2020 | PRINT ISSN No. 2277 - 8179 | DOI : 10.36106/ijsr
INTERNATIONAL JOURNAL OF SCIENTIFIC RESEARCH

CLINICOPATHOLOGICAL STUDY AND TREATMENT OUTCOME OF PAROTID LESIONS UNDERGOING SUPERFICIAL PAROTIDECTOMY

Otolaryngology

P. M. Hippargekar Professor and head, Department of otolaryngology, SRTR GMC, Ambajogai, Dist- Beed, Maharashtra, India.

Sayali S. Kulkarni* Junior resident, Department of otolaryngology, SRTR GMC, Ambajogai, Dist- Beed, Maharashtra, India. *Corresponding Author

S. V. Bhise Associate Professor, Department of otolaryngology, SRTR GMC, Ambajogai, Beed, Maharashtra, India.

Shankar Kothule Assistant Professor, Department of otolaryngology, SRTR GMC, Ambajogai, Beed, Maharashtra, India.

ABSTRACT

Objectives: To study clinical profile and postoperative complications of parotid lesions undergoing superficial parotidectomy.
Methods: a prospective study was conducted on 46 patients who underwent superficial parotidectomy in the period of 2017 to 2019.
Results: Out of 46 patients, 25 (54%) were males and 21 (46%) females ranging from 16 to 72 years. All had presented with a lump usually painless. 44 (95.65%) lesions were neoplastic (40 benign and 4 malignant) and 2 (4.35%) lesions were non-neoplastic. Most common post-operative complication was transient facial nerve paresis. No permanent facial paralysis observed in benign parotid lesion.
Conclusion: Parotid gland lesions commonly affect relatively young individuals of either gender. Most of the patients present with insidious onset progressive painless lump in parotid region. Pleomorphic adenoma is most common benign parotid tumour while mucoepidermoid carcinoma is most common malignant parotid tumour. Despite the high incidence of postoperative transient facial paresis at the end of 1 week, its magnitude is low and recovery time is short.

KEYWORDS

benign parotid lesions, superficial parotidectomy, facial nerve paralysis

INTRODUCTION:

Salivary gland tumours are rare, accounting for only 3 % of all head and neck tumours. About 75 % tumours are seen in parotid gland, which is the most common site among all salivary gland. Of these, 80% are benign tumours and 80 % of benign tumours are pleomorphic adenomas and 80 % arise from superficial lobe of the parotid gland. The incidence of parotid tumour is 1-3 per 1,00,000 cases per year.[1]

Superficial parotidectomy is routinely being performed by ENT surgeons, general surgeons and maxillofacial surgeons as it falls within the zone of all the three specialties. Primary concern of the surgeon is to identify and preserve the facial nerve trunk and its branches in order to prevent post-operative facial palsy. Other complications that can be encountered after this procedure include hemorrhage, infection, seroma formation, trismus, Frey's syndrome, parotid fistula and anesthesia over the lower half of the pinna and adjoining area of the face.[2]

The aim of our study was to assess clinical profile and treatment outcome of the parotid gland tumours undergoing superficial parotidectomy.

MATERIALS AND METHODS:

This study was a prospective case analysis of 46 patients who underwent superficial parotidectomy performed by authors between 2017 to 2019 in a tertiary care center. Patients attending ENT out-patient department with clinical presentation of swelling over the parotid region were selected. A detailed history and clinical examination performed in each case. The location of the tumour and the diagnosis was confirmed in every case by advising ultrasonography and fine needle aspiration cytology from the parotid swelling. The patients were counselled in detail regarding the need for surgery and the possible post-operative complications. The procedure was planned based on clinical findings, ultrasound scans and fine needle aspiration cytology reports.

On the basis of these investigations, reports suggestive of benign parotid lesions were included in this study. While patients with USG and FNAC suggestive of malignant parotid lesion and involving deep lobe of parotid gland were excluded from this study. All patients underwent superficial parotidectomy according to standard operative protocol using microscope and all specimen were sent for histopathological examination for final confirmation of diagnosis. Facial nerve dissection was always performed with the aid of microscope (Leica F 20 M525). Intraoperative facial nerve monitoring was not used. Patients were assessed on postoperative day 7, 1 month, 3 months and 6 months.

RESULTS:

In this study, the age of the patients ranged from 16 years to 72 years. Maximum number of cases were observed in the age group of 21-30 years i.e. 12 (26%), followed by 41-50 years i.e. 10 (21.73%) and the minimum number of cases were observed in the age group of 71-80 years i.e. 02 (4.34%).

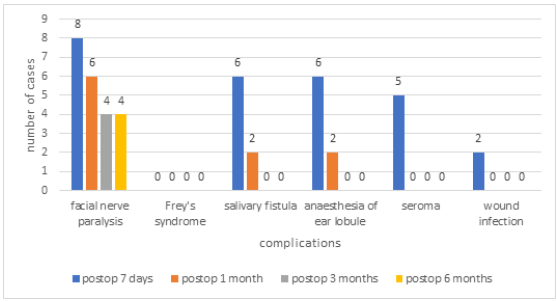
Among the 46 cases studied, 25 cases (54%) were males and 21 cases (46%) were females. The male to female ratio was 1.19:1.

In the present study of 46 cases, 2 cases (4.34%) were of non-neoplastic lesions and 44 cases (95.62%) were reported as neoplastic lesions. 2 non-neoplastic cases (4.34%) were reported as lymphoepithelial cyst on histopathology. Among the benign tumours, maximum number of cases were of pleomorphic adenoma i.e. 37 (80.43%). There were 2 cases (4.34%) of Warthin's tumour and 1 case (2.17%) of basal cell adenoma. Among the malignant tumours, 2 cases (4.43%) were of mucoepidermoid carcinoma, 1 case (2.17%) was of adenoid cystic carcinoma and 1 case (2.17%) was reported as myoepithelial fibroblastic tumour on histopathology.

In this study, out of 46 cases, immediate postoperative complications (postoperative 7 days) were seen as follows: facial paralysis was seen in 8 cases (17.30%) , salivary fistula was diagnosed in 6 cases (13.04%), anaesthesia of ear lobule was seen in 6 cases (13.04%), seroma was seen in 5 cases (10.86%), wound infection was seen in 2 cases (4.34%).

On postoperative 1 month follow up, 6 cases (13.04%) of facial nerve paralysis, 2 cases (4.34%) of salivary fistula and anaesthesia of ear lobule were observed. Out of 8 cases of facial nerve paralysis, 4 cases (8.69%) were labelled as temporary facial nerve paresis as they resolved within postoperative 3 months and remaining 4 cases (8.69%) were turned out to be permanent facial paralysis at postoperative 6 months follow up. These cases were diagnosed as malignant lesions on histopathology.

We did not encounter any case of Frey's syndrome in our study of 46 cases. Salivary fistula, seroma and wound infection were temporary postoperative complications and were not seen beyond postoperative 3 months.



Graph 1: Complications Of Superficial Parotidectomy

Picture 1 And 2 Showing Intraoperative Facial Nerve Dissection

Pictures 3 And 4 Showing Postoperative Facial Nerve Recovery In 1 Month

DISCUSSION:

The present study details the profile of patients with parotid gland lesions.

Age of presentation of parotid gland lesions ranged from 16 years to 72 years. Maximum number of cases were observed in the age group of 21-30 years (26%).

The findings in the present study were comparable with previous study by Sharma et al.[3] and Venkatesh et al[4]. In our study, pleomorphic adenoma was most commonly seen in 2nd and 4th decade. Warthin's tumour was reported in the age group of 71-80 years. Out of 4 malignant cases, 3 cases were seen in the age group of 5th and 6th decade, 1 case was seen in 2nd decade.

The incidence of parotid gland lesions was more in males as compared to females. Male (54%) to female (46%) ratio seen in this study was 1.19:1 which was consistent with the studies of Sharma[3], Venkatesh et al[4], Gudmund S Son JK et al[5]. Some studies[6,7] show female preponderance while others show slight excess in male but sex differences are not significant.

Facial nerve injury is most dreaded complication of parotid surgery. Preservation of facial nerve remains one of the most important and challenging aspect of parotid surgery. Therefore, there is constant endeavour by surgeons to minimize this complication. Facial nerve paralysis was the most common complication after superficial parotidectomy. Out of 46 cases, postoperative facial paresis was seen in 8 cases (17.30%) on postoperative 1 week, 6 cases (13.04%) on postoperative 1 month and 4 cases (4.34%) on postoperative 3rd and 6th months. Facial nerve paralysis after postoperative 6 months was labelled as permanent facial palsy.

Out of 8 cases of facial nerve paralysis, 4 cases were of benign parotid lesions (2 cases of pleomorphic adenoma, 1 case of Warthin's tumour and basal cell adenoma each) and remaining were reported as malignant lesions on HPE.

Facial nerve paralysis seen in benign parotid lesions was transient and resolved within postoperative 1 month in all cases. This transient paralysis was may be due to excessive tissue manipulation or stretching. House-Brackman facial nerve grading system was used to access facial nerve function. Minimal involvement of grade 2 and above in either of the branches was considered as facial nerve paralysis. Most common branch of facial nerve affected was marginal mandibular branch, seen in all 4 cases of transient facial nerve paresis.

Out of 4 malignant parotid lesions, zygomatic branch involvement was seen in one case. Site of the tumour was in superolateral area of superficial lobe. In one case, tumour was adherent to buccal branch. We sacrificed buccal branch in that case. In remaining two cases, tumour was located in inferolateral area of superficial lobe. In both cases, marginal mandibular and buccal branch involvement was seen. These 4 cases were labelled as permanent facial paralysis at postoperative 6 months. 2 cases were improved from HB grade 4 to HB grade 2 within 6 months while no improvement was seen in other 2 cases. These cases were referred to higher centre for further management.

In the study of F Carta et al[8], 145 benign tumours were operated. They observed 4.4% temporary facial weakness rate and no permanent palsy. They had used intraoperative nerve monitoring along with microscope assisted parotidectomy. Another study conducted by Nicoli et al[9] used microscope for dissection of facial nerve. They observed temporary facial nerve paresis in 8.9 % cases and no permanent facial palsy.

In our study, we used microscope for dissection of facial nerve. Temporary paresis was seen in 8.69 % cases while no permanent paralysis was seen in parotidectomy of benign tumours. These results were consistent with F Carta et al[8] and Nicoli et al[9].

Other studies[2,8,9,10,11,12] reported temporary facial nerve paresis in the range of 4 to 30% while permanent facial nerve paralysis was seen in 1 to 8% of cases.

The clinical incidence of Frey's syndrome has been reported in 18-50% of cases. In our series, the diagnosis of Frey's syndrome was based on spontaneous complaint of patient. We did not encounter any case of Frey's syndrome.

The Greater auricular nerve is frequently sacrificed during parotidectomy with consequent hypoanaesthesia of ear lobule. Moretti et al[13]. suggested that saving as many branches of Greater auricular nerve as possible could reduce the hypoanaesthesia. In present study, we reported 13.04% cases of anaesthesia of ear lobule on postoperative 1st week but symptoms were reduced over the period of postoperative 3 months. We preserved posterior branch of greater auricular nerve in most of the cases. Several study reports stated that anaesthesia over ear lobule decreases over time and is not reported as a main postoperative complication by patients.

Other postoperative complications include salivary fistula, seroma and wound infection. In present study, temporary salivary fistula was seen in 13.04 % cases on postoperative 1st week and 4.34 % cases on postoperative 1 month. It was not seen beyond postoperative 1 month in any case. These findings are in line with those of other reported case series.[9,10,11,14] Seroma was seen in 10.86 % cases but it decreased within postoperative 1 week. It could be due to excessive tissue handling during surgery. Wound infection was seen in 4.34% cases in this study. These minor complications were resolved eventually with appropriate treatment.

CONCLUSION:

Parotid gland lesions commonly affect relatively young individuals of either gender. Most of the patients present with insidious onset progressive painless lump in parotid region. Pleomorphic adenoma is most common benign parotid tumour while mucoepidermoid carcinoma is most common malignant parotid tumour. Most dreaded complication of superficial parotidectomy is facial nerve paralysis. Thus, better understanding of distribution of facial nerve branching in parotid gland is essential to avoid the adverse effects resulting due to

facial nerve injury. Despite the high incidence of postoperative transient facial paresis at the end of 1 week, its magnitude is low and recovery time is short. Other minor complications like Frey's syndrome, salivary fistula, anaesthesia of ear lobule, seroma, wound infections are self-limiting, easily manageable with minimal long-term effects and do not interfere with quality of life of patients.

REFERENCES:

1. Obaid MA, Yusuf A. Surgical management of epithelial parotid tumours. J Coll Physicians Surg Pak. 2004;14(7):394-9.
2. Chatterji P, 'A Study of Complications of Superficial Parotidectomy', *Indian Journal of Basic & Applied Medical Research*, 1.2 (2012), 158–64
3. Pritosh Sharma and others, 'Parotid Gland Tumors: Clinical Experience at Tertiary Care Center', *International Journal of Otorhinolaryngology and Head and Neck Surgery*, 5.1 (2018), 14 <https://doi.org/10.18203/issn.2454-5929.ijohns20185138>.
4. S Venkatesh, Teerthanath Srinivas, and S Hariprasad, 'Parotid Gland Tumors: 2-Year Prospective Clinicopathological Study', *Annals of Maxillofacial Surgery*, 9.1 (2019), 103–9 <https://doi.org/10.4103/ams.ams_179_18>.
5. Jens Kristjan Gudmundsson, Aida Ajan, and Jahan Abtahi, 'The Accuracy Of Fine-Needle Cytology for Diagnosis of Parotid Gland Masses : A Clinicopathological Study of 114 Patients', 24.6 (2016), 561–67.
6. Mag A, Cotulbea S, Lupescu S, Stefanescu H, Doros C, Draganescu V, et al. Parotid gland tumors. J Exp Med Surg Res 2010;17:259-63
7. Takahama Junior A, Almeida OP, Kowalski LP. Parotid neoplasms: Analysis of 600 patients attended at a single institution. Braz J Otorhinolaryngol 2009;75:497-501
8. Filippo Carta, 'Parotid Tumours: Clinical and Oncologic Outcomes after Microscope-Assisted Parotidectomy with Intraoperative Nerve Monitoring', *Acta Otorhinolaryngologica Italica*, 37.5 (2017), 375–86 <https://doi.org/10.14639/0392-100X-1089>.
9. Fabio Nicoli and others, 'Microsurgical Dissection of Facial Nerve in Parotidectomy: A Discussion of Techniques and Long-Term Results', Gland Surgery, 6.4 (2017), 308–14 <https://doi.org/10.21037/gs.2017.03.12>.
10. Gang Huang and others, 'Superficial Parotidectomy versus Partial Superficial Parotidectomy in Treating Benign Parotid Tumors', Oncology Letters, 9.2 (2015), 887–90 <https://doi.org/10.3892/ol.2014.2743>.
11. Ashim Kumar Biswas and others, 'Complications of Parotid Surgery – A Study of 30 Cases', Bangladesh Journal of Otorhinolaryngology, 21.1 (2015), 23–27 <https://doi.org/10.3329/bjo.v21i1.24292>.
12. Gunsoy B, Vuralkan E, Sonbay ND, Simsek G, Tokgoz SA, Akin I. Quality of life following surgical treatment of benign parotid disease. Indian J Otolaryngol Head Neck Surg. 2013 Jul;65(Suppl 1):105-11. doi: 10.1007/s12070-012-0585-7. Epub 2012 Oct 30. PubMed PMID: 24427625; PubMed Central PMCID: PMC3718956.
13. Moretti A, Citraro L, Petrucci AG, et al. Great auricu- lar nerve preservation in parotid surgery: rationale and long-term results insights. Eur Arch Otorhinolaryngol 2015;272:3515-20.
14. Jayaram G, Dashini M. Evaluation of fine needle aspiration cytology of salivary glands: an analysis of 141 cases. Malays J Pathol. 2001 Dec;23(2):93-100. PubMed PMID: 12166598.