

Use of Sternocleidomastoid Flap in Parotid Surgeries: Our Experience

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Received on: 12 January 2023; Accepted on: 28 May 2023; Published on: 09 January 2024

ABSTRACT

Salivary gland tumors account for 3% of all head and neck tumors, among which parotid gland tumors account for 80% of all salivary gland neoplasms. Superficial or deep parotidectomy is routinely advised according to the extent of the tumor. Surgery is challenging due to the close relation of the seventh cranial nerve to the parotid gland. Although facial nerve palsy being the most dreaded complication, patients also complain of facial contour deformity. In this study, we have divided the patients who presented with parotid swellings and underwent parotidectomy into two groups with and without the usage of the sternocleidomastoid flap. The sternocleidomastoid flap is an acceptable modality to fill the depressed concave facial contour in parotidectomy patients, which helps in decreasing the incidence of skin necrosis and Frey's syndrome and also helps in a significant degree of patient satisfaction.

Keywords: Parotid swelling, Parotidectomy, Sternocleidomastoid.

Otorhinolaryngology Clinics: An International Journal (2023); 10.5005/jp-journals-10003-1479

INTRODUCTION

Among all the head and neck tumors, salivary gland tumors account for 3%, among which the parotid gland accounts for 80%. Superficial or deep parotidectomy is routinely advised according to the extent of the tumor.

Following the conventional parotidectomy surgery, patients usually complain of varying degrees of cosmetic deformity in the form of visible scar, hollowed-out preauricular defect, and concave facial contour in the infra-auricular and submandibular region near the angle of the mandible.

The sternocleidomastoid muscle receives blood supply from the occipital artery, superior thyroid artery, and transverse cervical artery and can be used either as a superiorly or inferiorly based flap in parotid surgeries.

Sternocleidomastoid flaps also help in decreasing the incidence of Frey's syndrome, flap necrosis, and salivary fistula (Fig. 1).

MATERIALS AND METHODS

We conducted a prospective study in 35 cases who presented with parotid tumors and underwent parotidectomy in our tertiary care hospital. We divided the patients into group A and group B, group A being patients who did not undergo sternocleidomastoid flap surgery and group B who underwent sternocleidomastoid flap surgery. We evaluated the postoperative patient's satisfaction in view of facial deformity. We also compared differences in the postoperative complications like salivary fistula, Frey's syndrome, and flap necrosis.

The surgery was done under general anesthesia with a modified Blair incision, and after removing the parotid gland, the superiorly based sternocleidomastoid flap was taken to fill the defect after parotidectomy to achieve better facial contour. Care was taken to avoid injury to the spinal accessory nerve while taking the flap, and the flap was sutured to the bed of the gland.

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How to cite this article: Trivedi S, Modi N. Use of Sternocleidomastoid Flap in Parotid Surgeries: Our Experience. *Int J Otorhinolaryngol Clin* 2023;15(3):169–170.

Source of support: Nil

Conflict of interest: None

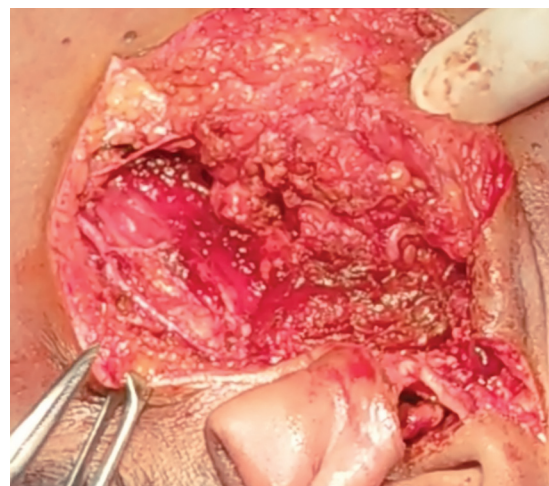


Fig. 1: Defect seen after parotidectomy

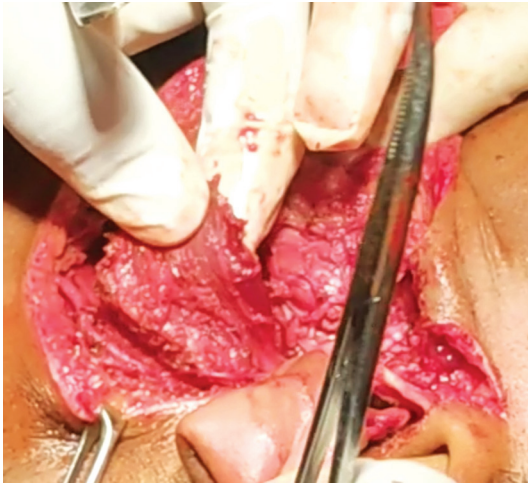


Fig. 2: Sternocleidomastoid muscle flap being rotated in the defect

RESULTS

Among 35 patients who underwent parotidectomy, two patients underwent total parotidectomy, while the rest underwent superficial parotidectomy. Group A included a total of 20 patients in which the sternocleidomastoid flap was not taken and 15 patients in which the sternocleidomastoid muscle flap was taken.

On comparing the results, we found in group A there were two patients with salivary fistula, one patient with Frey's syndrome, two patients with flap necrosis, and five patients had contour deformity at the surgical site, which was cosmetically.

In group B, a total of 15 patients underwent a sternocleidomastoid flap; in our institute, the inferior-based flap was preferred as it could be done in the same incision and could cover the size defect appropriately.

We found that in postoperative follow-up, the patients did not complain of any contour deformity, and also, there was no incidence of Frey's syndrome and salivary fistula in such patients (Fig. 2).

DISCUSSION

The use of sternocleidomastoid flap to cover the defect in parotid surgeries is increasingly becoming common due to its various advantages. In our study, we found that there was less complication in such patients and better esthetic results also.

A study by Casler et al. also showed that the incidence of Frey's syndrome was 47.1% in the control group and 12.5% ($p = 0.025$) in the sternocleidomastoid flap group.¹ A similar conclusion was seen in the study by Nofal et al., and in a study by Kim and Mathog, he also suggested that the flap helped in preventing depressed deformity postoperatively.^{2,3} In a study by Bugis et al., they inferred that the flaps provide soft tissue contour, coverage of facial nerves

and nerve grafts, act as a healthy bed for skin grafts, and help close salivary fistulas.⁴ In a study done by Gooden et al., Hamilton et al., and Chow et al., all suggested that the sternocleidomastoid flap helps in preserving the facial contour of the patients.⁵⁻⁷

CONCLUSION

Parotid surgery, being a surgically challenging procedure due to its close relation to the facial nerve, requires an experienced surgeon, and due to the complications like salivary fistula, Frey's syndrome, and flap necrosis, it is important to use certain surgical techniques that can help in preventing them.^{1,2,8-10} The use of a sternocleidomastoid flap is a simple technique that can help in preventing all of the above.

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