

Short Communication**Complications and recurrence of parotid pleomorphic adenoma after partial parotidectomy at Alzahra hospital**

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Abstract

BACKGROUND: The most common neoplasm of the salivary glands is pleomorphic adenoma and the most common complications of its surgical removal are facial nerve dysfunction (temporary or permanent) and auriculotemporal syndrome (Frey's syndrome). One of the surgical techniques in pleomorphic adenoma is partial parotidectomy. The whole excised tumor is surrounded by a safety margin of parotid tissue. Several surgical techniques are used for this operation. In the analytical studies published for partial parotidectomy, we searched for the complication rates of this operation.

METHODS: In a cross-sectional study, 59 patients with pleomorphic adenoma who underwent partial parotidectomy from 1994 to 2000 were selected and their clinical examinations and pathological files were evaluated at the Alzahra hospital which is affiliated to Isfahan University of Medical Sciences.

RESULTS: From the fifty nine patients, who were studied, 44.06% were male and 55.94% were female. The mean age at the time of the onset of symptoms was 37.18. One of the patients had a history of tumor recurrence. Four patients had temporary facial nerve paresis immediately after the surgery. One patient (1.69%) had a permanent facial nerve paralysis in one of the facial nerve subdivisions. Two patients (3.38%) had Frey's syndrome. In 1 case (1.69%) there was a history of bleeding after the surgery. Two patients (3.38%) had wound infection.

CONCLUSIONS: In comparison with the superficial parotidectomy technique, the partial parotidectomy method indicates more satisfying results in regards to recurrence and complications.

KEY WORDS: Frey's syndrome, partial parotidectomy, complications, pleomorphic adenoma, mixed tumor, auriculotemporal syndrome.

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Salivary gland tumors have a relatively slow prevalence and involve only 3-4% of the head and neck neoplasms. Salivary gland tumors are recognized both diagnostically and therapeutically. Over half of them are benign and 80% are found in the parotid gland¹. Pleomorphic adenoma constituted 84% of benign tumors and 45% of all salivary gland neoplasms². The most common manifestation of this tumor is a painless mass in the salivary gland especially the parotid gland³.

This tumor originates from the epithelial and myoepithelial cells of the salivary ducts and stroma. Its prevalence is in the 5th decade of life and it is more common in women¹. This tumor originates from the superficial parotid lobe in 90% of patients¹. Although fine-needle aspiration, CT scan or MRI are the first steps of its diagnosis, the definitive diagnosis is obtained by excisional biopsy^{1,3,4}. The current treatment of the tumor has been the superficial

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parotidectomy with the facial nerve preservation^{1,4}. Pleomorphic adenoma recurs postoperatively in 1% to 5% of the cases^{1,4} probably due to the tumor capsule rupture during the operation or the existence of pseudopods¹. To lower the risk of the complications, the researchers have offered some approaches for the removal of the tumor. One suggested method is capsule enucleation which prevents about 80% recurrences that are in relation with the pseudopods⁴. The risk of malignant transformation in pleomorphic adenoma is 1.5% within the first 5 years of diagnosis, but it increases to 10% if observed for more than 15 years⁵. The most important complication of parotidectomy is the facial nerve paralysis^{1,6}.

Recently, partial parotidectomy (excision of the tumor and surrounded normal tissue) has been introduced as a probable substitution and even a newer current surgical method for the prevention of facial nerve injury and postoperative recurrence⁷. This method decreases the manipulation of parotid gland and the rate of the sweating when eating (Frey's syndrome). Partial parotidectomy is the best option for the primary treatment of pleomorphic adenoma. The authors conducted a research to analyze the recurrence and complications of partial parotidectomy and to assess such a possibility.

Methods

In a cross-sectional study 59 patients with pleomorphic adenoma who underwent partial parotidectomy between 1994 to 2000 were selected and their files underwent clinical and pathological examinations at the Alzahra hospital, affiliated to Isfahan University of Medical Sciences. At the end, the files of 59 patients were studied and all of them were interviewed. The existence of a mass in the parotid gland was deemed as recurrence. Facial nerve paralysis, Frey's syndrome and operation site infection were recorded by direct questioning. Postoperative hematoma history was also recorded from the files and data were then analyzed.

Results

From 59 patients in this study, 55.9% were female and 44.1% were male. The average of males age was 36.7 ± 9.97 and the mean age for the females was 40.39 ± 11.55 . The average time of the patients' follow-up was 92.7 ± 20.2 months (from 20 months to 12 years) and the patients average hospitalization time was 3.2 days (2-5 days). One patient had recurrence (1.69%). The interval from operation to diagnosis of recurrence was 8 months (6-12 months). In the files of four patients, facial nerve paresis was recorded. In the examination of 1 patient, permanent facial nerve paralysis was observed. We found the signs of the Frey's syndrome in 2 patients. In 1 case (1.69 %) postoperative hemorrhage occurred which was controlled by emergent surgery and 2 patients (3.38%) had wound infection.

Discussion

In this research the frequency of pleomorphic adenoma was higher in women while in previous researches¹ male to female ratio was shown to be 1.3:1. The disease occurrence average age was in the 4th decade of patient's lives. In previous researches the 5th decade has been considered as the most frequent period of the tumor occurrence¹. The mean age difference between the male and female patients at the time of operation was studied by the t test and no significant difference was shown. The average time of tumor signs existence was about 20 months which could be due to the carelessness of the patient and his/her family, inappropriate diagnosis or incorrect treatment. In this research there was 1 case of tumor recurrence (1.69%) 8 months after the first operation. In other researches, the average number of tumor recurrence after partial parotidectomy was reported between 0 to 2.85%^{6,8}. In a study by Lea, the mean interval between operation and recurrence was 5 years⁶. More samples are required for more investigation on the effects of the sex on the recurrence.

The prevalence of Frey's syndrome was 8%⁸ in one research and at 1%⁷ in another study. In this research 2 patients (3.38%) mentioned the

signs of this syndrome. Frey's syndrome occurrence with a low prevalence is perhaps related to the operation method. In partial parotidectomy the dermal flap of the tumor is raised up to its anterior surface and therefore, less nerve regeneration occurs. In one case postoperative hemorrhage led to urgent surgery. Temporary paresis of the facial nerve branches occurred in 3 patients (5.08%). One patient (1.69%) had severe permanent paralysis because of less operative field and less

manipulation. In a study by Mehle et al ⁹, immediate post-operative facial nerve dysfunction was frequently encountered (46%) but persistent dysfunction was uncommon (4%).

Conclusions

As compared with similar results in superficial parotidectomy, partial parotidectomy displays better results regarding tumor recurrence and postoperative complications.

References

1. Hanna EY, Lee S, Fan CY, Suen JY. Benign neoplasms of the salivary glands. In: Cummings C, Haughey B, Thomas R, Harker L, Robbins T, Schuller D et al., editors. Cummings Otolaryngology: Head and Neck Surgery Review. Mosby; 2005. p. 1348-1377.
2. Spiro RH. **Salivary neoplasms: overview of a 35-year experience with 2,807 patients.** *Head Neck Surg* 1986; 8(3):177-184.
3. Heller KS, Dubner S, Chess Q, Attie JN. **Value of fine needle aspiration biopsy of salivary gland masses in clinical decision-making.** *Am J Surg* 1992; 164(6):667-670.
4. Rodriguez-Bigas MA, Sako K, Razack MS, Shedd DP, Bakamjian VY. **Benign parotid tumors: a 24-year experience.** *J Surg Oncol* 1991; 46(3):159-161.
5. Seifert G. **Histopathology of malignant salivary gland tumours.** *Eur J Cancer B Oral Oncol* 1992; 28B(1):49-56.
6. Rea JL. **Partial parotidectomies: morbidity and benign tumor recurrence rates in a series of 94 cases.** *Laryngoscope* 2000; 110(6):924-927.
7. Malatskey S, Rabinovich I, Fradis M, Peled M. **Frey syndrome--delayed clinical onset: a case report.** *Oral Surg Oral Med Oral Pathol Oral Radiol Endod* 2002; 94(3):338-340.
8. Witt RL. **Facial nerve function after partial superficial parotidectomy: An 11-year review (1987-1997).** *Otolaryngol Head Neck Surg* 1999; 121(3):210-213.
9. Mehle ME, Kraus DH, Wood BG, Benninger MS, Eliachar I, Levine HL et al. **Facial nerve morbidity following parotid surgery for benign disease: the Cleveland Clinic Foundation experience.** *Laryngoscope* 1993; 103(4 Pt 1): 386-388.