

## Benign Parotid Lesions: Is Near Total Parotidectomy Justified?

AR Arshad,<sup>1</sup>MBBS, FRCS (Edin), FRCS (Glas)

### Abstract

**Introduction:** Benign tumours of the parotid gland constitute about 80% of parotid tumours. The most common benign tumour of the parotid gland is pleomorphic adenoma. Other conditions, like Kimura's disease, may mimic a tumour when they present as a parotid mass. Various modes of treatment have been advocated for the treatment of benign parotid lesions, ranging from enucleation to near-total parotidectomy. **Material and Methods:** This is an audit of an 18-year period where 173 lesions of the parotid gland (34 malignant and 139 benign lesions) were treated by the author. **Results:** There were 139 benign lesions, of which 123 were benign tumours and 16 non-tumour conditions. Fourteen cases of recurrent pleomorphic adenoma of parotid that had been treated elsewhere were also operated on. Near-total parotidectomy was performed on all these cases with benign lesions. **Conclusions:** There has been no recurrence in all the patients who was treated this way. Near-total parotidectomy should be considered when there is a need to treat benign parotid swellings.

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**Key words:** Kimura's disease, Pleomorphic adenoma

### Introduction

Benign lesions of the parotid gland constitute about 80% of parotid tumours.<sup>1-5</sup> They include various lesions (Table 1), the commonest being pleomorphic adenoma, followed by adenolymphoma. Various modes of treatment have been advocated for benign parotid tumours ranging from enucleation to near-total parotidectomy.<sup>6-8</sup> Benign tumours of the parotid gland are not difficult to treat surgically if they are correctly treated from the beginning. Problems will be seen when there are recurrences. When the plane where the facial nerve lies has not been infringed, secondary surgery may not be too difficult. Difficulties arise when recurrences occur and the facial nerve trunk or its division lies in very close proximity to this recurrence. This is a report of the author's experience in treating 139 patients with benign parotid lesions at the Department of Plastic Surgery, Hospital Kuala Lumpur, Malaysia.

### Materials and Methods

Between January 1985 and December 2002, the author treated 173 patients with parotid lesions. A retrospective review of a prospectively maintained protocol was carried out, whereby patients' casenotes were evaluated and

reviewed. The data collected included information on age, race, sex, symptoms of swelling, pain, previous surgery, diagnosis, surgical treatment, complications and repeated operations and follow-up period. The patients were seen regularly, three-monthly in the first 2 years, six-monthly from the third year onwards until the tenth year, when they were seen yearly.

### Surgical Treatments

Surgical treatments were done under hypotensive anaesthesia and local infiltration of 10 mL, marcaine 0.5% and 1:200,000 adrenaline. Each operation started as superficial parotidectomy for all cases of benign tumours. This was then extended to deep-lobe parotidectomy even if it was not involved with tumour. The technique is essentially the same as described by this author previously.<sup>9</sup>

The gland was approached through a "face-lift" incision. The critical point of the surgery was the localisation and preservation of the facial nerve. Many different techniques have been used to identify the trunk of the facial nerve. The author used the posterior belly of digastric muscle as a reliable landmark. As the superior margin of the posterior belly of digastric was traced upward, the trunk of the facial

<sup>1</sup> Department of Plastic Surgery  
Hospital Kuala Lumpur, Malaysia

Address for Reprints: Dr Ahmad Ridzwan Arshad, Department of Plastic Surgery, Hospital Kuala Lumpur, Jalan Pahang, 50586 Kuala Lumpur, Malaysia.  
Email: arapr@hkl.gov.my

nerve could be identified near its insertion to the mastoid process. It is always about the size of a match stick, and glistening white in colour. The superficial lobe was then dissected from the trunk, division and branches of the facial nerve. The author proceeded to remove as much parotid tissue as possible, including the deep lobe, even for a biopsy-proven benign lesion. No attempt was made to specifically look for the parotid duct but it was ligated if it happened to be identified.

A large suction drain was left for 5 days to make sure the skin flap was completely adherent to the parotid bed. This is a very important precaution, especially if there is still some remnant parotid tissue. All patients were given intravenous cloxacillin and metronidazole postoperatively.

## Results

Over an 18-year period, the author treated 173 parotid enlargements. The follow-up period was between 3 and 18 years. One hundred and thirty-nine were benign lesions (80% of parotid swellings) – 123 were benign neoplastic lesions and 16 were non-neoplastic. The most common benign neoplastic lesions were pleomorphic adenoma, followed by adenolymphoma. The most common non-neoplastic lesion was Kimura's disease or eosinophilic hyperplastic lymphogranuloma.<sup>10</sup> Fourteen patients presented with recurrent pleomorphic adenoma that was operated on elsewhere. No information was available as to the techniques used in these cases. The histologies of these recurrent benign parotid tumours were pleomorphic adenoma.

The male-to-female ratio was 84:89, with an age range of 5 to 83 years. Because a benign parotid tumour usually presents as a painless swelling, patients may only come to the hospital after a long history of this swelling. Two patients had deep-lobe pleomorphic adenoma, and they presented as a diffuse parotid swelling. The classification of these benign tumours is as shown in Table 1. The size of these lumps ranged between 1 and 10 cm.

Near-total parotidectomy was performed on all these patients by the author. The operation was done using loupes (3.5x magnification). Every branch of the facial nerve was identified until its distal terminal branch and preserved. There was no case where the adenoma capsule was accidentally ruptured.

The patients were regularly followed and there were no cases of tumour recurrence.

## Complications

There was no case where the facial nerve could not be found. Where the surgeon had trouble identifying the facial nerve trunk because the adenoma was too large, he proceeded to look for the distal branches and trace it

Table 1. Benign Parotid Tumours

	No. of patients (123 of 178)	%
Pleomorphic adenoma	96	78
Adenolymphoma	15	12
Benign lymphoepithelial cyst	4	2.8
Oncocytoma	2	1.4
Haemangioma	2	1.4
Schwannoma	1	0.7
Acinic cell adenoma	1	0.7
Tubular adenoma	1	0.7
Epidermoid cyst	2	1.4
Neurolemmoma	1	0.7
Monomorphic adenoma	1	0.7
Masson's tumour	1	0.7

retrogradely. This occurred in 3 cases. Almost all patients had mild degrees of facial nerve weakness, the most common being weakness of the mandibular branch. At 1-year follow-up, it was noted that they all had made complete recovery. There was no wound infection in all these cases. Blood loss was minimal and there was no need for blood transfusion. Haematoma occurred in 1 patient and had to be evacuated. The wound healed with just dressings. Although the facial nerve weakness in this case was slow to recover, it had completely recovered at 1 year. There was no incidence of sialocele or salivary fistula, and this may have been due to the author's conservative approach of leaving a large suction drain under the skin flap for 5 days postoperatively. Two patients showed symptoms of gustatory sweating. Two patients experienced the highly unpleasant complication of great auricular nerve neuroma. The neuroma had to be surgically explored, its end divided and the remnant great auricular nerve buried in the belly of the sternomastoid.

## Discussion

Salivary gland tumours account for 3% of all tumours in the head and neck. Approximately 75% to 85% of these neoplasm occur in the parotid gland of which 70% to 80% are benign.<sup>1-5</sup> The aim of treatment for benign parotid tumours is the complete eradication of the tumour. The 2 most common complications that may arise from an incompletely excised pleomorphic adenoma are recurrences and malignant change. The treatment of benign parotid lesions has been very confusing and a subject of much debate. It has been described in the literature as ranging from enucleation followed by radiotherapy to superficial parotidectomy.<sup>6-8,11-13</sup> This rather "defensive" approach to the surgery of benign parotid lesion was due to the fear of damage to the facial nerve.<sup>11</sup> It is now generally accepted that there is no place for enucleation in the treatment of

pleomorphic adenoma. However, a recent review of clinical practice in the United Kingdom revealed that local excision of such tumours is still commonly performed.<sup>12,13</sup> Superficial parotidectomy therefore seems to be the accepted mode of surgical treatment for benign parotid lesion even though there is an acceptable recurrence rate.

For purposes of this discussion, superficial parotidectomy is defined as the removal of the superficial lobe of the parotid gland. Total parotidectomy is the total removal of parotid tissue, yet sparing the facial nerve. Radical parotidectomy, which is reserved for the treatment of malignant parotid tumours, is the removal of the parotid gland with its facial nerve, and this is usually accompanied by a replacement of this nerve by a nerve graft. Near-total parotidectomy as performed by the author is defined as the removal of almost all parotid tissues including that of the deep lobe but knowing that the lesion treated is benign, no extra time is spent removing any remaining parotid tissue. "Radical surgery" in this context means surgery on the parotid gland that extends beyond superficial parotidectomy, yet leaving behind the facial nerve.

Presently, parotidectomy is still being performed by surgeons unfamiliar with microsurgical techniques and loupes magnification, which is a big help in performing parotidectomy. The author performed near-total parotidectomy in every patient who presented with a benign parotid lesion. With the help of 3.5 loupe magnification, it was quite easy to remove nearly all parotid tissue. Fine needle aspiration cytology (FNAC) is a very helpful investigation prior to surgery. A problem lies in interpreting the cytology. Although Eneroth<sup>14</sup> reported an accuracy rate of 92%, we only had a positive correlation in 73%. Debets and Munting<sup>15</sup> reported their accuracy rate of FNAC as 74%. We therefore acted on the positive results and use clinical judgement to make decisions with regards to the rest.

On follow-up, there were no cases of recurrence in all patients treated primarily as well as those who came for treatment for recurrences using this approach of near-total parotidectomy. Two patients showed symptoms of Frey's syndrome. Fifteen patients described symptoms similar to Frey's syndrome on direct questioning, but they did not seem to be bothered by it. Patients may complain of a depression that is seen over areas where the parotid gland has been removed. In our series, they did not seem to be bothered by this. Chow et al<sup>16</sup> recommended transposition of upper end of the sternomastoid muscle into this defect to improve the cosmetic appearance after parotidectomy. It is hard to predict the long-term results of this innovation, because the transposed muscle may atrophy with time. None of the patients in this study had permanent facial nerve paralysis. We can therefore conclude that as long as

the nerve is not divided, total recovery can be expected. This approach is also useful where the lesion removed may not be benign, especially where FNAC results are inconclusive. Where the lesion is of low-grade malignancy, like acinic cell carcinoma or mucoepidermoid carcinoma, the surgical treatment has already been performed, they may only need to be given radiotherapy.

In conclusion, near-total parotidectomy should be considered when treating a benign parotid lesion because any excess parotid tissue from the deep lobe that are not removed may cause recurrences. There is also justification in performing this operation when the FNAC results are inconclusive. Morbidity associated with this operation, like depression over the parotid bed, did not seem to bother these patients. As long as the facial nerve trunk, division or branches are not divided, paresis is only temporary and complete recovery can be expected.

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