



# Endoscopic Nasopharyngectomy for Recurrent NPC

Tay Ze Yun, MD<sup>1</sup>; Tay Hin Ngan, MD<sup>1,2</sup>; Christopher Goh Hood Keng, MD<sup>1,3</sup>; Constance Teo Ee Hoon, MD<sup>1</sup>

1. Department of Otolaryngology (Ear, Nose & Throat Surgery), Singapore General Hospital
2. HN Tay ENT Head & Neck Thyroid Sleep Robotic Surgery, Mount Elizabeth Medical Centre, Singapore
3. Novena ENT – Head & Neck Surgery Specialist Centre, Mount Elizabeth Novena Specialist Centre, Singapore

## ABSTRACT

### Outcome objective

To report the surgical and survival outcomes of patients with recurrent nasopharyngeal carcinoma (NPC) who underwent endoscopic nasopharyngectomy with curative intent.

### Methods

A retrospective study of patients who underwent endoscopic nasopharyngectomy for recurrent NPC from Jan 2008 to Dec 2012 in a tertiary centre in Singapore was undertaken. Patients were analysed for occurrence of surgical complications and survival outcomes.

### Results

18 patients underwent endoscopic nasopharyngectomy for recurrent NPC during the study period. Only 15 patients were included in the analysis as the other 3 patients were lost to follow up. Of the included subjects, the number of patients with rT1N0, rT1N1 and rT1N2 disease was 13, 1 and 1 respectively. Following diagnosis of recurrence, these patients underwent endoscopic nasopharyngectomy with or without neck dissection by one of three surgeons. Mean age at surgery was 55 years and the average follow up duration was 42.8 months (range 24 to 79). Of the patients who underwent endoscopic nasopharyngectomy as the sole procedure (13 patients), the mean operation time was 275 minutes with a mean hospitalisation stay of 4.6 days. No major surgical complication was encountered. The 2 year overall and disease-free survival rates are 93.3% and 86.7 % respectively.

### Conclusion

Early recognition of recurrent NPC with locally limited disease allows the surgical management of these patients with curative intent. With appropriate selection of patients, endoscopic nasopharyngectomy has been shown to be an efficacious surgical modality in the management of patients with locally-recurrent NPC with favourable surgical and survival outcomes.

## CONTACT

Tay Ze Yun, MD  
Department of Otolaryngology, Singapore  
General Hospital  
zeyun.tay@mohh.com.sg

## INTRODUCTION

Nasopharyngeal carcinoma (NPC) is a distinct epithelial malignancy that occurs within the nasopharynx, showing a varying degree of squamous differentiation. The disease epidemiology is unique in that it has a specific ethnic and geographical distribution, with high prevalence in South- China and Southeast Asia, but generally rare in Caucasian populations. In Singapore, its incidence amongst the male population is 8.1 per 100,000 per year<sup>1</sup>.

Being a highly radiosensitive tumor, the primary treatment of NPC is radiation with or without concurrent chemotherapy. With advances in radiotherapy techniques such as intensity modulated radiation therapy (IMRT) and refinement of chemoradiation strategies over the years, improved survival outcomes have been achieved, with the 5 year overall survival rates of up to 84%<sup>2</sup>. Despite these advances, 10% to 30% of patients still develop local failure following primary treatment<sup>3</sup>. With early detection of local failure, salvage treatment with either re-irradiation or surgery is possible, and can improve overall survival especially for those patients with early stage residual or recurrent disease. With re-irradiation, the cumulative dose of radiation often result in significant long term morbidity such as osteoradionecrosis, temporal lobe necrosis, cranial nerve palsies or visual and hearing impairment. Hence, surgery may actually be preferred for selected patients and can result in reduced long term morbidity.

The traditional nasopharyngectomy is performed via various open approaches depending on the site and extent of disease. These include facial translocation, maxillary swing, transpalatal or infratemporal fossa approaches. With the advances of endoscopic technology and refinement of minimally invasive techniques, endoscopic nasopharyngectomy has been increasingly performed for patients with local recurrent or residual disease with good results reported.

## METHODS

A retrospective review of patients who underwent endoscopic nasopharyngectomy for recurrent NPC between Jan 2008 and Dec 2012 at our institution were carried out. All cases were performed by one of three attending head and neck surgeons in the department.

Fifteen out of 18 patients who underwent the procedure during the study period were included in the review as the other 3 patients were lost to follow up. Patient demographics, stage of recurrent disease, operative details, post-operative complications and survival outcomes were analysed. Of the 15 included cases, there were 13, 1 and 1 cases of T1N0M0, T1N1M0 and T1N2M0 disease respectively. The surgical technique employed in all the cases was similar, with utilization of intra-operative frozen section to determine resection margins.. Four patients also underwent reconstruction with nasoseptal flap at the same setting.

## RESULTS

Table 1

No of patients	15
Mean age (year)	55 ( 42 - 69 )
Gender	11 male : 4 female
Stage ( n = no of patients)	rT1N0 (13) : rT1N1 (1) : rT1N2 (1)
Mean operation time (min) *	275 ( 125-635 )
Mean hospitalization duration (days) *	4.6 ( 2-6 )
Mean follow up (months)	42.8 ( 24 - 79)
Post-op complications (n = no of patients)	Minor epistaxis ( 3 ) Skull base osteomyelitis ( 3 ) Atlanto – axial instability ( 2 )
Recurrence	1 patient (detected at 43 months post-op)
Mortality	1 patient (occurred at 23 months post-op)

\* 2 patients who underwent neck dissection were excluded



Fig 1. Patient with rT1 tumor recurrence of right Foramen of Rosenmuller.

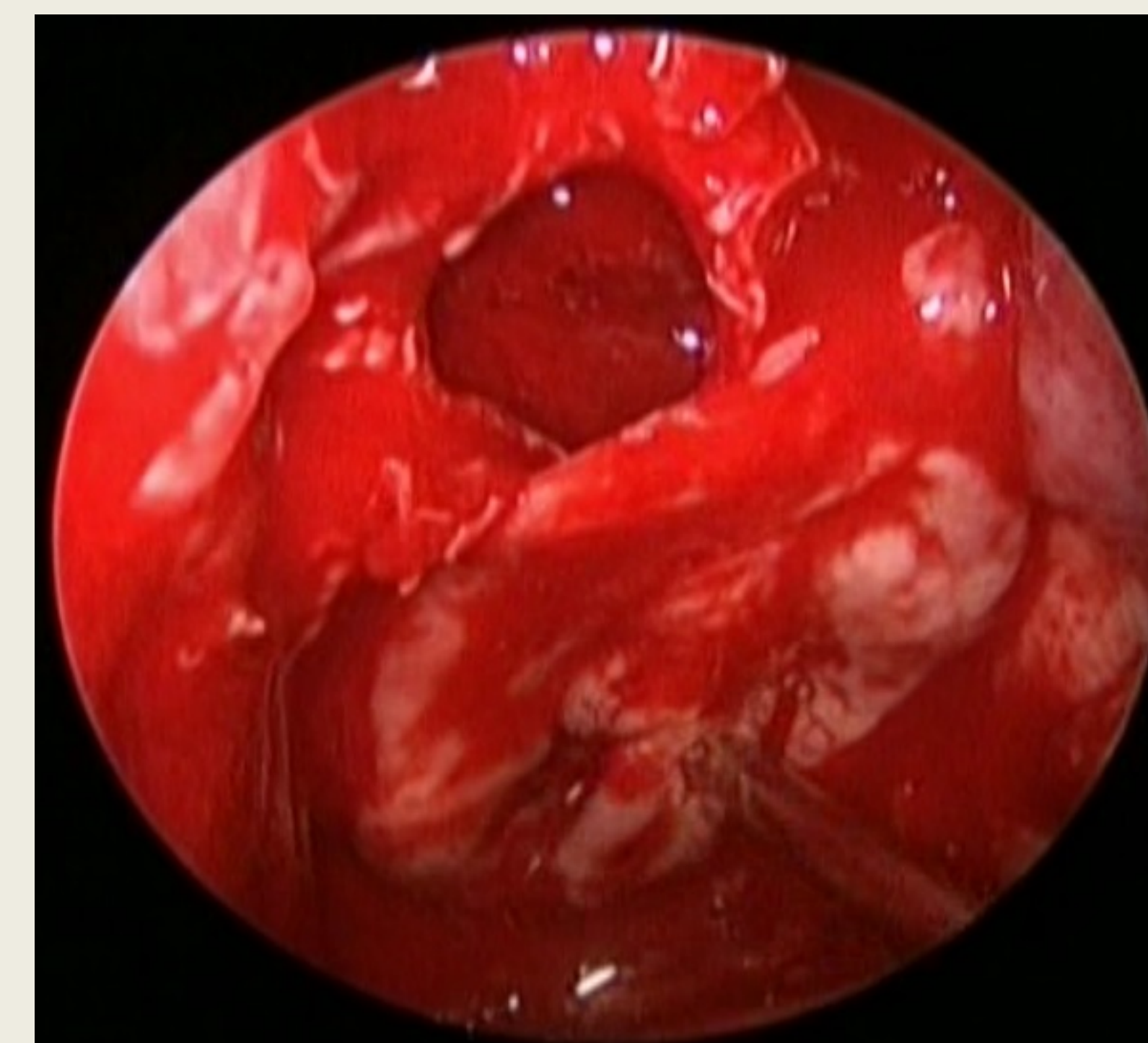


Fig 2. Left nasoseptal flap used to cover right postnasal space defect.



Fig 3. Mucosalized postnasal space postoperatively.

## DISCUSSION

The results are summarized in Table 1. The mean age of the patients was 55, and majority of the patients were male (n=11). All cases had rT1 disease, while 2 of which also had nodal recurrence and underwent neck dissection at the same setting.

Intra-operative frozen sections were utilized in all patients to determine clear resection margins. One patient however had positive margins on final paraffin sections despite negative intra-operative frozen section results. He subsequently underwent further resection with clear final margins and is currently still disease-free.

There was no perioperative mortality or immediate major post-operative complication in our review. Three patients were admitted for minor epistaxis post-operatively. Three other patients were diagnosed with skull base osteomyelitis on follow up requiring long-term antibiotic therapy. Two patients had cervical instability of which one underwent cervical fusion.

In our review, the 2 year overall survival and disease-free survival rates were 93.3% and 86.7% respectively. One patient was diagnosed with another local recurrence at 43 months post-operatively that was not amenable to surgery and was treated with chemotherapy. One other patient passed away from pneumonia at 23 months following surgery. The survival rates in our review are similar to those in the current literature.

## CONCLUSION

Endoscopic nasopharyngectomy is a feasible surgical option in the salvage treatment of patients with locally recurrent NPC. With early detection of recurrent disease, and appropriate selection of patients, this technique may be utilized with curative intent in patient with limited local disease. Favorable surgical and short term survival outcomes have been reported but further long term follow up data will be required to evaluate the efficacy of this surgical modality.

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