

Main Article

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Surgical treatment of nasolabial cysts in a single institute

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Abstract

Objectives. To analyse the results of treatment for nasolabial cysts according to whether an intraoral sublabial or endoscopic transnasal approach was used, and to determine the recent surgical trend in our hospital.

Methods. Twenty-four patients with a histopathologically and radiologically confirmed nasolabial cyst between January 2010 and December 2017 were enrolled in this study.

Results. Nasolabial cysts were predominant in females (91.7 per cent) and on the left side (54.2 per cent). Treatment involved an intraoral sublabial approach in 12 cases (48.0 per cent) and a transnasal endoscopic approach in 13 cases (52.0 per cent). In 13 cases (52.0 per cent) surgery was performed under local anaesthesia, while in 12 cases (48.0 per cent) it was conducted under general anaesthesia. The most common post-operative complications were numbness of the upper lip or teeth ($n = 9$, 36.0 per cent). Only one patient (4.0 per cent), who underwent a transnasal endoscopic approach, experienced a reoccurrence.

Conclusion. Surgical resection through an intraoral sublabial or transnasal endoscopic approach is the best treatment for a nasolabial cyst, showing very good results and a low recurrence rate. The recent surgical trend in our hospital is to treat nasolabial cysts using a transnasal endoscopic approach under local anaesthesia.

Introduction

Nasolabial cysts are benign and rare non-odontogenic masses located in the nasolabial fold.^{1–5} These lesions usually present as a painless swelling of the upper lip adjacent to the nasal alar region.^{1–5} For surgical treatment of nasolabial cysts, the intraoral sublabial approach and endoscopic transnasal approach have been advocated in the literature.^{1–7}

This study aimed to identify the clinical characteristics and surgical outcomes of patients with nasolabial cysts presenting at our hospital. We also analysed the treatment results according to the two surgical approaches and evaluated the recent surgical trend in our hospital.

Materials and methods

This study was performed after obtaining approval from the Institutional Review Board of Chonnam National University Hwasun Hospital. Retrospectively, 24 patients with a histopathologically and radiologically confirmed nasolabial cyst between January 2010 and December 2017 were enrolled in this study.

The clinical data of 24 patients with 25 lesions (1 patient had bilateral nasolabial cysts) were analysed, including patient demographics, symptoms, symptom duration, cyst size and location, surgery and anaesthesia methods, post-operative complications, recurrence, and follow-up results.

All patients underwent pre-operative computed tomography (CT) to assess the extent of the lesion and facilitate treatment planning. All cases of nasolabial cysts were confirmed histopathologically after surgery.

The Fisher's exact test was used to determine the association between two categorical variables. SPSS® version 20.0 software was used for all statistical analyses. Statistical significance was considered at $p < 0.05$.

Results

The clinical findings for the nasolabial cysts are summarised in [Tables 1](#) and [2](#). Of 24 patients with a nasolabial cyst, 2 were males and 22 were females. Their mean age (\pm standard deviation) was 50.8 ± 12.8 years (range, 17–72 years). Four patients had previously undergone an aspiration procedure. Three patients had previously received incision and drainage, while one patient had undergone marsupialisation. All patients presented with the mass in the nasolabial fold. Mean symptom duration was 29.5 ± 48.7 months (range, 0.5–216 months). The mean nasolabial cyst size was 1.7 ± 0.6 cm

Table 1. Clinical findings of 12 nasolabial cyst cases treated surgically using intraoral sublabial approach

Patient sex, age (years)	Previous procedure	Symptom duration (months)	Side	Size (cm)	Anaesthesia method	Pathological result	Complications	Recurrence	FU duration (months)
F, 41	–	3	Left	1.0	GA	Cyst	None	None	99
F, 58	–	48	Right	1.2	GA	Cyst	Numbness	None	29
F, 69	–	120	Left	1.4	GA	Cyst	None	None	52
M, 55	–	12	Left	2.5	GA	Cyst	None	None	44
F, 43	–	2	Left	1.5	GA	Cyst	None	None	5
F, 71	I & D	36	Right	3.4	GA	Cyst	None	None	91
F, 56	–	3	Right	1.5	LA	Cyst	Numbness	None	79
F, 57	–	1	Left	2.1	GA	Cyst	None	None	72
F, 54*	–	4	Both (right)	1.5	LA	Cyst	Numbness	None	68
F, 54*	–	4	Both (left)	0.8	LA	Cyst	Numbness	None	68
F, 52	Aspiration	1	Right	1.5	GA	Cyst	Numbness	None	67
M, 54	–	36	Left	2.0	LA	Cyst	Numbness	None	32

*Indicates the same patient, who had cysts bilaterally, showing data for both sides. FU = follow-up; F = female; GA = general anaesthesia; M = male; I & D = incision and drainage; LA = local anaesthesia

(range, 0.8–3.4 cm). The cyst was located on the right side in 10 cases, on the left side in 13 cases and on both sides in 1 case (Figure 1).

Surgical treatment involved an intraoral sublabial approach in 12 cases (48.0 per cent) and a transnasal endoscopic approach in 13 cases (52.0 per cent). In 13 cases (52.0 per cent) surgery was performed under local anaesthesia, while in 12 cases (48.0 per cent) the operation was conducted under general anaesthesia. All lesions except four were diagnosed as nasolabial cyst on histopathology. The remaining four lesions were revealed to be chronic inflammation.

There were no major complications resulting from surgical intervention. The most common post-operative complications were numbness of the upper lip or teeth ($n = 9$, 36.0 per cent). These symptoms resolved within three months. In 12 patients who underwent the intraoral sublabial approach, 6 developed numbness of the upper lip or teeth. Three of 13 patients who underwent the transnasal endoscopic approach also presented with numbness of the upper lip or teeth.

Mean follow-up duration was 44.1 ± 26.9 months (range, 5–99 months). Only one patient (4.0 per cent), who underwent a transnasal endoscopic approach, experienced a reoccurrence. Following re-operation, the patient was disease-free.

Discussion

In this study, the two surgical procedures for nasolabial cysts, namely the intraoral sublabial approach and the transnasal endoscopic approach, were performed at a similar rate. Local anaesthesia and general anaesthesia showed similar rates too. However, there was a statistically significant recent surgical trend in our hospital to treat nasolabial cysts using a transnasal endoscopic approach under local anaesthesia ($p < 0.05$).

There are two theories for the pathogenesis of nasolabial cysts, but they have not yet been established.^{2,3,5} One theory suggests that nasolabial cysts originate from trapped embryonic nasal respiratory epithelium after the fusion of maxillary medial and lateral nasal processes.^{2,3,5,8} The other theory

posits that nasolabial cysts are remnants of embryonic nasolacrimal duct tissue.^{2,3,5}

Nasolabial cysts were predominant in females (91.7 per cent) and presented more frequently on the left side (54.2 per cent), similar to previous reports.^{3,7} Nasolabial cyst occurred bilaterally in only one patient (4.2 per cent); this rate of bilateral occurrence is lower than that reported in other studies (approximately 10 per cent).^{2–6} The most common symptom of our patients was a mass in the nasolabial region.^{1–7} Imaging studies, including ultrasonography, CT and magnetic resonance imaging, are usually necessary for the diagnosis of nasolabial cysts.^{1–7} For accurate diagnosis and economic reasons, we performed CT scans.

Differential diagnoses of nasolabial cysts include both odontogenic and non-odontogenic lesions, such as a radicular cyst, periapical abscess, odontogenic cyst, schwannoma, minor salivary gland tumour, and dermoid and epidermoid cysts, which can develop in the nasolabial fold.^{3,7}

Surgical removal is the treatment of choice for a nasolabial cyst.^{1–7} There are two surgical methods for nasolabial cysts: an intraoral sublabial approach and a transnasal endoscopic approach. The intraoral sublabial approach is a classic technique and the most common method used for nasolabial cysts, performed via a sublabial incision.^{2,3,5} This approach can lead to good exposure of lesions. However, it is associated with some complications, such as facial swelling, numbness of gingiva and teeth, and risk of nasal floor perforation.^{1–7}

The transnasal endoscopic approach is a simple and effective procedure.^{2,3,5,9} This approach can lead to a reduced operative time, lower rates of facial swelling and pain, and a lower overall rate of complications.^{3,10} However, a small window on the nasolabial cyst may cause stenosis of the opening and a reoccurrence of the nasolabial cyst, as shown in one of our patients.^{5,10}

In this study, the most common post-operative complication was numbness of the upper lip or teeth ($n = 9$, 36.0 per cent). However, there was no significant difference in post-operative complications between treatment involving an intraoral sublabial approach or a transnasal endoscopic

Table 2. Clinical findings of 13 nasolabial cyst cases treated surgically using transnasal endoscopic approach

Patient sex, age (years)	Previous procedure(s)	Symptom duration (months)	Side	Size (cm)	Anaesthesia method	Pathological result	Complications	Recurrence	FU duration (months)
F, 54	I & D	60	Left	1.7	GA	Cyst	None	None	29
F, 46	Aspiration	216	Left	2.6	GA	Cyst	None	None	38
F, 37	Aspiration, I & D	2	Left	1.3	LA	Inflammation	None	None	24
F, 52	-	84	Left	1.6	GA	Cyst	None	None	88
F, 40	-	6	Right	0.9	GA	Cyst	None	None	50
F, 31	-	1	Left	0.9	LA	Cyst	None	None	32
F, 50	Marsupialisation	0.5	Left	1.6	LA	Inflammation	None	None	19
F, 64	Aspiration	23	Right	1.8	LA	Cyst	None	None	37
F, 17	-	1	Left	2.3	LA	Cyst	None	None	26
F, 72	-	0.5	Right	1.3	LA	Inflammation	None	None	27
F, 49	-	8	Right	1.4	LA	Cyst	None	None	14
F, 62	-	60	Right	2.1	LA	Cyst	None	Yes	16
F, 31	-	6	Right	1.5	LA	Inflammation	None	None	5

FU = follow-up; F = female; I & D = incision and drainage; GA = general anaesthesia; LA = local anaesthesia



Fig. 1. Coronal computed tomography scan revealing well-defined, low density, bilateral cystic lesions in the anterior nasal floor.

approach ($p > 0.05$). A previous systemic review showed no difference in complications between the two surgical approaches either.³

- Nasolabial cysts were predominant in females (91.7 per cent) and more frequent on the left side (54.2 per cent)
- Intraoral sublabial and transnasal endoscopic approaches were performed for nasolabial cysts at a similar rate
- Local anaesthesia and general anaesthesia also showed similar rates
- Surgical resection via an intraoral sublabial or transnasal endoscopic approach is the best treatment for nasolabial cyst
- The recent surgical trend in our hospital is to treat nasolabial cysts using a transnasal endoscopic approach under local anaesthesia

Recurrence and malignancy transformation are very rare.^{3,4} We only had one case of recurrence (4.0 per cent), in a patient who underwent a transnasal endoscopic approach. In a systemic review, Sheikh *et al.* demonstrated no significant difference in recurrence rates between an intraoral sublabial approach and transnasal endoscopic approach performed for nasal cysts.³

In this study, there were no significant differences in post-operative complications, anaesthesia method, or nasolabial cyst size between cases treated with an intraoral sublabial approach or a transnasal endoscopic approach (all $p > 0.05$). However, recently, the transnasal endoscopic approach under local anaesthesia has been performed more often in our institute ($p < 0.05$).

Conclusion

Surgical resection via an intraoral sublabial approach or a transnasal endoscopic approach is the best treatment for a nasolabial cyst, showing very good results with a low recurrence rate. The recent surgical trend in our hospital is to treat nasolabial cysts using a transnasal endoscopic approach under local anaesthesia.

Competing interests. None declared

References

- 1 Yuen HW, Julian CY, Samuel CL. Nasolabial cysts: clinical features, diagnosis, and treatment. *Br J Oral Maxillofac Surg* 2007;**45**:293–7
- 2 Boffano P, Gallesio C, Campisi P, Roccia F. Diagnosis and surgical treatment of a nasolabial cyst. *J Craniofac Surg* 2011;**22**:1946–8
- 3 Sheikh AB, Chin OY, Fang CH, Liu JK, Baredes S, Eloy JA. Nasolabial cysts: a systemic review of 311 cases. *Laryngoscope* 2016;**126**:60–6
- 4 Choi JH, Cho JH, Kang HJ, Chae SW, Lee SH, Hwang SJ *et al.* Nasolabial cyst: a retrospective analysis of 18 cases. *Ear Nose Throat J* 2012;**81**:94–6
- 5 Özer S, Cabbarzade C, Ögretmenoglu O. A new transnasal approach to nasolabial cyst: endoscopic excision of nasolabial cyst. *J Craniofac Surg* 2013;**24**:1748–9
- 6 Yeh CH, Ko JY, Wang CP. Transcutaneous ultrasonography for diagnosis of nasolabial cyst. *J Craniofac Surg* 2017;**28**:e221–2
- 7 Narain S. Nasolabial cyst: clinical presentation and differential diagnosis. *J Maxillofac Oral Surg* 2015;**14**(suppl 1):S7–10
- 8 Cohen MA, Hertzanu Y. Huge growth potential of the nasolabial cyst. *Oral Surg Oral Med Oral Pathol* 1985;**59**:441–5
- 9 Su CY, Chien CY, Hwang CF. A new transnasal approach to endoscopic marsupialization of the nasolabial cyst. *Laryngoscope* 1999;**109**(7 Pt 1):1116–18
- 10 Lee JY, Baek BJ, Byun JY, Chang HS, Lee BD, Kim DW. Comparison of conventional excision via a sublabial approach and transnasal marsupialization for the treatment of nasolabial cysts: a prospective randomized study. *Clin Exp Otorhinolaryngol* 2009;**2**:85–9