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The inverted nasal papilloma

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Introduction

PAPILLOMAS arising in the nasal cavities have been recognized for over 100 years. They are uncommon and most major centres rarely handle more than one affected patient per year, but because of their particular behaviour they are of special clinical interest and importance.

In 1855 Billroth probably described the first such tumour, which he termed a 'villiform cancer'. Its true significance was not understood, since it was only many years later that distinction was first made between pseudo-tumours and true epithelial neoplasia. In 1938 Ringertz drew attention to a papillomatous nasal growth, in which epithelial cell proliferation extended into the underlying stroma without invasion of the basement membrane. This inverted type of papilloma now accounts for up to 3 per cent of all nasal neoplasms.

The aetiology remains unknown and there is no evidence of hereditary or environmental influences. However, Norris (1963) comments that this lesion is rare among blacks, and Hyams (1971) reports a 5 per cent incidence of Negroes amongst 253 patients with various nasal papillomata. The commonest reported site of origin is the ethmoid sinus complex, although they have also been found in the maxillary sinus, on the middle turbinate and on the septum. However, accurate assessment of the exact site of origin is often difficult. Diagnosis is made histologically, but suspicion is often aroused by the initial clinical and radiological findings. The lesion may be accompanied by nasal polyposis, which can hide the true nature of the pathology and lead to failure to recognize the underlying condition. Misdiagnosis is compounded by failure to submit as a routine for microscopical examination all tissue removed from the nose.

These lesions, which histologically are squamous, transitional or, rarely, cylindrical cell, are considered pre-malignant, yet documented malignant transformation is rare. Schoub *et al.* (1973) reported cervical lymph node metastatic disease (well-differentiated and mainly transitional squamous cell type with an inverted pattern) in a patient who one year earlier had had an inverted well-differentiated papilloma of the ethmoid

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sinuses excised. Concomitant malignancy exists in up to 10 per cent and recurrences, which may be numerous, follow surgical excision in up to 70 per cent of the benign lesions.

Case Report

During the eight-year period 1973 to 1980, eight men and one woman aged between 22 and 68 years with histologically proven inverting papillomas of the nasal cavities were seen at Groote Schuur Hospital. None of these patients were black although 10 per cent of the patients seen for the first time in the ORL clinics of this hospital are of that ethnic group.

All these papillomatous lesions were squamous cell, but a transitional cell pattern was additionally present in three patients, in two of whom histological evidence of squamous cell carcinoma was also found in the 'totally' resected tumour tissue (Table I).

TABLE I
INVERTED NASAL PAPILLOMA
(Groote Schuur Hospital, 1971–1980)

	Age (yrs)	Sex	Obstruction	Nasal tumour	Other
1	22	M	+ (12 mo.)	+	—
2	36	M	+ (12 mo.)	+	Rhinorrhoea
3	43	M	+ (3 wks)	+	—
4	64	F	—	+	Pain, facial swelling
5	43	M	+ (6 mo.)	+	—
6	58	M	+ (3 mo.)	+	Rhinorrhoea
7	48	M	+ (3 mo.)	+	—
8	50	M	+ (1 mo.)	+	Epistaxes
9	68	M	+ (3 mo.)	+	Diplopia

The symptoms and signs of the benign lesions were similar, with nasal obstruction the primary and major feature. Mucopurulent nasal discharge occurred in two patients. Double vision occurred in another patient. One patient with carcinoma presented with facial pain and cheek swelling, but without nasal obstruction or discharge, whereas epistaxis was the presenting symptom in the other. In all patients tumour was visible on anterior rhinoscopy. In this series the ethmoid sinuses (anterior and/or middle) were involved in all but one patient in whom the lesion was confined to the maxillary antrum. The antrum was involved in four patients, including one with malignancy, and the frontal sinus in two patients, one of whom had recurrent disease. The lateral nasal wall was involved in all (Table II).

The diagnosis was confirmed in all nine patients by intranasal or intra-antral excision-biopsy of tumour tissue. The malignant element in two tumours was identified in the grossly excised specimen.

The management of choice following the initial histological diagnosis

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TABLE II
INVERTED NASAL PAPILLOMA
(Groote Schuur Hospital, 1971–1980)

	Site	Histol.	Treatment	Follow-up
1	Lt ethmoids	B	Caldwelll-Luc Lat. rhinotomy	Free 8 years
2	Rt antrim	A	Caldwell-Luc	Free 7 years
3	Lt ethmoids	A	Lat. rhinotomy	Free 7 years
4	Lt ethmoids Lt antrum	C	Lat. rhinotomy Cobalt (6000r)	Neck nodes (6 mo.) Died (18 mo.)
5	Lt frontal	A	Polypectomy Lat. rhinotomy × 2	Recurrences × 2 Free 4 years
6	Lt ethmoids Lt antrum	A	Lat. rhinotomy	Free 5 years
7	Lt ethmoids	A	Lat. rhinotomy × 2	Recurrence after 3 years
8	Rt ethmoids	C	Lat. rhinotomy Cobalt (6000r)	Free 3 years
9	Rt ethmoids Rt frontal Rt antrum	A	Lat. rhinotomy	Free 1 year

A = Squamous cell (inverted).
B = Squamous and transitional cell (inverted).
C = Squamous and transitional cell (inverted) with carcinoma.

was clinical and radiological reassessment followed by wide surgical resection. Lateral rhinotomy was used as the primary procedure on five patients, as a secondary procedure six weeks after a diagnostic radical (Caldwell-Luc) antrostomy on one patient, and for recurrences in two other patients. One patient, in whom disease was confined to the antrum and lateral nasal wall, underwent a radical antrostomy only. The two patients with malignant disease received in addition Telecobalt therapy.

Seven patients with benign disease have been followed up for 1 to 7 years. The only patient to initially undergo a local intranasal excision developed recurrent disease two years following the first local removal, and again one year later. Since the last excision *via* a lateral rhinotomy five years ago the tumour has not reappeared. The only other tumour recurrence, identified three years after a lateral rhinotomy, was recently re-excised by the same approach.

No real problems were encountered with the surgery. Although intranasal crusting occurred for up to six months post-operatively, no patients developed true atrophic rhinitis (ozaena) and subjectively and on clinical inspection the nasal mucosa eventually returned to normal.

Discussion

In 1902 Moure first publicized the procedure that today bears his name. In this the lateral paranasal skin incision is taken around the ala and into the nasal vestibule. A lateral nasal flap is raised and lateral nasal wall

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bone is removed to expose the nasal cavity, ethmoids and maxillary sinus as required. Excellent exposure for the removal of lesions of the nasal septum, nasal vault, lateral nasal walls, ethmoid and maxillary sinuses is thus obtained.

It appears from this and from other surgical reports that satisfactory and safe clearance of the inverted papilloma can be achieved by use in the first instance of the lateral rhinotomy exposure. Admittedly, our series does not have a long-term follow-up, but since other authors found the highest recurrence rate in the first two post-operative years, we feel some justification in supporting the conclusion that an aggressive surgical approach results in the best cure rates.

Norris (1963) gives a 38 per cent recurrence rate in six years of follow-up and some other authors quote even higher numbers. Ridolfi *et al.* (1977) had a recurrence of 67 per cent, most frequently found within one to two years. Hyams (1971) reported a recurrence rate of 67 (46 per cent) in 149 patients presenting at a mean average time of one year after initial resection; in 28 of these patients recurrences occurred more than twice. The possibility of multifocal origin as an alternative explanation cannot be ruled out, but the fact that the recurrences occur at the site of the original tumour does not support this.

Hyams (1971), Ridolfi *et al.* (1977) and Norris (1963) could find no apparent correlation between specific pathological features and the tendency for recurrence. The observation made by Hyams that nasal papillomas appear to spread by a metaplastic process along the adjacent mucosa suggests that a 'safe' margin of healthy mucosa should be removed at surgery. In these circumstances removal by intranasal procedures cannot be considered adequate and wide exposure through a lateral rhinotomy approach becomes mandatory. The immediate complications or the long-term unfavourable consequences of this operation should be considered rare and not contraindications to its use. Eradication of the disease at the first attempt is the best and could be the only chance of lasting cure.

Summary

Nine patients with inverted papilloma of the nose are presented. The clinical signs, management and follow-up results are discussed. Two patients had concomitant invasive carcinoma and two of the seven patients with benign disease suffered tumour recurrences following resection. The importance of adequate surgical exposure is stressed.

REFERENCES

HYAMS, V. J. (1971) *Annals of Otology, Rhinology and Laryngology,* **80:** 192.
NORRIS, H. J. (1963) *Laryngoscope,* **73:** 1.
RIDOLFI, R. L., LIEBERMAN, P. H., ERLANDSON, R. A. and MOORE, O. S. (1977) *The American Journal of Surgical Pathology,* **1:** 43.
RINGERTZ, N. (1938) *Acta Otolaryngologica* (Stockholm), **27:** Supplement, p. 1.
SCHOUB, L., TIMME, A. H. and UYS, C. J. (1973) *South African Medical Journal,* **47:** 1663.

https://doi.org/10.1017/S0022215100093567 Published online by Cambridge University Press