

## INVERTED PAPILLOMA OF THE NASAL CAVITY AND PARANASAL SINUSES\*

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### SUMMARY

*Eight cases of inverted papilloma of the nasal cavity are reported in South African Bantu patients. None showed any evidence of malignant transformation. The clinical features and management of this condition are discussed.*

Although the inverted papilloma of the nasal cavity has been studied for over 100 years, the clinical approach to this lesion remains ill-defined and wide recognition of the problems involved is still not evident. This may be attributed to the infrequency of the condition, the ease with which it may be mistaken for a fleshy polyp, and the variety of synonyms used to describe it (septal papillomata, transitional cell papillomata, Ringertz tumours, true papilloma, epithelial papillomas, fibro-epithelial papillomas). The purpose of this article is to consider the occurrence of inverted nasal papillomas in South African Bantu and to review the management of this disease in the light of our experience.

### Incidence

In 1935 Kramer and Som<sup>1</sup> reviewed the literature and found only 81 reported cases. Osborn<sup>2</sup> in 1956 reported on 61 cases collected from 189 224 outpatient visits over an 8-year period. In 1961 Pfisterer<sup>3</sup> found an estimated 200 cases reported in the literature. Judge<sup>4</sup> reported an incidence of 0.8% encountered during routine examination of sinusotomy tissues. Brown<sup>5</sup> reported 24 cases occurring in a decade at a treatment centre for malignant disease which serves a population of 4½ million. We have encountered 8 cases admitted to Baragwanath Hospital during the period 1967 - 1970; this hospital admits approximately 85 000 inpatients annually.

### CASE REPORTS

#### Case 1

A 46-year-old Bantu female complained of left nasal obstruction of 1 year's duration. Nasal 'polypi' had been removed from the left nasal cavity on 3 separate occasions during the previous decade. A soft polypoid mass was presenting at the left nostril together with a purulent rhinorrhoea. X-rays showed opacification of the left nasal cavity and the left antrum. The left ethmoid was radiologically normal. The tumour was removed under general anaesthesia by firm traction applied to the body by two Henckels forceps. The mass was withdrawn from the antrum through a large opening below the inferior turbinate. A Caldwell-Luc antrostomy was then carried out in order to remove the antral mucosa completely. The tumour measured 9 cm in length and histological examination showed the features of a benign inverted papilloma. No recurrence was noted 2 years later.

#### Case 2

A 64-year-old Bantu male complained of complete right-sided obstruction of 2 years' duration. The right nostril was occluded by a polypoid tumour. X-rays showed opacification of the right nasal cavity, ethmoid and an-

trum (Fig. 1). Under general anaesthesia a tumour 10 cm in length was pulled out of the nose, intact. The right nasal

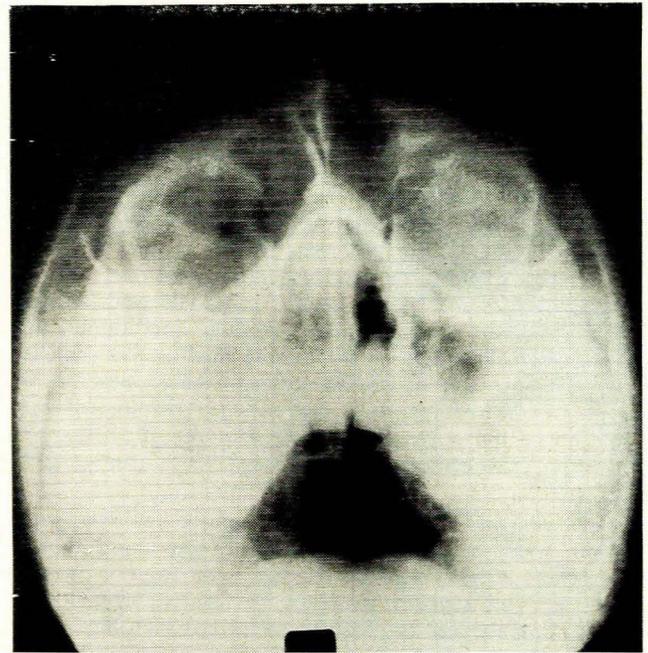


Fig. 1. Water's view of sinuses in case 2, showing opacification of right nasal cavity, ethmoids and antrum.

cavity was widened with the septum displaced to the opposite side and the ethmoids compressed. Slight bleeding occurred from the point of attachment of the tumour, a small 2-cm area posteriorly in the middle meatus. The ethmoidal cells in this area were punched away. A Caldwell-Luc antrostomy showed the antrum to be free of tumour, but the mucosa was hypertrophied and purulent. An intranasal antrostomy was performed. Histologically the tumour was diagnosed as an inverted papilloma with abundant inflammation and squamous metaplasia. The antral mucosa showed the features of chronic inflammation. Six months later there was no sign of recurrence.

#### Case 3

A 65-year-old Bantu female presented with complete left nasal obstruction of 6 months' duration and a large polypoid tumour occluding the left nostril. She was hypertensive, in left ventricular failure and the chest X-ray showed a huge saccular aneurysm of the aortic arch. VDRL was negative. Removal of the tumour was accomplished under local anaesthesia and intravenous Valium. Gentle traction applied to the body of the tumour resulted in its delivery intact, measuring 9 cm in length. The point of attachment to the middle meatus posteriorly was clearly seen and cells in this area were punched away. Histological examination showed the features of a benign inverted papilloma. This patient did not return for follow-up.

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*Case 4*

A 70-year-old Bantu male presented with complete left-sided nasal obstruction and a polypoid growth in the left nostril. He was on treatment for hypertension and cardiac failure. X-rays showed opacification of the left nasal cavity, antrum and ethmoid. A tumour measuring 7 cm in length was removed by a lateral rhinotomy approach. The tumour was attached to the middle meatus and the nasal cavity was widened. A Caldwell-Luc antrostomy showed the antrum to be full of pus but free of tumour. Histological examination showed the features of a benign inverted papilloma. No recurrence was noted 9 months later.

*Case 5*

A 30-year-old Bantu female presented with left nasal obstruction and a polypoid mass visible anteriorly at the nostril and posteriorly in the choana. X-rays showed opacity of the left nasal cavity, ethmoids and antrum. The polyp was removed under general anaesthesia, and the area of attachment to the middle meatus was punched away. Proof puncture of the antrum yielded pus and an intranasal antrostomy was performed. Histological examination of the polyp showed the features of an inverted papilloma. There was no recurrence 3 years after surgery.

*Case 6*

A 31-year-old Bantu female presented with a small tumour 1 cm in diameter attached to the nasal septum on the left side. This was excised with cauterization of the base. The septum was not perforated. Histological examination showed the features of an inverted papilloma. There was no recurrence up to 3 years after surgery.

*Case 7*

A 20-year-old Bantu female complained of right nasal obstruction and occasional mild epistaxis. These symptoms had commenced 4 years previously, but she also stated that a growth had been removed from her nose at the age of 4 years. A polypoid mass was visible in the right nostril. X-rays showed opacity of the nasal cavity, ethmoids and antrum on the right side. Under general anaesthesia the tumour was found to be attached to the inferior turbinate which was partially excised in order to remove the mass. A Caldwell-Luc antrostomy was performed and the antrum was cleared of infected mucosa. Histological examination showed the features of an inverted papilloma. There was no recurrence up to 4 years after the operation.

*Case 8*

A 50-year-old Bantu male presented with right nasal obstruction of 8 months' duration. A polypoid mass was visible in the right nostril. X-rays showed opacity of the right nasal cavity, antrum and ethmoids. Under general anaesthesia the polyp was removed and its area of attachment to the middle meatus was punched away. An intranasal antrostomy was performed. Histological examination showed the features of an inverted papilloma. There was no recurrence 4 years after the operation.

## DISCUSSION

*Pathology*

The macroscopical appearance of all our cases was similar, viz. firm fleshy tumours with papillary fronds.

The tumours may be extremely large. In these cases they measure from 7 to 10 cm. Gadre and Lodaya<sup>6</sup> reported a large papilloma weighing 100 g. The bulk of the tumour may produce deviation of the septum or atrophy of the ethmoidal cells.

Microscopically the tumours are characterized by marked epithelial proliferation which extends both superficially and deeply. The surface is thrown into papillae with deep crypts in the submucosa. The basement membrane is entirely intact and mitotic activity is not much in evidence. The cells are mainly columnar, but metaplasia to squamous or transitional cells may be observed.

Controversy exists as to whether the tumours are benign, premalignant or malignant. The rate of recurrence is certainly high after removal; Ringertz reported 5 recurrences in 8 cases, Norris<sup>8</sup> 8 in 29 cases and Osborne<sup>2</sup> 9 in 61 cases. We have not observed any recurrence in the patients treated in this series, but the follow-up is not long and there is difficulty in tracing some of the patients. Recurrence may be due either to inadequate removal or to multicentricity of origin. Malignant change in a previously benign papilloma is rare. This can only be accepted in cases where the original histology is available, and where the malignant focus is found in what appears to be a benign papilloma. Individual cases of such malignant change have been reported.<sup>1,9-13</sup>

*Clinical Features*

Nearly all cases are unilateral and produce nasal obstruction. With careful inspection one can usually differentiate the papillary fronds at the nostril from a mass of nasal polypi. The colour is usually pale pink. Purulent rhinorrhoea may be present. Epistaxis occurred in one of our cases but is an unusual symptom. Frog face, ocular pain, proptosis, facial swelling and epiphora have all been reported, usually in conjunction with cases where a malignant histological appearance was found. Small tumours may be entirely asymptomatic. The absence of cervical or distant metastases in malignant cases is a noteworthy observation made by most authors.

The anatomical site most commonly affected was the lateral wall of the nose in the region of the middle meatus. Five of the cases were attached in this area, and in none was the ethmoid invaded, although compression and secondary infection had occurred. One tumour arose from the septum, one from the inferior turbinate and one from the antrum. This pattern follows the incidence reported by Brown.<sup>5</sup>

The X-ray appearances of inverted papillomas are practically identical with those seen in the case of antrochoanal polypi. The nasal cavity is filled unilaterally with a soft-tissue shadow. The antrum may be opaque from associated sinusitis or from tumour filling the sinus. The ethmoids may be clear unless there is ethmoiditis or invasion of the cells. Bony destruction is not a feature except in the late stages of malignant cases.

*Management*

In view of the tendency of these tumours to recur, and the fact that a proportion of them are malignant, wide excision and histological examination are essential. For this reason the removal of nasal 'polyps' without histological

examination is to be deplored. On the other hand, the radical procedures advised by some authors are unnecessary as most of the tumours may be expected to be benign. We have found that gentle traction applied to the firm body of the tumour results in its extraction, intact. The point of attachment can be seen directly in the widened nasal cavity, and excision of the base can then be accomplished. We have found the technique of intranasal speno-ethmoidectomy to be adequate for this purpose. We have not hesitated to proceed to a Caldwell-Luc or lateral rhinotomy approach in those cases where the antrum was suspect. This allows direct inspection of the antrum and removal of infected mucosa or tumour. The discovery of malignant disease indicates telecobalt therapy and radical surgery.

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