

Inverted Papilloma – overview of our experience

N.Venkatram Reddy M.S¹, K.Anjani Kumari M.S, Vyshanavi Bommakanti

D.N.B

Associate Professor Department Of E.N.T and H.N.S Government E.N.T Hospital Koti Telangana India

Abstract:

Objective: To share our surgical experience in treating inverted papilloma.

Study Design: Retrospective study

Setting: Tertiary referral Hospital

Results: In our series majority of cases were done by external approach by lateral rhinotomy (50/70), the endoscopic assistance is required to ensure complete removal of the tumour to reduce the recurrence rates.

A significant number (20/70) were done by exclusive transnasal endoscopic approach when the tumour is confined to middle meatus, maxillary sinus, frontal recess, ethmoid and sphenoid sinus.

Overall recurrence rate was 22%

Conclusion:

Recurrence rate of inverted papilloma can be reduced by endoscopic assistance in tumour removal ensuring adequate margin. Continuous follow up of the patients helps in early detection of recurrence.

Key words: Inverted papilloma , endoscopic excision

I. Introduction:

Inverted papilloma are rare benign epithelial tumour which accounts for 0.5 to 4 % of all primary paranasal sinuses tumours .¹They are known to arise from the Schneiderian epithelium of the sinonasal tract. In 1938 Ringertz was the first to identify the tendency of schneiderian papilloma inverting into underlying tissues.²In 1991 WHO classified the tumours arising from the Sinonasal Schneiderian membrane into exophytic ,inverted and oncocyctic ³.Of these inverted papilloma and exophytic papilloma account for majority of the sinonasal papillomas and oncocyctic being rare⁴. There is an etiological association between HPV virus and the occurrence of papillomas but the association has not been universally accepted . These tumours are known for their aggressive behaviour and a tendency to recur. Recurrence of the tumour is attributed to incomplete tumour resection or inadequate margin . Chances of recurrence range from 5.7 to 32%^{5,6}. Inverted papilloma are also known for high risk of malignant transformation which is about 27%⁷. These tumours have variable clinical presentation like nasal obstruction ,facial swelling, epistaxis ,anosmia etc and the definitive diagnosis is by histological examination .

Surgical excision is the treatment of choice but choice of approach depends on the extent of tumour spread and destruction of the surrounding bone .Complete tumour resection and adequate negative margin reduces the chances of recurrence.

We evaluated a series of 72 cases of inverted papilloma from January 2002 to December 2011 . We would like document our experience in diagnosing and treating cases of inverted papilloma.

II. Materials and Methods:

This is a retrospective study done in a tertiary referral centre for a period of 11 years .

Institutional Ethical Committee Approval was taken to conduct this study .

Details of the patient were taken from the case charts of patients who were diagnosed as inverted papilloma histologically .The demographic data was noted . Detailed history ,examination and radiographic findings and the operative procedure performed were noted and analysed .

Inclusion:

Definitive cases of inverted papilloma which were diagnosed on biopsy were included in our study .

Primary as well as revision cases were included in the study

In all patients endoscopic and radiological findings were taken into consideration for determining the extent of tumour . Surgical approaches depends on size of the tumour,extent of tumour and destruction of the surrounding tissue. Various procedures performed included

Lateral Rhinotomy and Medial Maxillectomy
Lateral Rhinotomy or extended lateral lateral rhinotomy with endoscopic assisted excision
Exclusive endoscopic approach
Endoscopic with Caldwell Luc approach
Palliative radiotherapy

Intraoperatively complete excision of mass with 1cm margin was done in all cases .

Following surgery patients were discharged on 4th post op day . None of the patients had any major complications . All the patients were followed for a mean period of 1 years . Each time endoscopic examination was done to check for any recurrence .

In patients who had recurrence revision surgery was performed and the patients were kept under continuous surveillance.

III. Results:

A total of 72 cases were included in the study of which 56 cases were new and 16 were revision cases which were operated previously elsewhere. Males were 50 and females were 22 with a sex ratio of 3:1 . The age ranged from 35 to 75 with a mean age of 52 years . Presenting symptoms are represented in table 1. A few patients presented with a combination of more than one symptom.

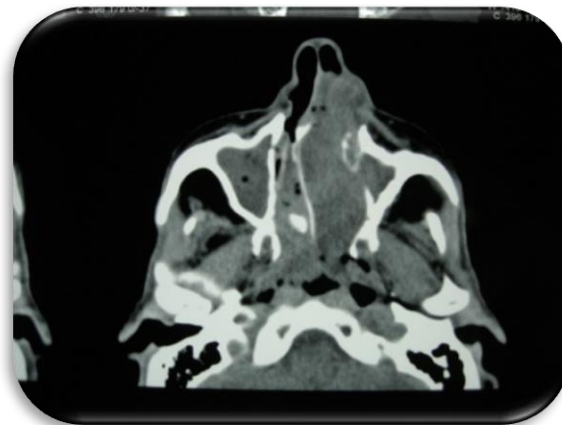
Table 1 : Presenting symptoms

Symptoms	
Nasal obstruction	60
Facial swelling	32
Hyponasal speech	28
Epistaxis	16
Pain and pressure	8
Rhinnorhea	10
Anosmia /Hyposmia	6
Headache	1

CT Scan of the paranasal sinuses with contrast was done which showed Bony destruction in all the cases . The sites of destruction is represented in Table 2. A few cases showed bony hyperostosis .

Site of destruction	
Medial wall of maxilla	40
Medial wall of orbit	4
Anterolateral wall of maxilla	2
Cribriform plate	2
Floor of sphenoid sinus	2
No radiological evidence	22

One of the rare presentation in our series was spread of tumour from the lateral nasal wall to the lacrimal sac [Picture 1 and 2]. The pre operative and post operative pictures are shown in the pictures below.[Picture 3 and 4]



Picture 1



Picture 2



Picture 3



Picture 4

Histologically the tumours were classified as benign and benign tumour harbouring malignancy simultaneously. 66 patients fell under benign category while 6 patients had associated squamous cell carcinoma

Surgery was performed in all patients except two patients who was sent for palliative radiotherapy as the patient was unfit to undergo surgery .

Lateral Rhinotomy and Medial Maxillectomy	16 patients
Lateral Rhinotomy or extended lateral lateral rhinotomy with endoscopic assisted excision	32patients
Exclusive endoscopic approach	20 patients
Endoscopic with Caldwell Luc approach	2 patients
Palliative radiotherapy	2 patients

Patients were followed up for a period of 3 years after surgery . Out of the 70 patients who underwent surgery recurrence was seen in 16 patients .These patients underwent revision surgery . Out of these 16 patients 4 patients underwent exclusive endoscopic approach while the rest 12 underwent combined approaches . Following the revision surgery all the patients are doing fine and are presently under follow up.

IV. Discussion:

A total of 72 cases were included in the study of which 56 cases were new and 16 were revision cases which were operated previously elsewhere.

Males were 50 and females were 22 with a sex ratio of 3:1 . This correlates with a study HUAN-XIN YU where they found the sex ratio to be 3.6:1 .⁸ The age ranged from 35 to 75 with a mean age of 52 years .A study done by Liang QZ found mean age of presentation to be 54 years which correlated with our study .⁹

The most common symptom in our study was nasal obstruction which is similar to the description done by Rabelo in his study.¹⁰ A few rare presentations included headache in one patient which was probably due to involvement of tumour to the sphenoid sinus. Isolated involvement of the sphenoid sinus has been rarely described in the literature .^{11,12} but in our study 2 patients had isolated involvement of sphenoid sinus .

Histologically 66 patients fell under benign category while 6 patients had associated squamous cell carcinoma. Inverted papilloma with associated squamous cell carcinomas account for about 15% of the cases in a study done by Myers.N¹³ but in our study it accounted for 8.3% of the cases .

Radiologically the primary anatomical site of involvement was medial wall of maxilla in 56% of the patients .Medial wall of the orbit in 5% of the patients .Anterolateral wall of maxilla ,floor of the sphenoid and the cribriform plate each accounted for 3% . No radiological evidence of bony destruction or areas of hyperostosis was seen in 30% of the patients . But according to a study done by Liang QZ⁹ ,Document 24% of patients with involvement of the maxillary sinus , 21.8% of the involvement of the lateral nasal wall ,13.8% involvement of the ethmoid sinus, Sphenoid sinus involvement in 8%, Frontal sinus in 4.6% Inferior turbinate5.8% Septum 3 % Unidentified 18.4% which is almost similar to the findings in our study .

In our study tumour margin of 1cm was kept in all cases but a study reports obtaining tissue margins outside of the primary specimen for margin control did not affect disease control rates.¹⁴

Aim of the surgery was to excise the tumour completely . In cases where the tumour was not accessible completely through endonasal approach external approach was used . In 34 patients endoscopic assisted external approach was used to remove the tumour.

Overall recurrence rate was 22% . Exclusive endoscopic approach had a 20% patients with recurrence while external approaches assisted with endoscopic technique had a recurrence rate of 25% . Pasquini reported low chances of recurrence in endoscopic excision as compared to external approaches.¹⁵

None of the patients developed any serious complications and neither were any deaths reported in our study .

A mean follow up of 1 year was done in all patients but all the patients are under 6 monthly surveillance till date . It is important to have a long follow up for these patients as there are high chances of recurrences even years after surgery.

V. Conclusion :

Inverted papilloma common benign tumor of the nose and paranasal sinus . Commonest presentation include nasal obstruction, facial swelling and hyponasal speech in majority of cases.CT contrast is choice investigation to delineate the tumour extent and plan for surgical approach

In our series majority of cases were done by external approach by lateral rhinotomy (50/70), the endoscopic assistance is required to ensure complete removal of the tumour to reduce the recurrence rates.

A significant number (20/70) were done by exclusive transnasal endoscopic approach when the tumour is confined to middle meatus, maxillary sinus, frontal recess, ethmoid and sphenoid sinus. Powered instrumentation is extremely useful to achieve good results.

Exclusive endoscopic approach or endoscopic assisted external approach reduces the chances of recurrence .

The overall recurrence rate is 22%. Continuous follow up provides a chance for early detection of recurrence.

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