Abstract: Inverted papilloma is a benign epithelial neoplasm arising from the lateral nasal wall and less commonly, in the paranasal sinuses. It is relatively uncommon, accounting for less than 4% of mucosal tumors in this region. The tumor is characterized by a high recurrence rate (70%), associated epithelial malignant tumors (10%), and bone destruction. Inverted papilloma is the most likely diagnosis when an unilateral mass is seen in the lateral nasal wall which extends centrifugally into the maxillary and ethmoidal sinuses and through the nasal choana into the nasopharynx. This 36 year old female reported to the ENT department with symptoms of right sided nasal obstruction for six months, right sided blood stained nasal discharge for six months, blurring of vision for six months and protrusion of eye for six months. She was already operated for sinonasal polyposis 5 months before and biopsy report was given as inverted papilloma. She was treated by endoscopic medial maxillectomy and excision of the mass using microdebrider.

Key word: Inverted papilloma, Endoscopic medial maxillectomy, Microdebrider

INTRODUCTION
The inverted papilloma is the second most common benign sinonasal tumour. Despite its benign nature, the inverted papilloma has high propensity for local recurrence and may undergo malignant transformation into squamous cell carcinomas. Approximately 20% of these tumors may present several degrees of epithelial dysplasia, which makes a malignant potential to the inverted Schneiderian papilloma (1). The etiology of inverted papillomas remains controversial, but factors such as chronic inflammation, allergy, occupational pollutants and mainly infection with human papilloma virus have been suggested. Complete surgical resection with a life-long follow up for detection of the possible recurrences and malignant transformation is the recommended treatment for this tumor (2).

CASE REPORT:
A 36 year old female reported to the ENT department with symptoms of right sided nasal obstruction for six months, right sided blood stained nasal discharge for six months, blurring of vision for six months and protrusion of eye for six months, H/O anosmia present. Patient had similar complaints and operated for sinonasal polyposis on 22-2-2015 and biopsy report was given as inverted papilloma.

EXAMINATION:
NOSE-External contour-normal. Anterior rhinoscopy- Proliferative pinkish mass seen occupying the right nasal cavity, can be probed all around except laterally, sensitive to touch, bleeds on touch, septum deviated to left. Posterior rhinoscopy- Pinkish mass seen extending into right choana. Both fossa of Rosenmuller free. Left choana free. EYE-9mm outward & 2mm upward deviation of eyeball-present (Fig-1). Extraocular movements- normal & full. Visual acuity - normal. Diagnostic nasal endoscopy- Proliferative pinkish mass seen in right nasal cavity erosion the septum and extending into left nasal cavity (Fig-2)

Fig-1 : Showing pre-operative eccentric proptosis

Fig-2 Showing pre-operative endoscopic view of the mass

RECURRENT INVERTED PAPILLOMA WITH MALIGNANT TRANSFORMATION - A CASE REPORT
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CT PNS-Evidence of heterogeneously enhancing soft tissue density lesion noted in right nasal cavity with extension into right ethmoid sinus, right maxillary sinus and causing erosion of bones. Evidence of opacification in sphenoid, bilateral frontal, left maxillary and left ethmoid sinus. Evidence of erosion of inferior and medial wall of right orbit and extension of lesion into the orbit noted. (Fig-3, 4)
papilloma (4). In 1854, it was described by Ward and named papilloma, epithelial papilloma, papillary sinusitis, endophytic Schneiderain papilloma, cylindrical cell papilloma, transitional cell respiratory tract. It has synonyms such as villiform cancer, papilloma originating from the Schneiderian mucosa of the nasal Embryologically the ectodermally derived epithelium of inverted composed of well-differentiated columnar or ciliated respiratory Inverted papilloma is defined as a benign epithelial tumour type Patient was given radiotherapy after HPE report. -5) HPE report- sinonasal squamous cell carcinoma non-keratinising removed after 24 hours and postoperative period was uneventful. (Fig -5) HPE report- sinonasal squamous cell carcinoma non-keratinising type Patient was given radiotherapy after HPE report. using 0° degree Hopkins rod lens endoscopic diagnostic nasal endoscopic findings confirmed. Using Blakesley forceps biopsy taken. Using debrider mass was excised in toto from the right nasal cavity, right maxillary sinus, frontal, ethmoid and sphenoid sinus. Right lamina papryacea was eroded by the mass and extending into right orbit and was attached to medial rectus muscle and the same was removed. Mass in the left nasal cavity along with the septum removed. Complete haemostasis achieved and pack kept. Pack was removed after 24 hours and postoperative period was uneventful. (Fig -6) HPE report- sinonasal squamous cell carcinoma non-keratinising type Patient was given radiotherapy after HPE report. Fig-3 CT-PNS coronal view - heterogeneously enhancing soft tissue density noted in right nasal cavity, extending into right and left ethmoid, maxillary, frontal, sphenoid sinus and into right orbit. Fig-4 CT-PNS-axial view- heterogeneously enhancing soft tissue density noted in right nasal cavity, extending into right and left ethmoid, maxillary, frontal, sphenoid sinus and into right orbit. SURGERY: Using 0° degree Hopkins rod lens endoscopic diagnostic nasal endoscopic findings confirmed. Using Blakesley forceps biopsy taken. Using debrider mass was excised in toto from the right nasal cavity, right maxillary sinus, frontal, ethmoid and sphenoid sinus. Right lamina papryacea was eroded by the mass and extending into right orbit and was attached to medial rectus muscle and the same was removed. Mass in the left nasal cavity along with the septum removed. Complete haemostasis achieved and pack kept. Pack was removed after 24 hours and postoperative period was uneventful. (Fig -5) HPE report- sinonasal squamous cell carcinoma non-keratinising type Patient was given radiotherapy after HPE report. Fig-5 showing intra-operative view of the mass. Fig-6 showing post-operative endoscopic view Fig-7 showing post-operative reduction in proptosis DISCUSSION Inverted papilloma is defined as a benign epithelial tumour composed of well-differentiated columnar or ciliated respiratory epithelium having variable squamous differentiation (3). Embryologically the ectodermally derived epithelium of inverted papilloma originating from the Schneiderian mucosa of the nasal cavity is distinct from the endodermally derived mucosa of the upper respiratory tract. It has synonyms such as villiform cancer, Schneiderian papilloma, cylindrical cell papilloma, transitional cell papilloma, epithelial papilloma, papillary sinusitis, endophytic papilloma (4). In 1854, it was described by Ward and named Schneiderian papillomas in honour of C. Victor Schneider (5). In 1938, Ringertz coined the term inverted papilloma, based on its histological findings of inversion of the epithelium into underlying stroma. Inverted papillomas are relatively uncommon tumours of the nasal cavity comprising approximately 0.5% to 4% of all primary nasal tumours. There is male predominance 3:1. Most patients are usually diagnosed in the 5th and 7th decade with an average age of 53 years. It is a benign but locally aggressive tumour having high chance of recurrence and high risk of association with synchronous as well as metachronous malignancies. Its exact aetiology is still uncertain. Studies using in situ hybridization and polymerase chain reaction have detected human papilloma virus in upto 86% of inverted papillomas. Mostly HPV 6,11,16 and 18 have been found. The presence of HPV DNA in inverted papilloma have been found to be associated with higher chance of recurrence and malignant transformation (6). The commonest site of origin of this tumour is lateral wall of nasal cavity, then medial wall of maxillary sinus. Less commonly it arises from ethmoid, sphenoid and frontal sinuses. Isolated involvement of sphenoid sinus have been reported by many authors. Besides nose and paranasal sinuses inverted papilloma arising from lacrimal sac and temporal bone have also been reported (7). CLINICAL FEATURES The clinical presentation of inverted papilloma depends upon the site of involvement. However, the commonest symptom of inverted papilloma is progressive unilateral nasal obstruction. Other symptoms include blood mixed nasal discharge, headache, facial pain, frequent clearing of throat, decreased or loss of smell, epiphora or symptoms suggestive of sinusitis. Inverted papilloma generally occurs unilaterally, but the bilateral involvement has been reported in less than 1 to 9% of patients. A recent study by Visvanathan et al reported 10 cases of inverted papilloma with intracranial extensions. On examination pinkish polypoidal smooth or lobulated mass with papillary surface located lateral to the middle turbinate in the nasal cavity is suggestive diagnosis of inverted papilloma. Septum may be pushed to opposite side. However sometimes clinically there may be difficulty to differentiate inverted papilloma from other masses. Depending upon the extent of tumour other signs such as proptosis and facial swelling may be present (8). INVESTIGATIONS: Computed tomography and magnetic resonance imaging are the techniques of choice for pretreatment staging of neoplasms of sinonasal tract. In CT the areas of focal hyperostosis correspond to the actual tumour origin in inverted papilloma. CT scans can be used to differentiate focal hyperostosis from diffuse bony thickening usually associated with chronic sinusitis. Convoluted celebroform pattern on T2 or enhanced T1-weighted images suggests inverted papilloma (9). A biopsy is mandatory to obtain a definitive diagnosis. TREATMENT Three basic types of endoscopic resections are available according to our classification. Type I resection- inverted papillomas that involve the middle meatus, ethmoid, superior meatus, sphenoid sinus. Type II resection – endoscopic medial maxillectomy Type III resection – Sturman-Canfield operation or endonasal Denker operation. Removal of the medial portion of the anterior wall of the maxillary sinus (10). CONCLUSION: Patients with inverted papilloma should undergo thorough surgery to remove all mucosal disease, most probably by

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endoscopic endonasal route when complete resection is possible. Cases demonstrating atypia or dysplasia may be treated by endoscopic route. Recurrent disease and metachronous carcinoma can develop after prolonged period of time. Longterm followup is recommended to detect recurrence, as disease can become extensive before it becomes symptomatic.

REFERENCES
