

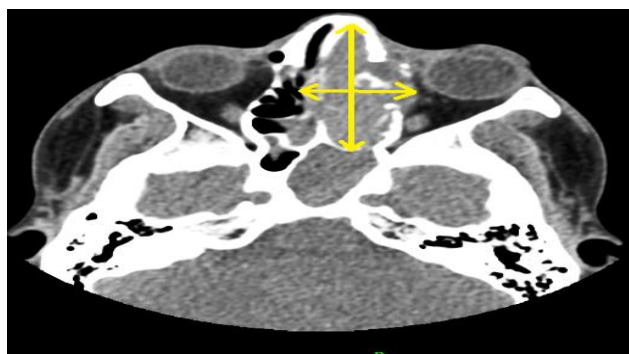
## Letter to The Editor

# High-grade non-salivary non-intestinal adenocarcinoma of the nasal cavity-a less known entity

Sir,

Sinonasal region, with its anatomical complexity, is commonly associated with a number of tumors. Salivary gland tumors are frequent but adenocarcinomas are uncommon.<sup>1</sup> Here presented an uncommon case of high-grade adenocarcinoma non-salivary non-intestinal type.

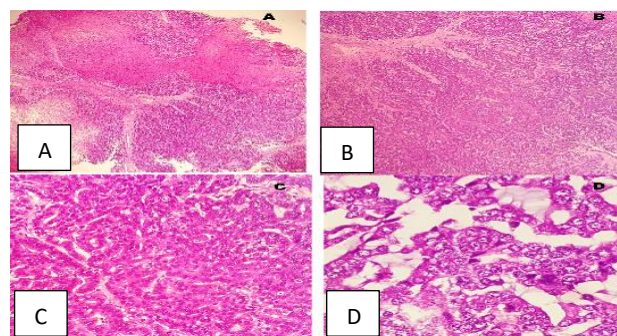
A 32-year old male patient, apparently asymptomatic one year ago, developed a sudden episode of nasal bleeding (approximately 5 ml in quantity). There was no history of trauma preceding the bleeding. Since then he had daily episodes of nasal bleeding associated with headache, not associated with pain or swelling. On examination there was a nasal growth in left nostril clinically suggestive of inverted papilloma. Non contrast CT showed a homogenous polypoidal soft tissue density seen involving left maxillary, frontal, sphenoidal and ethmoidal sinuses with complete opacification of sinuses with bony erosions and soft tissue density extends into nasopharynx (Figure 1). Blockage of left ostiomeatal unit (OMU) was seen, while right OMU appear normal and patent. Nasal septum shows mild bulge. The turbinate appeared normal in configuration. In view of opacification of all sinuses radiologic differential diagnoses of inverted papilloma and sinonasal polyposis were considered.



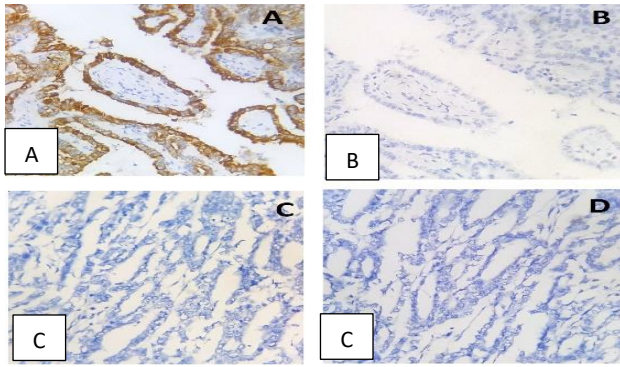
**Figure 1: Non contrast CT of paranasal sinus of deviation of nasal septum to left with opacification of the left maxillary, frontal, sphenoidal and ethmoidal sinuses by soft tissue density and bony erosion.**

The mass was excised under general anesthesia by functional endoscopic sinus surgery (FESS). Hemostasis was ensured and patient was stable after procedure. Grossly, the formalin fixed specimen was received comprising of multiple grey white tissue bits largest measuring 2×1.5×1 cm and smallest measuring 0.8×0.4×0.4 cm. On cut surface, it was solid with areas of congestion.

Sections reveal a tumor arranged in glandular, papillary, cord like and solid pattern (Figure 2 A-D). The tumor cells revealed moderate degree of pleomorphism with scanty cytoplasm with coarse clumped chromatin. A good number of mitotic figures (typical and atypical) along with necrosis within the tumor were noted. The surface epithelial lining and sub-epithelial mucosal glands were also seen. No cyst formation, pink cytoplasmic granules or clear cell change or oncocytic change. There was no evidence of heterogeneity on histology. No cells showing ductular differentiation or periductal myofibroblast cells. Based on these findings, a diagnosis of high-grade adenocarcinoma was made with possibility of the non-intestinal and non salivary type. Immunohistochemistry was performed with cytokeratin (CK) 7, CK 20, CDX 2 and p 63 (Figure 3). CK7 was diffusely positive in cytoplasm of all tumor cells while CK20 and CDX 2 were diffusely negative. The p 63 immunostain was done, to look for compressed ductular structures having with periductular myoepithelial cells in the periphery, a feature of salivary gland type adenocarcinoma NOS, which was negative. This ruled out the possibility of the same. Extensive imaging studies did not reveal any focus of malignancy elsewhere. There by the diagnosis of high-grade adenocarcinoma- non-intestinal and non salivary type- as suspected in histology was confirmed.



**Figure 2: (A): Histology section from the tumor in scanner of tumor cells separated by fibrous septae admixed with large areas of necrosis within the tumor (Hematoxylin and Eosin; 40X), (B, C): section of tumor cells arranged in back to back arranged glandular, papillary, cord-like and solid pattern (Hematoxylin and Eosin; B-100X, (C) 400X), (D) section of moderately pleomorphic tumor cells, scanty cytoplasm, coarse clumped chromatin, occasional prominent nucleoli and good number of mitotic (Hematoxylin and Eosin; 400X).**



**Figure 3: (A): Tumor cells of diffusely strong cytoplasmic positivity for CK 7 while all tumor cells were negative for (B)CK 20, (C) p 63 and (D) CDX 2 (400X).**

Sinonasal region is a common site of tumors. Primary sinonasal adenocarcinomas of the non-salivary type are per se rare constituting 13% of all sinonasal carcinomas.<sup>1</sup> The malignant glandular neoplasms of the nasal cavity and paranasal sinuses into two main groups: salivary-gland-type and non-salivary-gland-type adenocarcinomas. Non-salivary gland-type adenocarcinomas are further subdivided into intestinal-type adenocarcinomas (ITACs) and non-ITACs.<sup>2</sup> The non-intestinal types are less common than the intestinal type.<sup>3</sup> These adenocarcinomas apparently arise from the surface epithelium of the sinonasal tract. They do not share microscopic appearances with salivary gland-type sinonasal adenocarcinomas or intestinal-type sinonasal adenocarcinomas. Salivary gland type adenocarcinoma NOs was ruled out on the morphology of the slide due to lack of ductular differentiation and absence of p 63 positive periductal myofibroblast cells which is the hallmark diagnostic clue to suspect the same. Moreover, the lack of the cystically dilated spaces and pink cytoplasmic granules also refutes the same.

High-grade non intestinal-type adenocarcinomas are unusual tumors which are more common in males and occur usually in elderly. Clinically they present with nasal obstruction along with swelling/deformity in the face, commonly involving maxillary sinus and nasal cavity.<sup>4</sup> On histomorphology they show various patterns mucinous, apocrine, oncocytic, poorly differentiated and undifferentiated, with glandular being most common.<sup>5</sup> As was seen in this case, they show nuclear pleomorphism and mitoses. As they hold a poor prognosis and manifest varied histomorphology characteristics, they need to be differentiated from the important differential diagnoses. The low-grade non intestinal-type carcinomas also reveal papillary, glandular and tubular patterns but rarely show nuclear pleomorphism. The nuclei are bland with rare mitoses. In low grade type the malignancy is confirmed by the complex infiltrative growth pattern. Currently the

distinction between low and high grade as per world health organization is based on atypia, necrosis and mitosis.<sup>6</sup> High grade type have occasionally been found to have association with *human Papillomavirus* (HPV).<sup>4</sup>

Overall, there is limited literature describing high-grade non intestinal SNACs. Most cases of high grade non-intestinal SNACs have been surgically resected and few cases have received radiation therapy and chemotherapy.<sup>4</sup> To conclude, high grade non-salivary non intestinal tumors of sinonasal region are rare and show heterogeneous morphology overlapping with other entities. These need high index of suspicion, detailed clinic radiological evaluation, accurate histomorphology evaluation and appropriate immunohistochemistry.

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