Indian Journal of Pathology: Research and Practice 8(2)March-April 2019
DOI: http://dx.doi.org/10.21088/ijprp.2278.148X.8219.18

IJPRP

Case Report

Respiratory Epithelial Adenomatoid Hamartoma: An Under-Reported Pathological Entity

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Received on 12.01.2019,

Accepted on 04.02.2019

Abstract

Respiratory epithelial adenomatoid hamartomas (REAHs) are rare, benign proliferations of glands of respiratory tract. These are under diagnosed and pose a challenge while diagnosing other aggressive lesions. We are presenting a case of an elderly male with REAH owing to its rarity.

Keywords: Respiratory Epithelial Adenomatoid Hamartoma; Sinonasal Mass; Glandular Proliferation.

How to cite this article:

Arundhathi S.. Respiratory Epithelial Adenomatoid Hamartoma: An Under-Reported Pathological Entity. Indian J Pathol Res Pract. 2019;8(2):234-237.

Introduction

Respiratory epithelial adenomatoid hamartomas (REAHs) are rare, benign proliferations of glands of respiratory tract predominantly involving sinonasal cavity and nasopharynx [1]. They were first described by Wenig and Heffer in 1995 as abnormal glandular proliferation surrounded by thick basement membrane within respiratory epithelium and not accompanied by atypical or metaplastic changes [2]. They even though are benign, are known to be locally aggressive and should be differentiated from malignant tumors [3]. REAHs are under reported and we are presenting this case as for the same reason.

Case Report

We are presenting a case of 64 year old male who presented with bilateral ethmonasal polyps. His chief complaints were epistaxis with nasal polyps. Patient was a known diabetic and asthmatic. He had sustained stroke two years back. On clinical examination patient had deviated nasal septum with bilateral nasal polyposis and hypertrophy of nasal turbinates. The patient was taken for endoscopy which revealed bilateral polyps adherent to ethmoid orbital wall. Polypectomy was done and sent to Department of Pathology.

The specimen we received consisted of multiple mucosal tissue bits. Microscopic examination of

polypectomy specimen from right ethmonasal cavity showed an inflammatory polyp lined by focally ulcerated respiratory epithelium with focal squamous metaplasia. The subepithelium was edematous with dense mixed inflammatory infilterate with predominance of eosinophils. The submucosa showed dense sclerosis entrapping vascular channels with proliferation of sero-mucinous minor salivary glands.

Microscopy of left ethmonasal polyp showed similar features to right ethmonasal polyp (Fig. 1). But additionally there was proliferation of glands lined by ciliated pseudostratified epithelium with basement membrane thickening (Fig. 2). The cells lining glands were strongly CK7 positive (Fig. 3) and CK20 negative (Fig. 4). The basal cells were positive for p63 (Fig. 5). With this the final diagnosis of REAH in left ethmonasal cavity was confirmed.

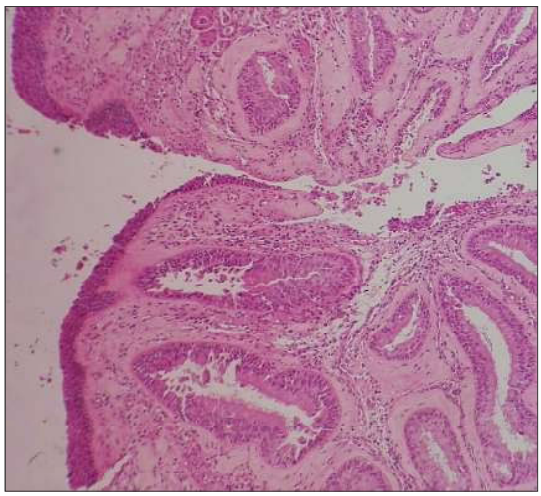

Fig. 1: Ulcerated respiratory epithelium with subepithelial mixed inflammatory infilterate and glandular hyperplasia (H & E, 10x10X)

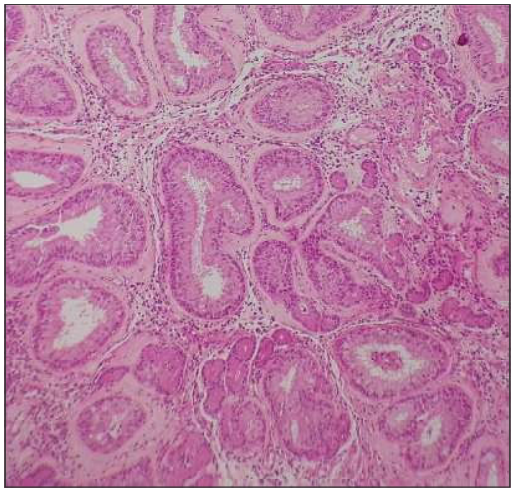

Fig 2: Glands lined by ciliated pseodostratified epithelium with basement membrane thickening and mixed inflammatory infilterate in stroma (H & E, 10x10X)

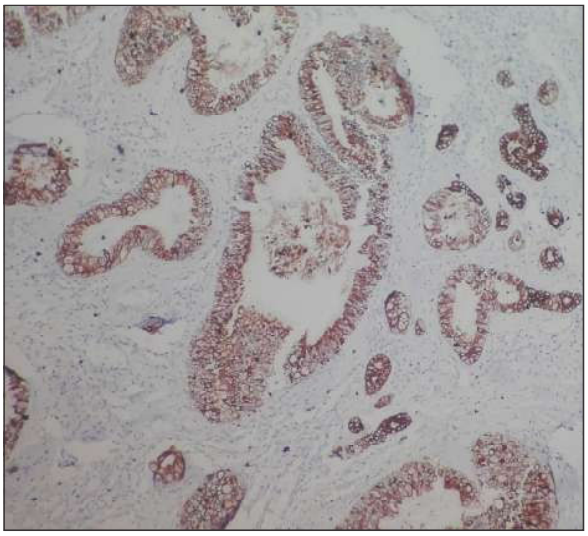

Fig 3: CK7 strongly positive in glandular epithelium

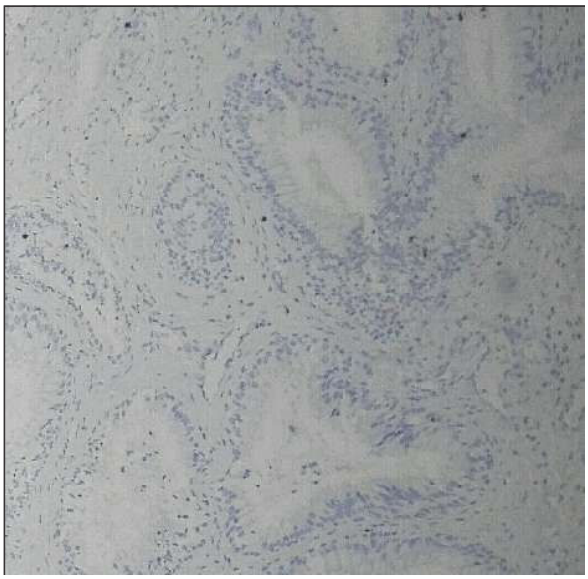

Fig 4: Ck20 negative in glandular epithelium

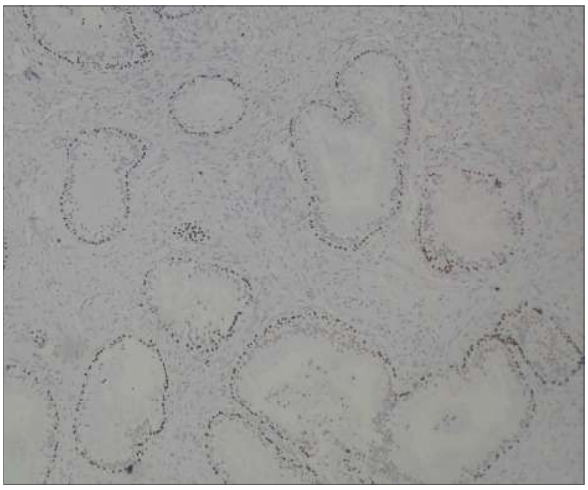

Fig 5: Basal cells showing p63 positivity

Discussion

Hamartomas are malformations characterized by overgrowth of mature cells and tissues that normally occur in affected location. They are self-limiting, non neoplastic lesions but fail to regress spontaneously [4]. REAHs were described first as distinct clinicopathological entity by Wenig and Heffner in 1995 and they are rare, benign glandular proliferations of sinonasal cavity and nasopharynx [5].

REAH is a benign lesion predominantly in men in third to ninth decade of life with male-to- female ratio being 7:1 [6]. The patients with REAH primarily presented with nasal obstruction, nasal congestion, hyposmia or anosmia. Other less common symptoms were headache, rhinorrhoea, facial pressure, postnasal drip, epistaxis, proptosis and ear plugging [7].

REAH was previously described to be commonly originating from nasal cavities (75%) with a predilection for posterior nasal septum. But, further studies by Vira et.al showed that REAH frequently affected sinuses (85%) than nasal cavities (15%) [8]. Recent studies by Lee et al. confirmed that olfactory cleft is the site of origin for isolated RHEA [7]. It is also noted that bilaterality is common among REAHs [9].

REAHs endoscopically appear as exophytic polypoidal masses with tan- white to yellow- pink color with glistening surface and are firmer than sinonasal polyps. They vary in size from a few millimeters to six centimeter in diameter [5].

The etiology of RHEA is still under investigation and it is speculated to be either congenital or as a result of inflammatory process [1]. In a study by Hawley 61% of them were associated with sinonasal polyps [10]. A latest genetic study by Ozolek et al. demonstrated loss of heterozygosity and fractional allelic loss which helped them conclude that REAH is a benign neoplasm rather than a hamartoma [11]. Recent studies put forth that REAH can be a part of hamartoma-adenoma-adenocarcinoma sequence. This was supported by Jo et.al who described 6 cases of low grade nonintestinal adenocarcinoma associated with REAH [12].

Histologically REAH is composed of submucous glandular proliferation of respiratory pseudostratified ciliated columnar epithelium, often with goblet cells. The glands are arranged back to back and are seperated by minimal stroma. The glands are enveloped by thick basement membrane. Stromal hyalinization is characteristic of REAH. Complex glandular growth, cribriform architecture, mitoses and nuclear atypia are absent [9]. Chondro-osseous REAH (COREAH) with chondro- osseous differentiation has been reported in literature [13].

Immunohistochemistry do not have a role in diagnosis of REAH, but plays a potential role in differential diagnosis. Ozolek in 2007 first published immunohistochemical profile and stated that epithelial components were positive for cytokeratin (CK), basal layer was uniformly positive for p63, 34βE12 and Ki-67 and CK20, CDX-2, calponin, S-100, SMA were negative [14].

REAHs are rare, under diagnosed most often and not stated in majority of pathology textbooks. Pathologists and otolaryngologists should consider REAH as a differential when diagnosing sinonasal mass. Recognition of REAH from other more aggressive entities like inverted papilloma and low- grade adenocarcinoma is fundamental for further treatment [4]. We are presenting this case because of its rarity and to add to the existing data and knowledge.

Conclusion

REAHs are rare, under dignosed and under reported benign lesions of sinonasal tract. It poses a challenge and has to be considered as a potential differentials in diagnosing other entities like inverted papilloma and low-grade adenocarcinoma. We presented this case because of its rarity.

References

1. Jivianne T. Lee, Rohit Garg, Joseph Brunworth, David B.Keschne, Lester D. R. Thompson. Am J Rhinol Allergy. 2013;27:322-28.
2. Xing Hua, Xiaoxiao Huang, Zexiao Liao, Qi Xian, Lina Yu. Clinicopathological and EBV analysis of respiratory epithelial adenomatoid hamartoma. Diagnostic Pathology. 2014;9:70-76.
3. Athre R, Ducic Y. Frontal sinus hamartoma. Am J Otolaryngol. 2005;26:419-21.
4. Selcuk Mulazimoglu, Yuce Islamogu, Suha Beton, Hale Kivrak, Serpil Dizbay Sak, Irfan Yorulmaz. Egyptian Journal of Ear, Nose, Throat and Allied Sciences. 2015;16:185-87.
5. Wenig BM and Heffner DK. Respiratory epithelial adenomatoid hamartomas of the sinonasal tract and nasopharynx: A clinicopathologic study of 31 cases. Ann Otol Rhinol Laryngol. 1995;104:639-45.

6. Valeria A. Fitzhugh, Neena Mirani. Head and Neck Pathol. 2008;2:203-08.
7. Lee. J.T, Garg R, Brunworth J, Kreschner D.B, Thompson. L.D.R. Sinonasal respiratory epithelial adenomatoid hamartoma: series of 51 cases and literature review. Am J Rhinol Allergy. 2013;27: 322-28.
8. Vira D, Bhuta S, Wang M.B. Respiratory epithelial adenomatoid hamartomas. The laryngoscope. 2011; 121:2706-09.
9. Alina Anda Nagy, Veronica Trombitas, Diana Vlad, Silviu Albu. Respiratory epithelial adenomatoid hamartoma: a few considerations and a review of literature. Romanian journal of rhinology. 2014;4 (15):135-40.
10. Hawley KA, Pabon S, Hoschar AP, Sindwani R. The presentation and clinical significance of sinonasal respiratory epithelial adenomatoid hamartoma (REAH). Int Forum Allergy Rhinol. 2013;3:248-53.
11. Ozolek JA, Hunt JL. Tumor suppressor gene alterations in respiratory epithelial adenomatoid hamartoma (REAH): comparison to sinonasal adenocarcinoma and inflamed sinonasal mucosa. Am J Surg Pathol. 2006;30(12):1576-80.
12. Jo VY, Mills SE, Cathro HP, et al. Low- grade sinonasal adenocarcinoma: the association with and distinction from respiratory epithelial adenomatoid hamartoma and other glandular lesions. Am J Surg Pathol. 2009;33:401-08.
13. Roffman E, Baredes S, Mirani N. Respiratory epithelial adenomatoid hamartoma chondroosseous respiratory epithelial adenomatoid hamartoma of the sinonasal tract: A case series and literature review. Am J Rhinol. 2006;20:586-90.
14. Ozolek J.A, Barnes L.E, Hunt J.L. Basal/ myoepithelial cells in chronic sinusitis, respiratory epithelial adenomatoid hamartoma, invereted papilloma and intestinal- type and nonintestinal- type sinonasal adenocarcinoma: An immunohistochemical study. Arch Pathol Lab Med. 2007;131(4):530-37.