

Papillary adenoma in the trachea of a wild boar (*Sus scrofa*)

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Received: 04-05-2012, Accepted: 03-07-2012, Published online: 14-01-2013

How to cite this article:

Rajput N, Swamy M and Shrivastav AB (2013) Papillary adenoma in the trachea of a wild boar (*Sus scrofa*), *Vet. World* 6(3): 169-170, doi:10.5455/vetworld.2013.169-170

Abstract

A rare report of papillary adenoma in the trachea of a free-ranging wild boar has been reported in the article. In the case, except for the growth in the trachea, there were no other significant lesions observed in the carcass. Grossly, the adenoma was granular and microscopically, it comprised finger like projections with the features of hyperplastic glandular epithelium and increased mitotic figures. This case is first of its kind and also its occurrence is negligible in other animals. Few cases have been reported in the humans with the history of excessive smoking. Although, adenomas of other organs are common in pigs. However, authors are unaware of previous reports of such case in the animals.

Keywords: papillary adenoma, trachea, wild boar

Introduction

Wild pigs are widely distributed in India. These live in grass or scanty bush jungle, sometimes in forest, after the rains, quite commonly in high crops [8]. Primary tumors of the respiratory tract in animals are relatively uncommon and usually arise from the tissues of either the nasal chambers or the lungs themselves. A rare case of papillary adenoma in the trachea of a wild boar is reported in this note. Adenoma is the benign tumour of glandular epithelium [9]. Tracheal tumours can be divided into two classes, primary tracheal tumours and secondary tracheal tumours. Tracheal tumours that start in the trachea are called primary tracheal tumours. Secondary tracheal tumours are rare that start in another part of body (thyroid gland, lungs, or oesophagus) and spread to the trachea. Squamous cell cancer and adenoid cystic carcinoma are the usually reported tracheal tumours. Examples of secondary tracheal tumours are papillomas, chondroma and haemangioma [1].

Material and Methods

A carcass of adult wild boar was brought for post mortem examination at the Centre for Wildlife Forensic & Health. The carcass was found inside a hollow canal. The condition of carcass was fair with few abrasions on skin coat. Detailed post mortem examination revealed no significant lesions on any visceral organs except haemorrhages on lungs with an irregular growth in the trachea attached to its lumen (Fig 1). The growth was irregular, firm in consistency, covered by an intact mucosa and brownish white in colour. The cut surface revealed granularity with small variably sized compartments. The growth was further processed for histological examination.

Result

Microscopic examination of sections stained with haematoxylin and eosin revealed hyperplastic glandular epithelium cells making papillary projections (Fig 2a and 2b). The surface of the adenoma was covered by



Fig-1. Granular irregular growth attached to the tracheal lumen

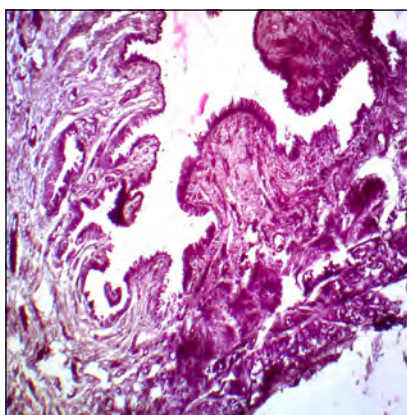


Fig-2a. Papillary projections of the epithelium (Haematoxylin & Eosin, 40X)

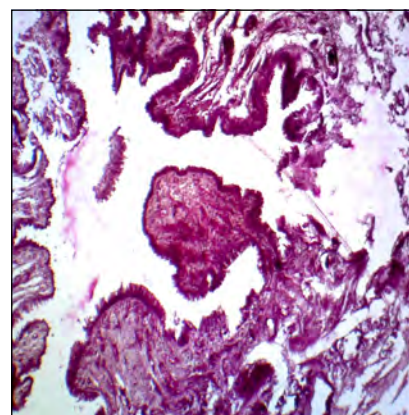


Fig-2b. Papillary projections of the epithelium (Haematoxylin & Eosin, 40X)

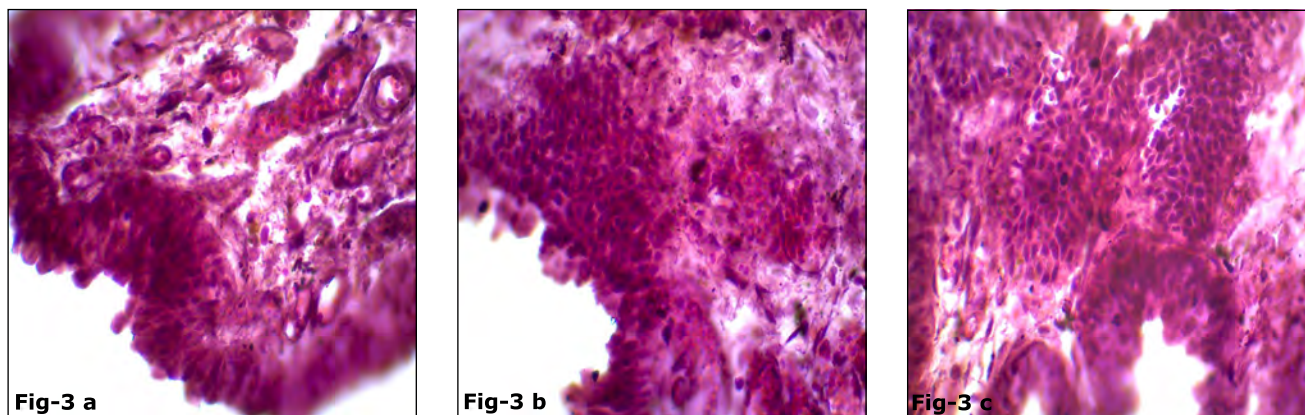


Fig-3 a, b and c. Hyperplastic glandular epithelial cells showing hyperchromasia and infiltration of plasma cells and fibrous tissue (Haematoxylin & Eosin, 400X)

pseudostratified ciliated columnar epithelium. At a few places increased mitotic figures, hyperchromasia and pleomorphism of the cells were also observed (Fig 3a, b and c). Infiltration of plasma cells and proliferation of supporting fibrous tissues were also noticed. On the Basis of histological appearance the case was diagnosed as papillary adenoma of the trachea.

Discussion

Perusal of literature revealed that incidence of papillary adenoma is very rare (less than 1%) and we did not come across any report of papillary adenoma in animals. Unlike humans, papillary adenoma has been diagnosed in the trachea of humans with the history of smoking, though rare [4]. However, Mohr et al [6] experimentally induced papillomas in the larynx, trachea, and stem bronchi of common European hamsters, captured from the wild. They subcutaneously treated the animals once weekly for life with *N*-diethylnitrosamine. All animals developed tumours in the respiratory system. However, papillary adenomas of the lungs are relatively common and have been reported in the lungs of some species like dogs and cattle showing well-circumscribed lesions composed of distinctive papillae covered by uniform cuboidal to columnar cells with eosinophilic granular cytoplasm and without nuclear atypia [1]. Relevant literature shows incidental finding of chondroma in the trachea of unthrifty Poland China pig, which was composed of hyaline cartilage with architectural irregularity. The workers also reported papillomas in the distal part of penis and mucocutaneous junction in mouth [3]. There is negligible report available on the tracheal tumours in other wild species. Drew et al [2] reported chondroma in the trachea of three adult ball pythons (one male, two females).

In general, adenomas of other organs are relatively common in pigs. Hepatocholangioadenoma in a Landrace sow [7] and uterine adenocarcinoma, a hepatocellular adenoma, and nodular hyperplasias in spleen and adrenal glands in a 10-year-old, female, pot-bellied pig, *Sus scrofa*, [5] have been reported.

Aetiology of tumours is vague and its occurrence depends on the exciting factors. Human tracheal adenomas are usually resulting of excessive smoking leading to irritation of tracheal tissues by carcinogens. In the case of wild pig, aetiology is uncertain and it may be due to accidental entry of foreign/toxic particles through respiration, if animal is living near industrial areas having annoying air particles. Lack of reporting of such kind of neoplasms in the wild pigs may be because the carcasses are seldom found in fresh condition and many a time, trachea is overlooked during necropsy. Here, the carcass was good in body condition and size of adenoma was not enough to cause respiratory obstruction. However, dyspnoea may be the reason of decreased efficacy and reduced chances of survival in the wild. As papillary adenoma has not been reported in pigs, hence, this report might be considered the first of its kind.

References

1. Prater, S.H. (2005). *The book of Indian Animals*. 3rd edition. Oxford University Press. p 299.
2. Vegad, J.L. (2008). *A textbook of general veterinary pathology*. 2nd edition. International Book Distributing Co. p 379.
3. Baba, A.I. and C. Catoi (2007). *Comparative oncology*. 2nd edition. Romanian Academy Ed. p 125.
4. Hegg C.A., A. Flint and G. Singh (1992). Papillary adenoma of the lung. *Am J Clin Pathol*. 97(3):393-7.
5. Mohr, U., J. Althoff and N. Page (1972). Tumors of the respiratory system induced in the common European hamster by *N*-Diethylnitrosamine. *J Natl Cancer Inst*. 49 (2): 595-597.
6. Fisher, L.F. and H.J. Olander (1978). Spontaneous neoplasms of pigs - A study of 31 cases. *J Comp Pathol*. 88 (4):505-517.
7. Drew, M.L., D.N. Phalen, B.R. Berridge, T.L. Johnson, D. Bouley, B.R. Weeks, H.A. Miller and M.A. Walker (1999). Partial tracheal obstruction due to chondromas in ball pythons (*Python regius*). *J Zoo Wildl Med*. 30(1):151-157.
8. Ohfuji S., M. Kosuda and T. Matsui (1992). Hepatocholangioadenoma in a pig. *J Comp Pathol*. 106 (1): 89-92.
9. Kleinschmidt S., C. Puff and W. Baumgartner (2006). Metastasizing oral squamous cell carcinoma in an aged pig. *Vet Pathol*. 43:569-573.
