

RESEARCH REGARDING THE HISTOSTRUCTURE OF THE NASAL CONCHA ON BIRDS ANTIGENICALLY STIMULATED

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Abstract

Rostral nasal concha presents stratified squamous cornified epithelium. It consists of a basal cell layer cube, slightly irregular. It goes to the surface of cell columns perpendicular to the basal layer. The skeleton is composed of hyaline cartilage cones and lamina propria contains numerous blood vessels. Middle nasal concha is located in the respiratory region of the nasal cavity. Presents a hyaline cartilaginous skeleton, bounded by a thickened pericondru. It is covered with a respiratory type mucosa and with ciliated columnar pseudostratified epithelium with goblet cells. In the structure of the alveolar mucosa lists numerous large aspect mucous glands that open directly to the surface epithelium. Goblet cells are rare and their function is taken over by alveolar glands. In the conjunctive space between glands and basement membranes we find limphoid cells nucleis represented by: lymphocytes, plasma cells and macrophages.

Keywords: alveolar glands, middle nasal concha, rostral nasal concha.

INTRODUCTION

The nose cone of a bird shows a cartilaginous skeleton. Hyaline cartilage type is defined by an obvious pericondru. The mucosa that covers the nasal concha has an pseudostratified columnar ciliated epithelium. In the histological sections attention we can easily notice the abundance of the simple or compund alveolar tubular glands that open directly to the surface epithelium.

MATERIALS AND METHODS

Research has been conducted on birds, antigenically stimulated, normally developed, clinically healthy. Fragment harvested were processed as usual histological techniques and stained with Goldner methods - Szekelly, Mucicarmin Mayer, trichrome Gomorrhah, PAS ,Orceina, Alcian Blue.

RESULTS AND CONCLUSION

Rostral nasal concha presents stratified squamous cornified epithelium (Fig. 1). It consists of a basal cell layer cube, slightly irregular (Bacha, 2000). It goes to the surface of cell columns perpendicular to

the basal layer. The skeleton is composed of hyaline cartilage cones and lamina propria contains numerous blood vessels. Middle nasal concha is located in the respiratory region of the nasal cavity (Cornila, 2001)). Presents a hyaline cartilaginous skeleton, bounded by a thickened pericondru. It is covered with a respiratory type mucosa and with ciliated columnar pseudostratified epithelium with goblet cells. In the structure of the alveolar mucosa lists numerous large aspect mucous glands that open directly to the surface epithelium. Goblet cells are rare and their function is taken over by alveolar glands. In the conjunctive space between glands and basement membranes we find limphoid cells nucleis represented by: lymphocytes, plasma cells and macrophages (Fig. 2).

Lamina propria or chorion comprises a tissue rich in collagen and elastic fibers, evenly dispersed lymphoid cells, numerous irregular blood spaces and nerve fibers. After antigenic stimulation, the number of lymphoid cells increases the tendency to organize the nodules (Brandtzaeg, 2004).

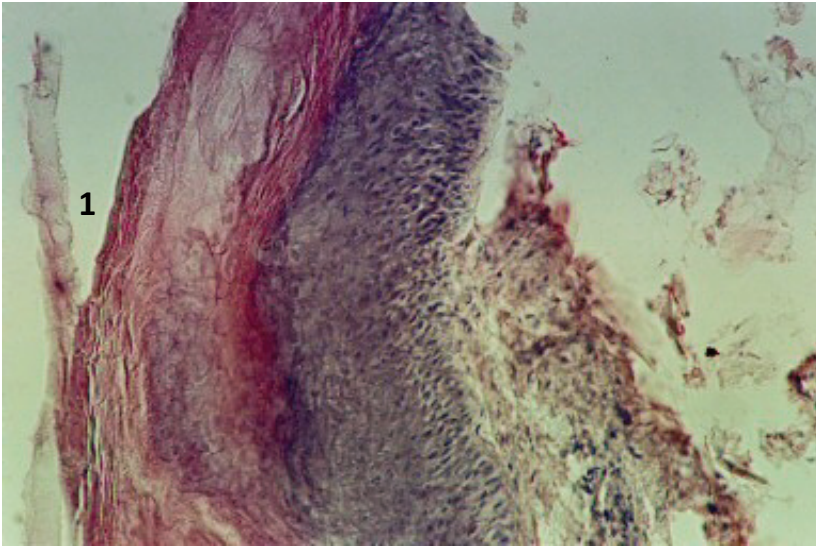


Fig.1 Nasal concha (vestibular mucosa of the nostrils)-Roackin inoculated + Sn (Cluj) ob. 20 x 4, col. H.E;1- epithelium in the vestibular region, pronounced cornification.

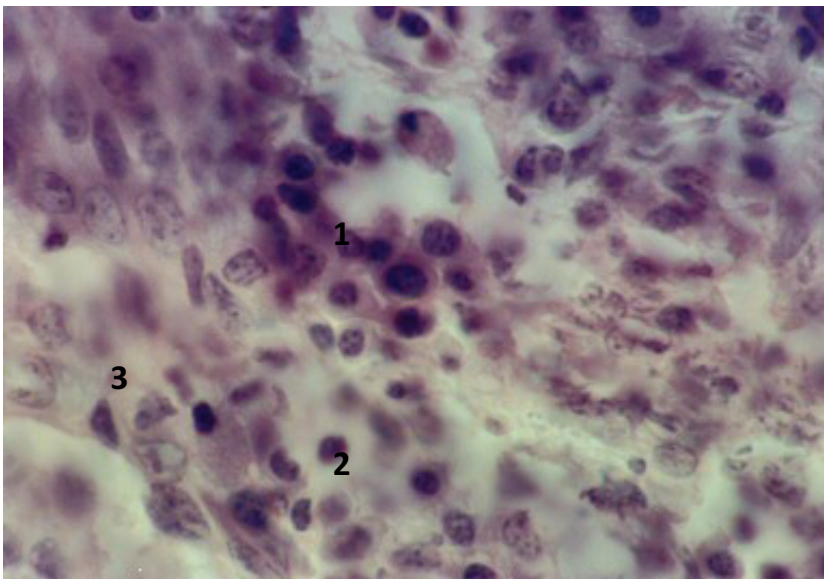


Fig. 2. Nasal concha - inoculated with vaccine Roakin + Sn (Cluj)ob.100x4
1- macrophages; 2-plasma cells;3-lymphocyte.

Mucous cells have cytoplasm and a basal located nucleus flattened areola. Mucous acini wait longer than the basal membrane of the epithelium reaching the lamina

propria.In the connective tissue adjacent membrane can be observed, plasma, lymphocytes,fibroblasts(Fig.3,11,12). The objective 40 is observed influx of

lymphocytes to the surface epithelium. Their movement is achieved by connective

spaces of acini(Fig.4). Some of these cells tends to move toward the lumen of acini.

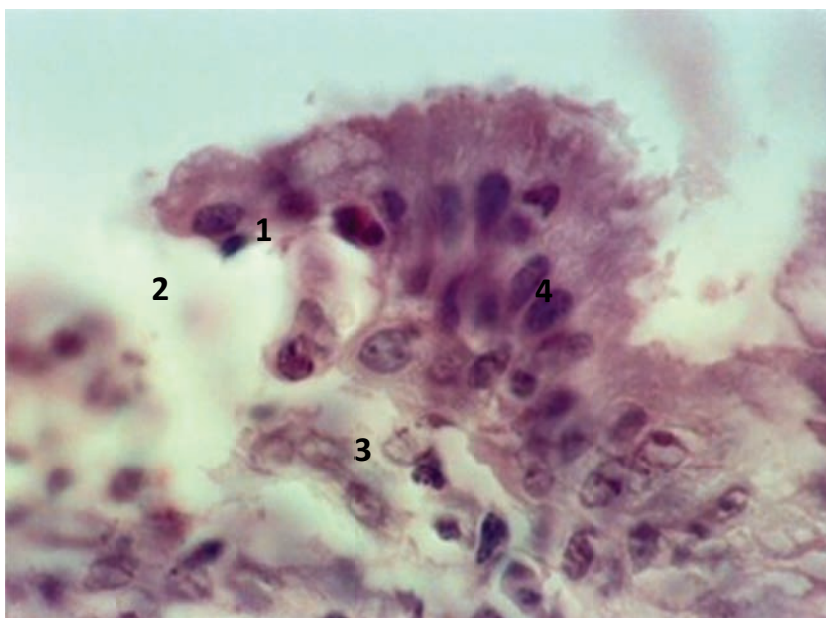


Fig.3 Sub- and intraepithelial lymphoid cells (inoculated with vaccine Roakin + Sn, Cluj);ob.40x4,col.H.E;1-lymphocytes;2-macrophage;3-plasmacells; 4-epithelial cell.

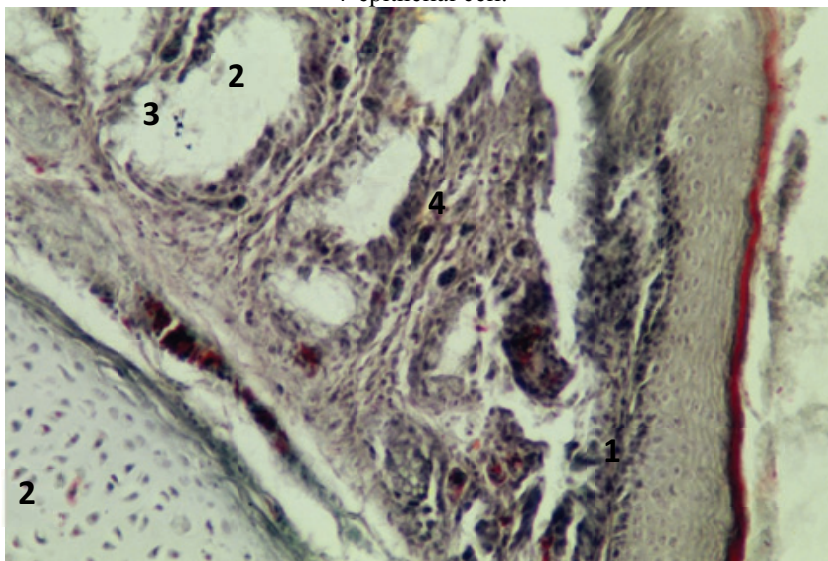


Fig.4 Nasal Concha,ob. 20x4 Goldner Szekeley trichromic coloration,Vaccine Avipestisota;1-slightly conficated vestibular mucosa type;2 - cartilage 3 - buccal mucous glands; 4 - lymphoid infiltrate organizational trend.

It is noted striking development of tubulo-acinar glands, glands that open clear appearance with a short neck at the surface of the olfactory epithelium(Maina,2003). They present the a single layer of flattened

cells. Cell nucleus is flattened and placed on top of the base cells.Cytoplasm is areolar and contains small amounts of secretory material. Also small amounts can also be seen in the gland lumen.



Fig.5 Nasal Concha ob. 10 x 4col Orceinvaccinated with Avipestisota; 1-elastic fibers;2-elastic fibers in connective tissue adjacent concha; 3-cartilage; 4-pericondru;5-lamina own blood vessels are observed and infiltrated lymphocytes;6-densification conjunctive.

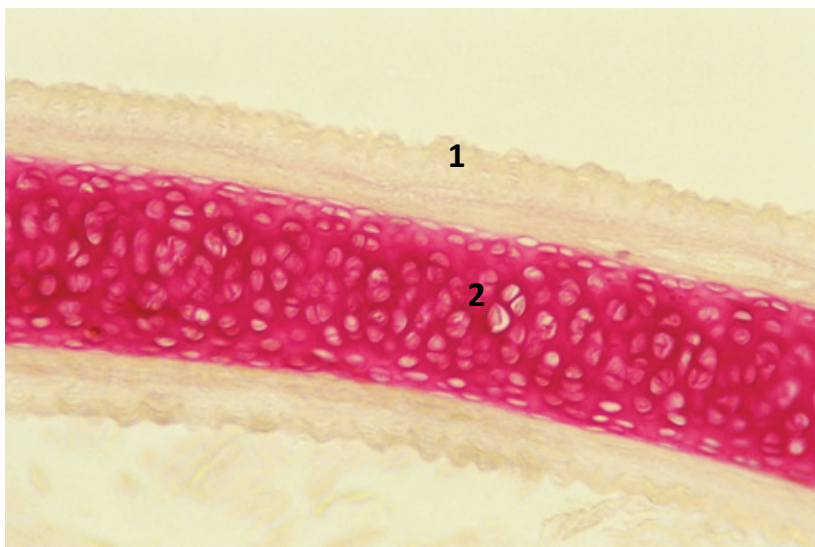


Fig.6 Nasal concha. 10 x 4col. mucicarmin Mayer witness - overview
1-Pericondru; 2-cartilage with axial and coronal isogenic groups.

In the lamina propria can observe lymphoid elements, numerous irregular blood spaces and olfactory nerve fibers, fine fibers of the trigeminal nerve pass between them, ending the three nerve endings in the olfactory epithelium (Radu, 2010).

Epithelium has a thickness of 20-30 micrometers, and shows obvious cilia. Epithelial cell nuclei are arranged at different levels, which creates the appearance of pseudostratification.

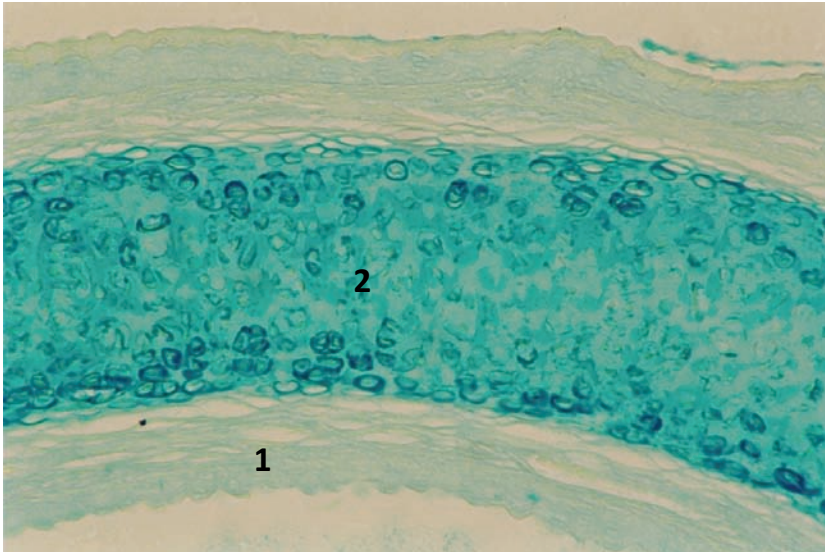


Fig.7 Nasal Concha-ob. 20 x 4,col. Alciane blue-whitness;
1 - pericondru, 2 - hyaline cartilage.

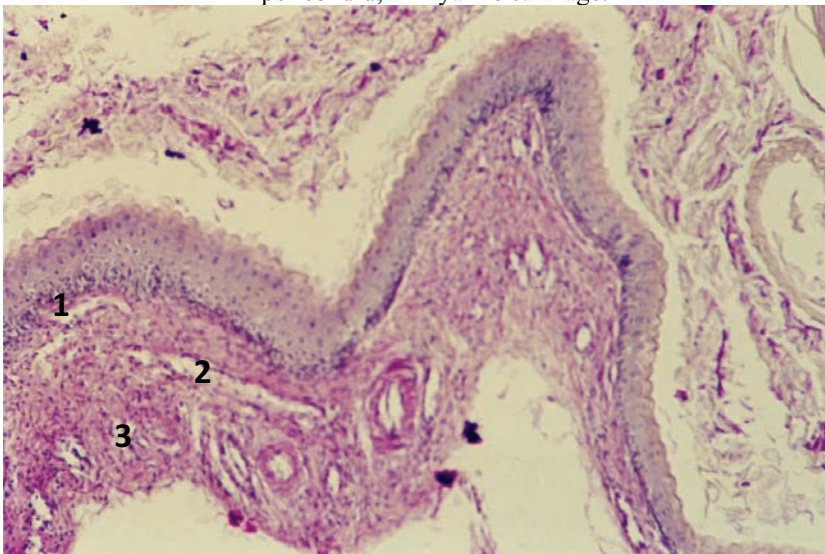


Fig.8 Nasal Concha ob. 10 x 4 col. PAS vaccinated with Avipestisota
limfoid infiltrate the lamina propria and numerous vessels;1-vein cross-sectional;
2-longitudinally sectioned capillaries; 3-transected capillary.

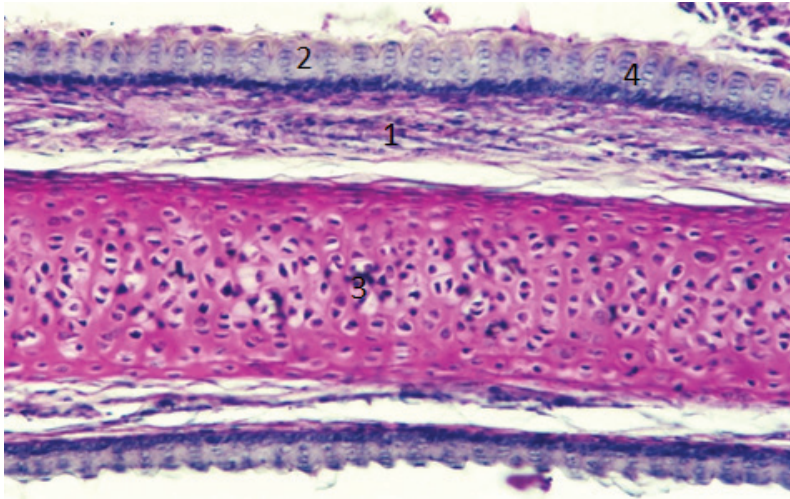


Fig.9 Nasal concha, ob. 10 x 4 col. PAS, vaccinated with Avipestisota drinkable water adminstrate; 1-lymphoid infiltrate in the lamina propria; 2-stratified epithelial cells arranged in vertical columns; 3-cartilage;

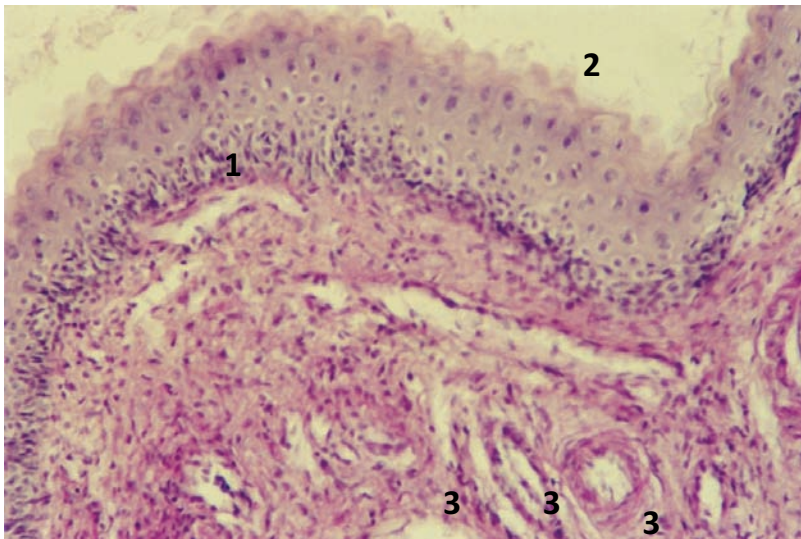


Fig.10 Nasal Concha ob. 20 x 4, col. PAS, vaccinated with Avipestisota. 1-dense lymphoid population near the epithelial basement membrane of the lymphocytes to penetrate the superficial layers of the epithelium, 2 –vestibular cornet mucosa type; 3 - blood vessels.

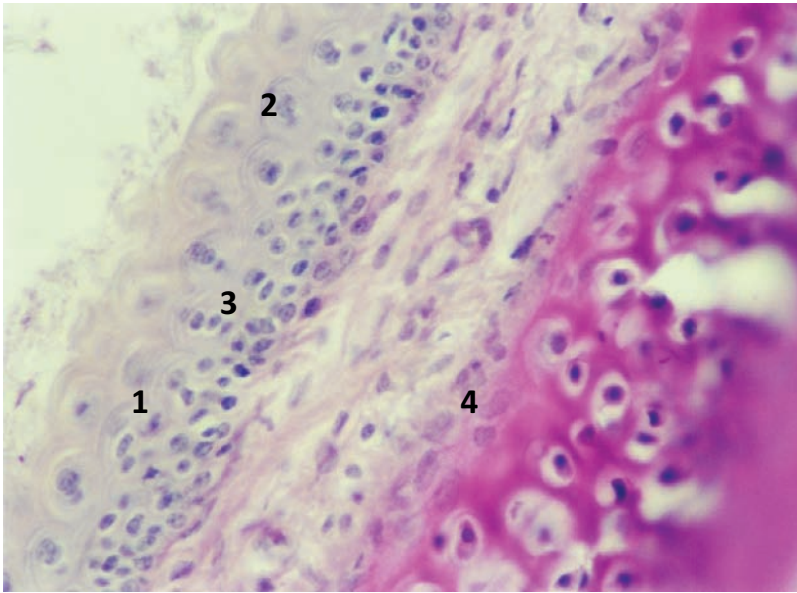


Fig11.Nasal Concha,ob. 40 x 4,col. PAS,vaccinated with Avipestisota
Invasion limfoplasmacitare intraepithelial cells and macrophage type
1 - lymphocyte, 2 - plasma cells 3 - macrophage, 4 - PAS positive reaction
in the cartilage.

With the objective of 40 and 100 in the vicinity of the basement membrane can be observed. Near the basement membrane is observed in the connective tissue between the acini large

polyhedral cells with slightly uniform circular core that can be interpreted as macrophages(Nganpiep,2002).

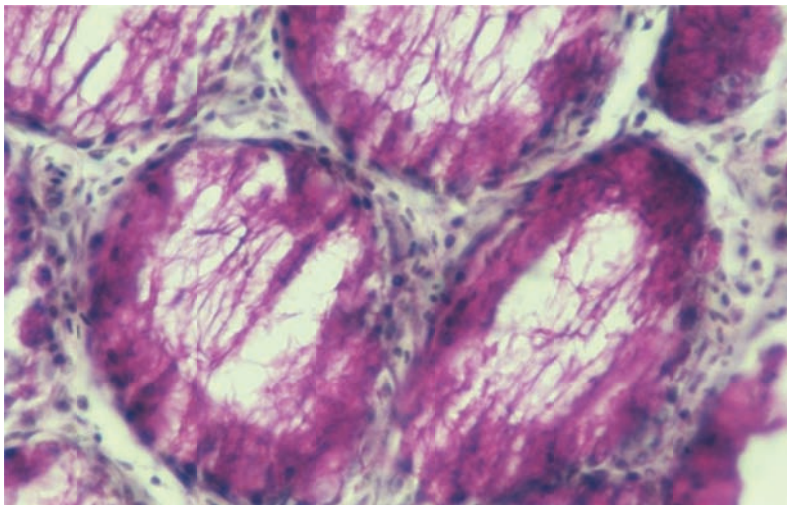


Fig. 12 Nasal Concha ,ob. 40 x 4,col. PAS vaccinated with Avipestisota
La Sota strain limfoplasmocitar periglandular infiltrated the mucosal glands.

CONCLUSION

Rostral nasal concha presents stratified squamous cornified epithelium. It consists of a basal cell layer cube, slightly irregular. It goes to the surface of cell columns perpendicular to the basal layer.

Middle nasal concha is located in the respiratory region of the nasal cavity. Presents a hyaline cartilaginous skeleton, bounded by at hickened pericondru (Fig.5,6,7,9).

Goblet cells are rare and their function is taken over by alveolar glands.

After antigenic stimulation, the number of lymphoid cells increases the tendency to organize the node(Phalipon,2002). Mucous cells have cytoplasm and a nucleus flattened areola basal located. Mucous acini wait longer than the basal membrane of the epithelium reaching the lamina propria. Epithelium has a thickness of 20-30 micrometers, and shows obvious cilia. Epithelial cell nuclei are arranged at different levels, which creates the appearance of pseudostratificare.

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