

**COMPARATIVE STUDY ON ANATOMICAL AND HISTOLOGICAL
STRUCTURES OF SYRINX ON MALE AND FEMALE DUCK**

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ABSTRACT

The syrinx of duck is asymmetrical in the male forming a large dilated box and presence bulla tympaniformis in male duck but in the adult female has no tympanic bulla, it located at the bifurcation of the trachea in the thoracic cavity. Histological study revealed that the syrinx lined by ciliated pseudostratified epithelium with goblet cells

INTRODUCTION

Respiratory organs of birds differ from those of mammals in many features, which are, the tracheal cartilage formed complete rings in birds, which overlapped with adjacent ring [1]. The voice organ in birds are the syrinx that located at the bifurcation of trachea [2], air inspired during respiration passes from the nasal cavity to the larynx and continuous via the trachea and enters the syrinx and bronchi. Some birds vocalize all year long while others call only during the mating or during migration [3]. In domestic chickens last portion of trachea or beginning of bronchus or both participate in the formation of syrinx, that possess two membrane, tympaniformeslateralis and medialis for producing sounds. These membrane are activated by the intrinsic and extrinsic muscle [4]. To date, the anatomical and histological structure of Iraqi duck has not been described in details, therefore the determination of the structures of syrinx in male and females ducks, are the aims of the present study.

Material and methods

Ten (5 male and 5 female) adult duck weighting 3500 ± 50.60 gram were obtained from slaughterhouse. After opening the body cavity the topographic position of synirx was observed. For histological investigation the tissue was fixed in 10% buffered neutral formalin for 48-72 h. After routine histological process, paraffin blocks are prepared and 6-8 μ m tissue sections were cut and stained with Hematoxylin and eosin stains.

Result and discussions

The syringes were observed in male and females ducks lies ventral to esophagus at the thoracic cavity, and between the caudal end of the trachea and the beginning of the primary

brochi. These locations the same (3) in bulbul while differs from Turkey that observed ventral to esophagus and at base of the hearts (5) also differ in Pigeon that observed to lie at the dorsal side of the glandular stomach , ventrally of the esophagus and between the terminal part of the trachea and *bronchus primaries* (6). The results of present study also appeared that syrinx of male duck having bulla tympaniformis that observed as swelling in syrinx, this was don't observed in female duck syrinx (Figures, 1,2), these structures was differed from turkeys syrinx structures that having tympanum in male and females (5). In addition to that male duck structures was similar to many birds (7,8,9) .



Figures (1) shows syrinx of female duck don't have bulla tympaniformis



Figure (2) shows syrinx of male duck that have bulla tympaniformis as swelling .

In histological section, the tunica mucosa of the syrinx was lined by ciliated pseudostratified epithelium, the lamina propria and submucosa contained loose connective tissue with blood vessels and nerves. In the deep portions of lamina propria – submucosa there are large amount of elastic fibers longitudinally oriented between the hyaline cartilage

Figure (3). These histological structures was similar to chicken(10) pigeon (11,12) and ostrich(13)

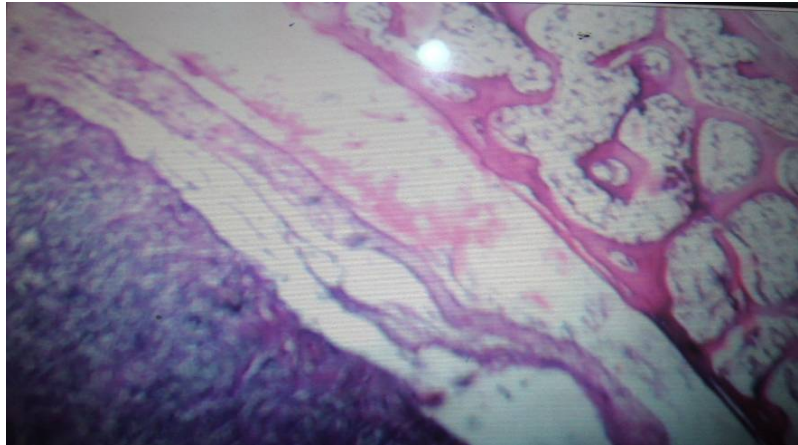


Figure (3) shows the deep structures of syrinx that supported by elastic tissue and hyaline cartilages H&E 40X.

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