MACRO ANATOMICAL INVESTIGATION ON THE BRONCHIAL TREE AND LUNG OF THE CAT

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Introduction

The studies on lobation and segmentation of the lung are performed both on the domestic mammals (2, 3, 9) and laboratory animals (4, 9).

This study was carried out because of lack of literature dealing with the bronchial tree of the cat.

Material and Method

18 adult native cats of 2950 gr. were used in this study, without considering the difference of sex. After having been killed by injecting high dose cloralhydrat solution intraperitoneally, the chests of the animals were opened. From larynx on, the lungs together with trachea were taken by dissection. Takilon containing corrosion prepare (6, 7) were prepared from eight lungs. The remaining ten lungs were saved in water with formaldehyde solution of 10% later to be examined macro-anatomically. Two of the lungs were reserved for photographing and control, and bronchial segmentations of the other lungs were uncovered through dissection.

The anatomical namings in this study were based on "Nomina Anatomica Veterinaria" (5).

Results

Trachea: The average length of trachea is determined to be 8.8 cm and the number of the segments to be 39-43. The segments about 2 cm above bifurcation tracheae are "C" shaped and the others are "U" shaped.

Pulmo dexter (Figure 1.2): Pulmo dexter consists of four lobes; lobus cranialis, lobus medius, lobus caudalis and lobus accessorius. It is determined that fissura interlobaris cranialis divided lobus cranialis and lobus medius from each other and fissura interlobaris caudalis divided lobus medius and lobus caudalis from each other completely. Including lobus accessorius, these four lobes are determined to be bound to one another only by blood-vessels and bronch.

Pulmo sinister (Figure 1.2): Pulmo sinister consist of three lobes; lobus cranialis, lobus medius and lobus caudalis. Fissura interlobaris cranialis begins at the middle of incisura cardiaca and, passing in the direction of cranio-dorsal, ends at the middle of the distance between its beginning and margo obtusus. Fissura interlobaris caudalis is determined to divide lobus medius and lobus caudalis from each other completely.

Branchers of Bronchus Principalis Dexter (Figure 3): It was observed that bronchus principalis dexter gives off bronchus lobaris cranialis at an 66 angle and with 4.6 mm. diameter at the level of bifurcation trachea and in cranio-ventral direction 6.2 mm. after this point it gives off bronchus lobaris medius in caudo-lateral direction at 56 angle and with 3.6 mm. diameter. 5.2 mm. after the point where bronchus lobaris medius departs it gives off bronchus lobaris accessorius at 43 angle and with 2.4 mm. diameter in caudo-medial direction. It was determined that bronchus principalis dexter, after giving off the bronchus lobaris accessorius, continues in caudal direction with 4.8 mm. diameter and ends as bronchus lobaris caudalis.

The number of the segmentalises given by the bronchus lobaris cranialis, medius, caudalis and accessorius and, their distance to the origine they originate from is demonstrated in Table 1.
Figure 1. The lung of the cat, dorsal view.

Figure 2. The lung of the cat, ventral view.
Figure 3. The bronchial tree of the cat, dorsal view.
I- Bronchus principalis sinister, II- Bronchus principalis dexter.

Branches of bronchus principalis sinister (Figure 3): After giving off the common origin of bronchus lobaris cranialis and medius 6.2 mm. after its own origin, in lateral direction and at 4.3 mm diameter, bronchus principalis sinister continues in caudal direction as bronchus lobaris caudalis.

The common origin, after continuing 1.2 mm. in caudo-lateral direction with 66 angle and 4 mm. diameter, gives off bronchus lobaris cranialis. The common origin after giving off bronchus lobaris cranialis continues as bronchus lobaris medius with 55 angle and 2 mm. diameter in caudo-lateral direction. It was determined that bronchus lobaris cranialis, 1.4 mm. after the point where it departs from bronchus lobaris medius, continues in cranio-lateral direction.
### The branches

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The branches given off by the bronchus lobarises that originate from bronchus lobarises that originate from bronchus principalis sinister are demonstrated in Table 2.

### Discussion

Crouch, J.E. (2) reported that trachea segments are "C" shaped and, Chiasson, R.B. (1) reported that they are "U" shaped. In this study it is determined that the segments begin 2 cm. above bifurcatio tracheales are "C" shaped and the segments between this point and bifurcatio tracheales are "U" shaped.
In literature (9) it is reported that in the pulmo dexter of guinea-pig lobus cranialis, lobus medius and lobus caudalis are completely devided from one another by fissura inter lobaris cranialis and caudalis, but in rat the dorsal tips of this three lobes are reported to have a small connection.

In the study, however, lobus cranialis, medius and caudalis of pulmo dexter are determined to be completely delivered from one another as they are in guinea-pig.

It is reported that, although fissura interlobaris cranialis in pulmo sinister of guinea-pig doesn't continue until margo obtusus, fissura interlobaris caudalis continues until margo obtusus (9).

In our study the distance between the fissura in cat pulmo sinister and margo obtusus is determined to be same as that of in guinea-pig.

The bronchus lobaris cranialis and bronchus lobaris medius in cat are determined to originate from bronchus principalis sinister with same origin as they are in guinea-pig (9).
As a conclusion of this study, regarding the outside shape and bronchus lobarises, the cat lung is determined to be similar in general to that of the guinea-pig.

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