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Macro anatomical study of appendicular skeleton of arm region of domestic duck (*Anas platyrhynchos domesticus*)

A Deka, Kabita Sarma and M Talukdar

Abstract

The present study was conducted on one pair of humerus. Humerus composed of two extremities and shaft. The two extremities were proximal and distal. The proximal extremities contained head, deltoid crest, medial tubercle, lateral tubercle and pneumatic foramen. The head was oval in shape. Deltoid crest was situated laterally and curved in backward direction. A large pneumatic foramen was situated immediately below the medial aspect of medial tubercle. Distal extremities contained medial and lateral condyle. Medial condyle was larger than lateral and it was traversed by grooved. The shaft consists of four surface viz., lateral, medial, cranial and caudal. Lateral surface was smooth and concave whereas medial surface was smooth and convex. The cranial surface was smooth and convex. The caudal surface was wide and concave above and convex below.

Keywords: Appendicular, skeleton, arm, domestic, duck

Introduction

The duck population of India is about 25.54million (Population Division of the Department of Economic and Social Affairs of the United Nations Secretariat, 2014). Assam possesses the population with about 8.4 million (Basic Animal Husbandry Statistics, 2014) [1]. As such Assam is one of the major duck rearing state in India. Assam, one of the states in the North East and it possess second position in the Indian population (Islam *et al.*, 2007) [4]. Humerus is a strong, largely pneumatic, tubular bone of duck. It maintains the balanced of the birds. This long bone has shaft and proximal as well as distal extremities. Since there is very scanty literature on the detailed anatomy of femur of domestic duck of Assam. Therefore, being a local variety of Assam the present study was designed to establish gross anatomical norms on the Humerus of domestic ducks of Assam.

Materials and Methods

The current study was conducted on one pair Humerus of a domestic duck (*Anas platyrhynchos domesticus*) of Assam. After slaughter, the skeleton of the duck was processed as per the method of Young (1980). The study period of present investigation was one month. Then the humerus was removed and gross anatomical studies were made on it.

Results and Discussions

The present study was conducted on one pair of humerus. The Humerus was large, strong, tubular and pneumatic bone. This finding was in accordance with the finding of Nickel *et al.*, (1977) [5] in fowl and Pop and Pentea (2007) in ostrich. Humerus composed of two extremities and shaft. Similar observations were reported by Ali *et al.*, (2016) [6] in avian. The two extremities were proximal and distal. The proximal extremities contained head, deltoid crest or pectoral crest, medial tubercle, lateral tubercle and pneumatic foramen (Fig.1). These findings were in agreement with the findings of Chamberlain (1943) [2] in chicken and Smith and Smith (1992) in great horn owl. The head was oval in shape. Deltoid crest was situated laterally and curved in backward direction. A large pneumatic foramen was situated immediately below the medial aspect of medial tubercle. The pneumatic foramen was present for the passes of the clavicular air sac. Similar finding was reported that by Feduccia (1975) [3] in Avian. Distal extremities contained medial and lateral condyle (Fig.2). Medial condyle was larger than lateral and it was traversed by grooved. The shaft consists of four surface viz., lateral, medial,

Cranial and caudal. Lateral surface was smooth and concave whereas medial surface was smooth and convex. The cranial surface was smooth and convex. The caudal surface was wide and concave above and convex below.

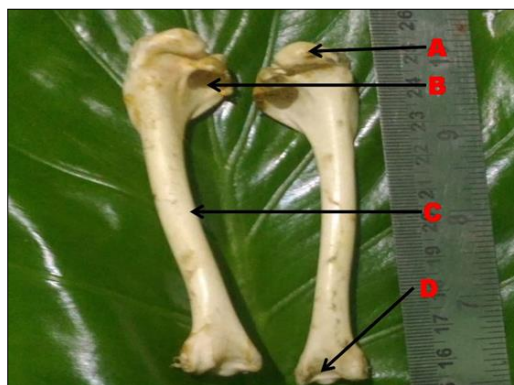


Fig 1: Photograph showing the head (A), pneumatic foramen (B), caudal surface (C) and olecranon fossa (D) of humerus of domestic duck (*Anas platyrhynchos domesticus*) of Assam.

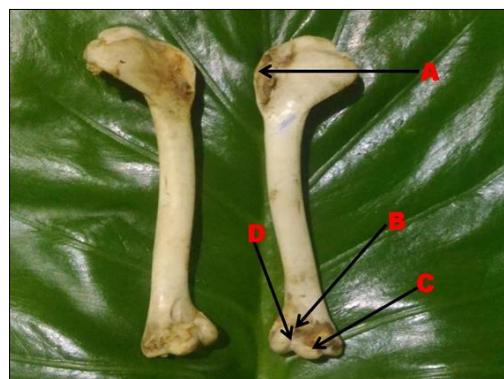


Fig 2: Photograph showing the deltoid crest (A), Radial fossa (B), Medial condyle © and inter condyloid groove (D) of domestic duck (*Anas platyrhynchos domesticus*) of Assam

The length of the humerus, diameter of shaft of the humerus, diameter of the head of the head of humerus and length of the deltoid crest were 9.6cm, 2.6cm, 2.5cm and 2.4cm, respectively (Table.1).

Table 1: Measurement of Humerus

Parameter	Measurement
Length of the Humerus	9.6cm
Diameter of shaft of Humerus	2.6cm
Diameter of the head of the Humerus	2.5cm
Length of the deltoid crest	2.4cm

Summary and conclusion

The proximal extremities of humerus of domestic duck of Assam composed of oval shaped head, deltoid crest, and pneumatic foramen. The shaft of the humerus of domestic duck of Assam consists of four surface viz., lateral, medial, cranial and caudal. Distal extremities contained medial and lateral condyle. Medial condyle was larger than lateral and it was traversed by grooved. These studies will help poultry scientist for effective production and disease control regime.

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References

1. Basic Animal Husbandry and Fisheries Statistics. Ministry of Agricultural, Department of Animal Husbandry, Dairying and Fisheries, Krishi Bhawan, New Delhi, AHS Series-15, 2014.
2. Chamberlain FW. Atlas of avian anatomy. East Lansing, Michigan, Michigan State College, Agricultural Experiment Station, 1943, 1797.
3. Feduccia A. Aves Osteology. Sisson and Grossman’s The anatomy of the domestic animals. Fifth Edn. W. B. Saunders Company, 1975, 1796.
4. Islam R, Mahanta JD, Barua N, Zaman G. Duck farming in North-Eastern India (Assam). World’s poultry science Journal. 2007; 58(4):567-572.
5. Nickel R, Schummer A, Seiferle E. Anatomy of the domestic birds. Verlag Paul Parey, Berlin, Hamburg, 1977, 14.
6. Ali S, Nasr MA, Eresha A M. Macro and micro architecture of the wing in three different avian habitats. Alexandria Journal of Veterinary Science. 2016; 48(2):134-142.
7. Papia Khatun, Ziaul Haque, Shonkor Kumar Das. Histological examination of testicular cell development in khaki Campbell ducklings (*Anas Platyrhynchos Domesticus*). International Journal of Biology Research. 2019; 4(1):55-57
8. Smith BJ, Smith SA. The humeroscapular bone of the great horn owl (*Bubo virginianus*) and other raptors. Anatomy Histology Embryology. 1999; 21(1):32-9.