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KB Dev Choudhury
Assistant Professor, Department of Veterinary Anatomy and Histology, College of Veterinary Science, AAU, Khanapara, Guwahati, Assam, India

A Deka
Assistant Professor, Department of Veterinary Anatomy and Histology, College of Veterinary Science, AAU, Khanapara, Guwahati, Assam, India

J Rajkhowa
Assistant Professor, Department of Veterinary Anatomy and Histology, College of Veterinary Science, AAU, Khanapara, Guwahati, Assam, India

S Sinha
Assistant Professor, Department of Veterinary Anatomy and Histology, College of Veterinary Science, AAU, Khanapara, Guwahati, Assam, India

J Kachari
Assistant Professor, Department of Veterinary Surgery & Radiology, College of Veterinary Science, AAU, Khanapara, Guwahati, Assam, India

Corresponding Author:
KB Dev Choudhury
Department of Veterinary Anatomy and Histology
College of Veterinary Science, AAU, Khanapara, Guwahati, Assam, India

Comparative morphological studies on appendicular skeleton of arm of Asian palm civet (*Paradoxurus hermaphroditus*) with domestic cat

KB Dev Choudhury, A Deka, J Rajkhowa, S Sinha and J Kachari

Abstract
The study was conducted on two adult Civet and domestic cat with an aim to study the gross anatomical features of the appendicular skeleton of arm i.e. humerus with a comparative study with domestic cat. The proximal extremity comprised of head, greater and lesser tuberosity with bicipital groove. The shaft was cylindrical at the middle. It has several lines, deltoid tuberosity and brachial groove. Interesting finding is the presence of two numbers of pit in olecranon fossae on each bone along with supra condyloid foramen in the distal extremity in both the species. The head of the humerus of Common palm civet cat was round where as the head of humerus was oval in domestic cat. The supra condyloid foramen and the lateral supra condyloid crest was more developed in civet than the domestic cat. The supracondyloid crest on the lateral surface over the lateral epicondyle was more developed in Common palm civet cat and formed the lower boundary of the brachial groove; but in domestic cat the crest was less developed.

Keywords: Civet, humerus, morpholometry

Introduction
The Common Palm Civet (*Paradoxurus hermaphroditus*) are found in diverse habitats - rain forests to woodland, brush and mountains. The body colour of the Common Palm Civet Cat varies from cream to brownish-black or even jet black. The dorsum of the animal contains three longitudinal stripes. They are nocturnal, solitary and arboreal. They are lower risk animal as per the International Union of Conservation of Nature as well as Schedule-II animal as per the Wildlife Protection Act, 1972.Their population is decrease due to habitat loss and poaching [4]. The literature and the scientific information on the arm region of appendicular skeleton is scanty, for which the present study was carried out to elucidate some of the information on humerus of Civet.

Materials and Methods
The gross study was conducted on humerus of two (2) adult civet and domestic cat respectively. The carcass of Common palm civet cats were collected from road accident from the campus of College of Veterinary Science, Khanapara, Guwahati and the carcass of adult domestic cats were collected from the surgery Department College of Veterinary Science, Khanapara. After proper maceration the bone of the arm region was utilised for the present study. The morphometrical data were recorded with a thread, pointed stick (for depth of olecranon) and digital slide callipers.

Results and Discussions
The proximity of the humerus of civets were comprised of head, lesser tubercle (medial tuberosity), greater tubercle (lateral tuberosity) and intertuberal (bicipital groove) (Fig.1). The head was convex and round in shape and directed caudally. The circumference of the head ranges from 4.69 to 4.78 cm. But in domestic cat the head was observed to be oval in shape (Fig.2) with a circumference of 4.6 to 4.68 cm. [3], in humerus of tiger reported that the shape of the head was oval and not in accordance with the present findings of civet. In civet and common cat the greater tubercle (lateral tuberosity) was undivided and below the level of head in civet, but the same was slightly higher in level than the head in common cat. This was in accordance with the findings of [3], in in tubercle (lateral tuberosity) had a small eminence,

formed the lateral margin of the bicipital groove. The lesser tubercle (medial tuberosity) was small and formed the medial margin of the bicipital groove. The depression for the bicipital groove in domestic cat was prominent from the middle of the head.

The distal extremity of civet and domestic cat were comprised of two condyles, two epicondyles, medially supra condyloid foramen, radial fossa cranially and olecranon fossa caudally similar to falines [1]. The medial condyle of civet was like trochlea with a sharp border and lateral condyle was convex (Fig.3). The supra condyloid foramen and the lateral supra condyloid crest was more developed in civet then the domestic cat (Fig.3).

The shaft of humerus in civet was cranio-caudally compressed in its upper & middle part and compressed medio-laterally in the lower part; however, in domestic cat the shaft was round in the middle and the upper distal part. The findings were not in accordance with [2]. The shaft length in civet was found to be 7.23 to 7.37 cm, where as in domestic cat it was 7.41 to 7.61cm.

The cranial surface of the proximal part of the shaft of humerus in civet was having 3 to 4 rough lines (Fig.4). The oblique crest terminates as a deltoid tuberosity in the form of a ridge; which formed the upper boundary of the brachial groove. The crest started from the lower part of the greater tubercle run cranio-medially and ended at the middle for attachment of teres major muscle. The present findings were in accordance with the findings of [3]. But in domestic cat the surface was smooth (Fig.4) with none to single rough line and the oblique crest was faint and teres tubercle was prominent.

The supracondyloid crest on the lateral surface over the lateral epicondyle was more developed in civet (Fig.3) and formed the lower boundary of the brachial groove; but in domestic cat the crest was less developed.

Morphologically the right and left humerus was similar but, morphometrically it was found that the right humerus was heavier than the left one in civet and domestic cat. The same was also reported by [3] in tiger the weight of humerus ranges from 6.606 to 10.05 g and 7.862 to 8.251 g respectively in civet and domestic cat. The literature was not available on the morophometry of humerus of domestic cat, thats why, it was compared with the humerus of tiger.

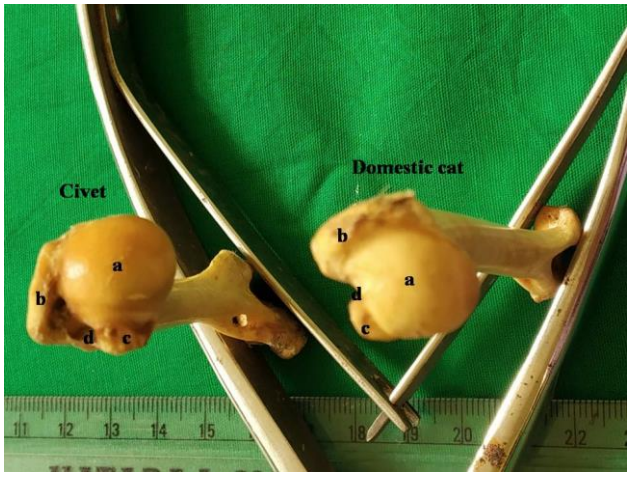

Fig 1: Cranial extremity of humerus of Civet and common cat showing a. Head, b. Lateral tuberosity, c. Medial tuberosity and d. Bicipital groove

Fig 2: Cranial extremity of humerus showing round head in civet and oval head in common cat.

Fig 3: Caudal extremity of humerus showing a. Medial condyle trochlea shaped in Civet ,b. Lateral condyle, c. Supracondyloid foramen and d. Lateral supracondyloid crest sharp in Civet

Fig 4: Cranio-lateral surface of humerus showing a. 3-4 lines in cranial surface of civet but smooth in domestic cat , b. Pectoral ridge and c. deltoid ridge.

Table xxxx

Sl. No	Parameters	Civet -I		Civet -II		Domestic cat-I		Domestic cat-II	
		R	L	R	L	R	L	R	L
1	Weight(g)	9.649	9.606	10.05	9.98	8.018	7.862	8.251	8.24
2	Length (cm)	9.45	9.40	9.58	9.57	9.62	9.61	9.89	9.89
3	Shaft length(cm)	7.25	7.23	7.37	7.36	7.41	7.41	7.61	7.6
	Circumference(cm)								
4	Head	4.71	4.7	4.69	4.78	4.6	4.6	4.65	4.68
5	Upper part of shaft	3.8	3.8	3.87	3.86	3.6	3.5	3.63	3.6
6	Middle part of shaft	3.1	3.0	3.2	3.25	2.8	2.75	2.78	2.8
7	Lower part of shaft	2.9	2.9	3.01	2.94	2.7	2.7	2.8	2.8

References

1. Boyd JS, Paterson C, May AH. Colour Atlas of Clilical Anatomy of Dog and Cat. 2nd edn. Publ. Mosby Wolfe, Glasgow, UK. 2001, 62-87.
2. Pandit RV. Osteology of Indian Tiger. Tech. Bull. No. VI., Conservator of Forest and Director, Project Tiger, Melghat, Amaravati. 1994, 29-57.
3. Tomar MPS, Taluja JS, Vaish R, Shrivastav AB. Gross anatomical study on the humerus of tiger (*Panthera tigris*). International Journal of Advanced Research. 2014; 2(3):1034-1040.
4. Menon V. A field Guide to Indian Mammals.3rd Edn. 2003, 100-171.