



P-ISSN: 2349-8528

E-ISSN: 2321-4902

[www.chemijournal.com](http://www.chemijournal.com)

IJCS 2020; SP-8(4): 275-277

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Received: 15-05-2020

Accepted: 19-06-2020

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## International Journal of Chemical Studies

# Gross anatomical study of appendicular skeleton of pelvic region of common palm civet cat (*Paradoxurus hermaphroditus*)

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DOI: <https://doi.org/10.22271/chemi.2020.v8.i4e.10036>

### Abstract

The present study was conducted on one hip bone of Common palm civet cat (*Paradoxurus hermaphroditus*). The hip bone consisted of three bones viz., ilium, ischium and pubis. Those bones met to form an acetabulum. The ilium was composed of wing and body. The wing of the ilium was expended and it had pelvic surface, and gluteal surface. The body of the ilium took part in the formation of acetabulum. The iliac crest was strongly convex and thick whereas the gluteal surface was smooth and concave. The pelvic surface was consisted of sacral surface and auricular surface. The sacral surface was smooth and the auricular surface was rough. The iliopectinal line was extended from the auricular surface to the iliopubic eminences. Apart from those the ilium contained sacral tuber, cranial and caudal iliac spine, greater ischiatic spine and ventral gluteal line. The ischium was the caudal most bone among those bone and took part in the formation of ischial symphysis as well as acetabulum, and obturator foramen. Apart from those ornament of ischium, it contained lesser ischiatic notch, ischiatic spine and tuber ischii. The lesser ischiatic notch was shallow compared to the greater ischiatic notch. The pubis was smallest bone among those three bones. Tubercle for psoas minor muscle (hypo axial muscle) was observed in the pecten of pubis.

**Keywords:** Gross, anatomy, appendicular, skeleton, pelvic region, common palm civet cat

### Introduction

The common Palm Civet Cat (*Paradoxurus hermaphroditus*) is distributed throughout the India except Gujarat, Rajasthan and Himalaya. They can be distinguishing by the unpatterned throat and tail. 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. These stripes are visible on close inspection. 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 (Menon, 2003) [5]. Since there is merge literature on the gross anatomy of skeleton (hip bone or os coxae) of the pelvic region, being a schedule-II animal of Wildlife, hence the present study was designed to established anatomical norms on this bone.

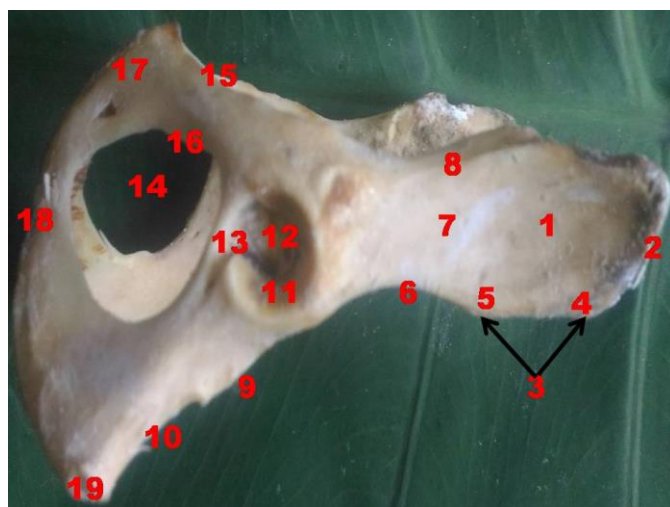
### Materials and Methods

In the current investigation, the hip bone or os coxa of Pelvic limbs was collected from an adult Common palm civet cat (*Paradoxurus hermaphroditus*) after death of the animal. The animal was died in road accident in the campus of College of Veterinary Science, Assam Agricultural University, Khanapara, Guwahati, Assam, India. After death of the animal was brought to the Department and the hip bone was processed as per the standard method of Young (1980) and gross anatomical studies were made on it.

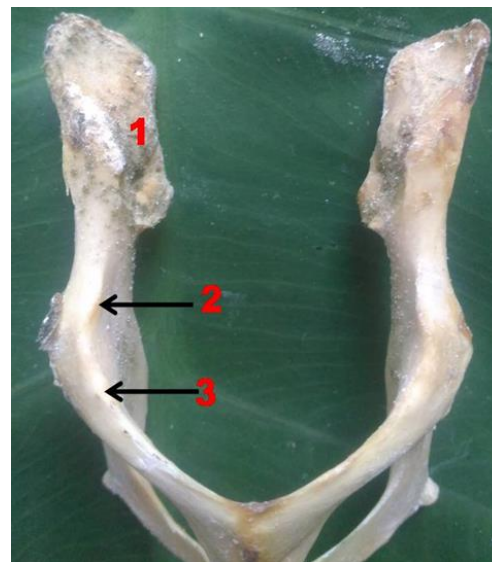
### Results and Discussions

The present study was conducted on the appendicular skeleton (hip bone or os coxae) of pelvic region of Common Palm Civet Cat (*Paradoxurus hermaphroditus*). The hip bone was the largest flat bone of the body animal. The hip bone was consisted of three bones viz., ilium, ischium and pubis. These finding was in accordance with the finding of Sisson (1975) [4] in carnivore. The ilium was the largest and cranial most bone among those bones.

The ilium was divided into two part i.e. wing and body. These finding was total agreement with the finding of the Denbow and Akers (2013) [3] in Canine. The wing of the ilium was expended and it had two surfaces. The body of the ilium took part in the formation of acetabulum. The wing of the ilium contained iliac crest, gluteal surface, pelvic surface. The iliac crest was strongly convex and thick whereas the gluteal surface was smooth and concaves (Fig.1). Similar observation was reported by Nickel *et al.*, (1986) [1] in carnivore. The pelvic surface was consisted of sacral surface and auricular surface. The sacral surface was smooth and the auricular surface was rough (Fig.2). The iliopectinal line was extended from the auricular surface to the iliopubic eminences. Apart from those the ilium contained sacral tuber, cranial and caudal iliac spine, greater ischiatic spine and ventral gluteal line. The ischium was the caudal most bone among those bone and took part in the formation of ischial symphysis as well as acetabulum,. and obturator foramen. The acetabulum was composed of acetabular rim, lunate surface, acetabular fossa and acetabular notch. The obturator foramen reduced the weight of the hip bone. Apart from those ornament of ischium, it contained lesser ischiatic notch, ischiatic spine and tuber ischii. The lesser ischiatic notch was shallow compared to the greater ischiatic notch. Caudally, the half of the ischium was united with the opposite side of the half of ischium to form a ishchial arch (Fig.3). The pubis was smallest bone among those three bones. These finding was corroborated with the finding of Colville and Bassert (2008) [2] in animal. Tubercle for psoas minor muscle (hypo axial muscle) was observed in the pectin of pubis. The pubis took part in the formation of pubic symphysis as well as acetabulum and obturator foramen.



**Fig 1:** Photograph showing the gluteal surface of ilium (1), crest of ilium (2),sacral tuber (3),cranial dorsal iliac spines(4), Caudal dorsal iliac spines (5),greater ischiatic notch (6),body of the ilium (7),ventral iliac line (8),ishchiatic spine (9), lesser ischiatic spine (10),tuber ischii (19), lunate surface (11), acetabular fossa (12), acetabular notch (13), obturator foramen (14),Cranial branch of pubis(15), Caudal branch of pubis (16), Pubic symphysis (17) and ischial symphysis (18) of hip bone of Common Palm Civet Cat ((*Paradoxurus hermaphrodites*)).



**Fig 2:** Photograph showing the auricular surface (1), iliopubic eminence (2) and tubercle for psoas minor of hip bone of Common palm civet cat (*Paradoxurus hermaphrodites*)



**Fig 3:** Ischial arch of hip bone of Common palm civet cat (*Paradoxurus hermaphrodites*)

### Summary and Conclusion

In current study the hip bone or os coxae of Common Palm Civet Cat (*Paradoxurus hermaphrodites*) was consisted of three bones *viz.*, ilium, ischium and pubis. The ilium was composed of wing and body. The wing of the ilium was expended and it had two surfaces. The body of the ilium took part in the formation of acetabulum. The wing of the ilium contained iliac crest, gluteal surface, pelvic surface. The iliac crest was strongly convex and thick whereas the gluteal surface was smooth and concave. The pelvic surface was consisted of sacral surface and auricular surface. The sacral surface was smooth and the auricular surface was rough. The iliopectinal line was extended from the auricular surface to the iliopubic eminences. Apart from those the ilium contained sacral tuber, cranial and caudal iliac spine, greater ischiatic

spine and ventral gluteal line. The ischium was the caudal most bone among those bone and took part in the formation of ischial symphysis as well as acetabulum, and obturator foramen. Apart from those ornament of ischium, it contained lesser ischiatic notch, ischiatic spine and tuber ischii. The lesser ischiatic notch was shallow compared to the greater ischiatic notch. The pubis was smallest bone among those three bones. Tubercle for psoas minor muscle (hypo axial muscle) was observed in the pecten of pubis. These studies will be helpful to the wildlife veterinarian for the identification of for veterolegal cases and disease control regime.

### **Acknowledgement**

The author is grateful to the Dean, Faculty of Veterinary Science and HOD, Department of Anatomy & Histology, College of Veterinary Science, Assam Agricultural University, Khanapara, Guwahati, Assam, India to carry out the research. The author is also grateful to the forest staff of Amusing wildlife sanctuary for the sample.

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