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Gross anatomical study of femur in the domestic cat (*Felis catus*)

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Abstract

Gross morphological study was carried out on femur of five adult domestic cats. The position of the femur was oblique and cranioventral in the cat. In the medial border, at the upper third, trochanter minor was present and in the lower third, medial supracondyloid crest was present. The average length of the femur was 9.540 ± 0.3169 cm in the cat. The trochanteric ridge travelled in oblique direction which communicated the trochanter major with the trochanter minor. The third trochanter was absent. The data collected were analyzed for mean and standard error as per the standard procedure of Panse and Sukhatme (1967) and Snedecor and Cochran (1994).

Keywords: Anatomy, cat, femur, morphology, osteology

Introduction

The cats (*Felis catus*) in addition to dogs are the closest animals living with humans (Koyasu *et al.*, 2020). The scientific information and literature on femur of domestic cat is limited, so the present study was conducted to illuminate the gross osteological features of the femur of domestic cat.

Materials and Methods

Gross morphological study was carried out on femur of five adult domestic cats handed over after death to the Department of Anatomy, CVSc, Guwahati, by the owners voluntarily. The data collected were analyzed for mean and standard error as per the standard procedure (Panse and Sukhatme, 1967; Snedecor and Cochran, 1994).

Results and Discussion

The position of the femur was oblique and cranioventral in the cat. The average length of the femur was 9.540 ± 0.3169 cm in the cat which is somewhat recorded to be less than the report of El-Ghazali and El-Behery (2018) ^[2] who recorded the average length of femur to be 11.440 ± 0.3169 cm in the cat. Being the long bone, the femur in cat had two extremities and a shaft. The shaft presented four surfaces and two borders (El-Ghazali and El-Behery, 2018) ^[2]. The surfaces were anterior, posterior, lateral and medial (Fig.1). Similarly, the borders recorded as Lateral border and medial border. In the medial border, at the upper third, trochanter minor was present and in the lower third, medial supracondyloid crest was present (Fig.1). At the same level of lower third, in lateral border, lateral supracondyloid crest was present (Fig.1). The nutrient foramen was present just above the middle of the caudal surface (Fig.1) which is in accordance to the report of El-Ghazali and El-Behery (2018) ^[2] in cat. The third trochanter was absent in the lateral border which is similar to Casteleyn *et al.* (2012) ^[1]. The proximal extremity of the femur had head, neck and trochanter major. Head was medially placed and trochanter major was laterally placed (Fig.1). From the posterior aspect of the trochanter major, the trochanteric ridge travelled in oblique direction which communicated the trochanter major with the trochanter minor (Fig.1). Medial to the ridge, trochanteric fossa was observed (Fig.1). In cat, both head and trochanter major were at the same level. The distal extremity comprised of trochlea cranially (Fig.2) and condyles caudally (El-Ghazali and El-Behery, 2018) ^[2]. Adjacent to the condyles, epicondyles were recorded. Above each condyles and somewhat laterally, facet for fabella bones (lateral and medial) was observed (Fig.3) which is similar to the report of El-Ghazali and El-Behery, 2018; Casteleyn *et al.* (2012) ^[2, 1]. The intercondyloid fossa was very deep. The extensor was distinct (Fig.4) which is not in accordance to the report of El-Ghazali and El-Behery (2018) ^[2] who observed the extensor

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fossa as indistinct in cat. Dorsal and somewhat cranial to extensor fossa, the popliteal fossa was present (Fig.4).

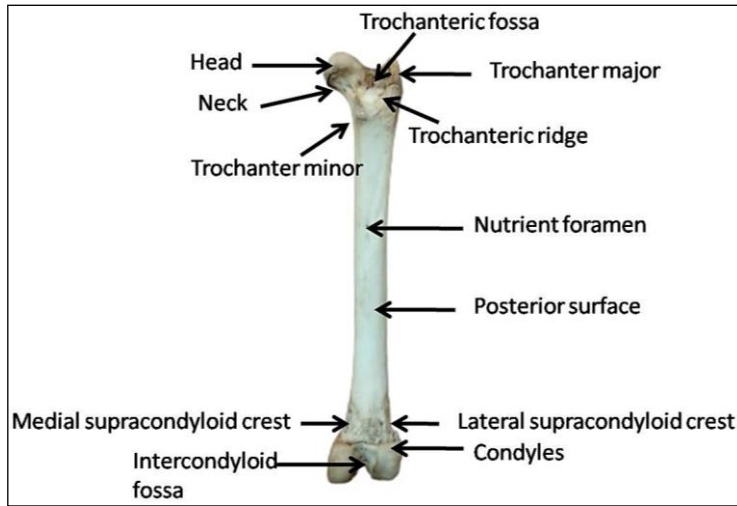


Fig 1: Posterior view of the Femur

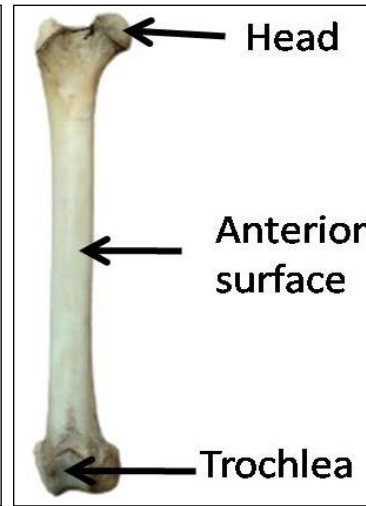


Fig 2: Anterior view of the Femur

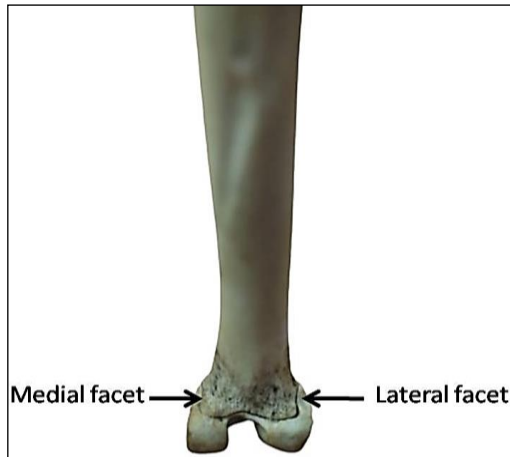


Fig 3: Showing facets for fabella in cat

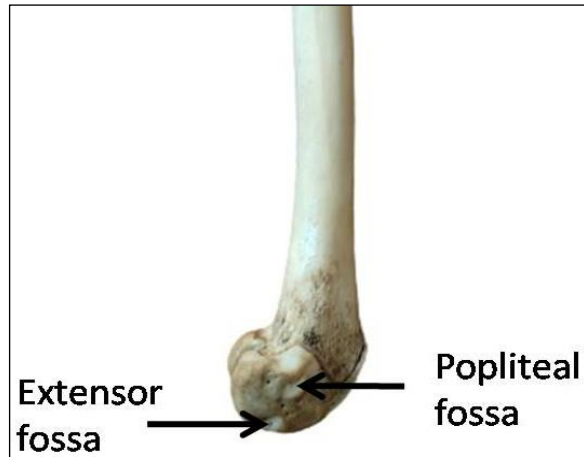


Fig 4: Lateral view of distal extremity

Conclusion

The information observed in the study will be useful to understand the anatomical variation among the same group belonging to various regions and will also be helpful for future research works.

Conflict of interest

The authors declare that there is no relevant financial or non-financial competing interest to report for the current work.

References

1. Casteleyn C, Bakker J, Breugelmans S, Kondova I, Saunders J, Langermans JAM. Anatomical description and morphometry of the skeleton of the common marmoset (*Callithrix jacchus*). *Lab. Anim.* 2012;46:152-63.
2. El-Ghazali HM, El-Behery EI. Comparative morphological interpretations on the bones of the pelvic limb of New Zealand rabbit (*Oryctolagus cuniculus*) and domestic cat (*Felis domestica*), *Journal of Advanced Veterinary and Animal Research.* 2018;5(4):410-419.
3. Panse VG, Sukhatme PV. *Statistical Methods for Agricultural Workers.* I.C.A.R., New Delhi, 1967, 381.
4. Snedecor CW, Cochran WG. *Statistical Methods* (6th edn). Oxford and IBH Publishing Co., Bombay, 1994, 593.

5. Koyasu H, Kikusui T, Takagi S, Nagasawa M. The Gaze Communications between Dog/Cats and Humans: Recent Research Review and Future Directions. *Front. Psychol.*, 2020. <https://doi.org/10.3389/fpsyg.2020.613512>.