

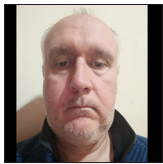


Case Report Zoological Medicine

A Case Report: Syndactyly in a Wild, Roadkill, Feline: Geoffroy's Cat *Leopardus geoffroyi* (Mammalia: Felidae)

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ABSTRACT

A recently dead, Roadkill, adult male Geoffroy's Cat *Leopardus geoffroyi* was found on the access road to Laguna Capitán, Presidente Hayes department, Paraguay. Upon examination of the individual, it was noticed that the right hind foot showed an anomalous plantar pad arrangement. X-ray revealed a possible complex syndactyly complicated with aphalangia, indicating that the external malformation was caused by internal malformation. To the best of my knowledge, this is the first report of syndactyly in a wild cat species.

Keywords: Aphalangia, Complex syndactyly, Malformation, Paraguay, Wild cat

INTRODUCTION

Broadly, syndactyly (from the Greek syn = together; dactylos = digit) is the fusion of digits of the hands or feet, but this can take many forms. Consequently, syndactyly may be further categorized as simple or complex, as complicated or uncomplicated, and as complete or incomplete.^[1] Simple syndactyly refers to the interconnection of digits with skin or tissue, as opposed to complex syndactyly, in which the fusion is osseous. Complete syndactyly refers to fusion along the entire length of a digit, whilst incomplete syndactyly is only partial. Complex syndactyly is referred to as complicated when it is associated with other anomalies, and uncomplicated when it is not.^[1] Complex and complete syndactyly are inextricably linked in the veterinary literature.^[2]

CASE REPORT

A recently dead, roadkill, adult male Geoffroy's Cat *Leopardus geoffroyi* was found on the access road to Laguna Capitán, Presidente Hayes department, Paraguay, on August 6, 2019 (CZPLT-M 542; mass 4190 g; head and body length 685 mm; tail length 310 mm). The cause of death was determined as severe head trauma caused by the vehicle collision (based on the smashed skull), but on examination of the individual, it was noticed that the right hind foot showed an anomalous plantar pad arrangement [Figure 1], and so it was collected for further examination. The specimen is housed in the Colección Zoológica de la Fundación Para La Tierra, Pilar, Paraguay, and was X-rayed at the Hospital Regional de Pilar.

X-rays revealed considerable deformity in the skeletal structure of the limb. Although the X-rays are inconclusive in terms of the exact deformity, it seems that the phalanx of the 2nd digit is



Figure 1: Abnormal right hind plantar pad arrangement of wild road-killed Geoffroy's Cat *Leopardus geoffroyi* from Paraguay (Photo Matthew T. Owen).

missing the 2nd and 3rd phalangeal bones, and the third digit has a normal phalangeal bone. The 2nd phalangeal bone is present but reduced and may or may not be fused with the 2nd phalangeal bone of the fourth digit (Francesco Di Dona in litt). Thus, there appears to be a possible complex syndactyly complicated with aphyalangia, indicating that the external malformation is caused by internal malformation [Figure 2].

DISCUSSION

Syndactyly is the result of the breakdown of the mesenchyme between radial swellings during the development of an extremity in utero.^[3] However, the precise causes of feline syndactyly remain to be fully elucidated for domestic cats; the presence of multiple cases within a single litter and among related individuals is suggestive of a likely genetic basis.^[2,4,5]

Reports in the literature of syndactyly in domestic felines are uncommon,^[2,4,6-8] but to the best of our knowledge, this is the first report of syndactyly in a wild felid. Syndactyly causes little or no discomfort in examined domestic cats, and surgical intervention is not recommended.^[2] Geoffroy's Cat is the most common small feline of the Chaco ecoregion of central South America^[9] and is regularly observed in the area in which the specimen was found. Based on the healthy size and weight of this wild cat and the fact that it had survived comfortably into adulthood before its accidental death, it must be assumed that the condition caused it no serious survival issues.



Figure 2: X-ray in plantar view showing abnormal foot bone arrangement of wild road-killed Geoffroy's Cat *Leopardus geoffroyi* from Paraguay.

CONCLUSION

To the best of my knowledge, this is the first report of syndactyly in a wild cat species.

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