

A SURVEY OF THE REPRODUCTIVE LESIONS IN CAPTIVE FEMALE NON-HUMAN PRIMATES IN ITALY

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INTRODUCTION

Non-human primates (NHPs) in zoos are often part of breeding programs to preserve their biological diversity. For this reason, the study of pathologies through the systematic post-mortem collection of reproductive lesions represents an excellent tool for obtaining useful information. Single pathological cases are frequently reported, while reviews in captive NHPs are scarce [1]. We describe post-mortem reproductive lesions found between 2007 and 2024 in captive female NHPs housed in central Italy.

RESULTS

Reproductive pathologies were observed in 13 adult females (13/94, 14%); some animals had multiple simultaneous lesions. The most frequently lesions were neoplastic pathologies (9/13, 62%). Leiomyoma was the most frequent uterine tumor; malignant primary tumors were rare. In two cases, metastatic lesions were found. Non-neoplastic pathologies were diagnosed in 5 animals.

MATERIALS AND METHODS

The cases were sourced from the Histopathology Laboratory database of the Istituto Zooprofilattico Sperimentale del Lazio e della Toscana, from dead animals received for post-mortem examination between 2007 and 2024. Necropsies were conducted on 94 captive female NHPs held in three facilities; histopathology were performed on macroscopically evident lesions.

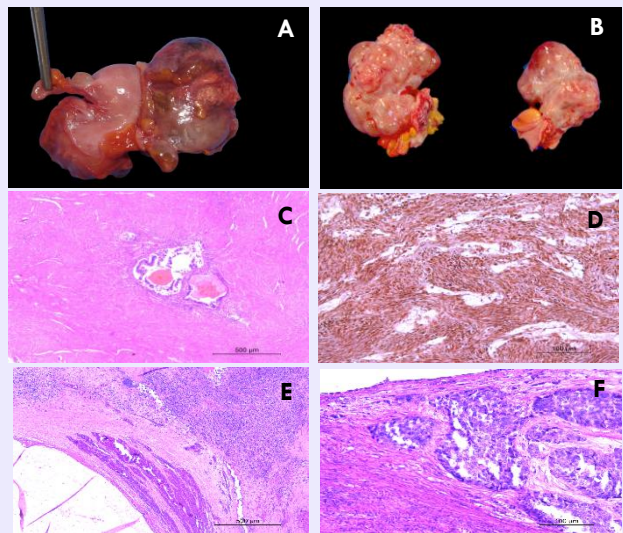


Figure1. A. Ovaric Adenocarcinoma; B. Ovarian follicular cysts; C. Adenomyosis, H-E; D. Leiomyoma, Masson's trichrome stain, 20x; E. Metastatic histiocytic sarcoma in ovary, H-E, 5X; F. Metastatic mammary carcinoma in uterus, H-E, 20X.

Table 1. Reproductive lesions observed in captive female NHPs between 2007-2024

Category of NHP	Common name	Scientific name	Age	Diagnosis
Old World NHP	Cynomolgus macaque	Macaca fascicularis	17	Leiomyoma, Pyometra
	Cynomolgus macaque	Macaca fascicularis	adult	Ovaric Adenocarcinoma with peritoneal carcinomatosis
	Assam macaque	Macaca assamensis	33	Cystic endometrial hyperplasia, Adenomyosis
	Japanese macaque	Macaca fuscata	24	Leiomyoma
	Rhesus macaque	Macaca mulatta	30	Leiomyoma
	Pig-tailed macaque	Macaca nemestrina	20	Endometriosis, Adenomyosis
	Orangutan	Pongo pygmaeus	45	Metastatic histiocytic sarcoma in ovary, Leiomyoma
	Orangutan	Pongo pygmaeus	37	Ovarian follicular cysts
	Lar gibbon	Hylobates lar	31	Cystic endometrial hyperplasia, Adenomyosis
New World NHP	Chimpanzee	Pan troglodytes	27	Leiomyoma
	Tufted capuchin	Sapajus apella	19	Cystic endometrial hyperplasia
Prosimian	Tufted capuchin	Sapajus apella	27	Endometrial carcinoma with metastasis
	Ring-tailed lemur	Lemur catta	18	Metastatic mammary carcinoma in uterus

DISCUSSION AND CONCLUSION

The findings align with previous studies in these species [1]. All subjects were old aged, and information on their reproductive treatments are missing. Differently from what reported in the literature, non-neoplastic pathologies were not frequent in our cases, but tissues without macroscopic lesions were not systematically sampled. Early stages of endometriosis and adenomyosis often require histological examination to be assessed as they could not be macroscopically evident. Due to the retrospective nature of the study, and the limited number of cases, species-specific patterns and prevalence could not be determined. Future research should actively investigate these pathologies in all subjects during the necropsy to increase the cases detection and to obtain useful information for the reproductive management of NHPs.

References

1. Moresco A et al. Reproductive one health in primates. Am J Primatol. 2022;84:e23325.