

MORPHOMETRIC VALUES OF OVARY, OVIDUCT AND CERVIX OF PAKISTANI FEMALE CAMEL (*CAMELUS DROMEDARIUS*)

M. YASSER MUSTAFA BUTT, SHAKIL AKHTAR KHAN AND A. AZIZ

College of Veterinary Sciences, Lahore, Pakistan

Abstract: The biometrical values including size (length, width and thickness) and weight of the normal ovary, oviduct and cervix in three different age groups of Pakistani female camels (*C. dromedarius*) have shown that there were no differences in both left and right organs of same age group, however, have variations in different age showing the increase with the advancement of the age.

Key words: Biometrical values, camel, female reproductive organs, ovary, oviduct, cervix.

INTRODUCTION

Camel (*C. dromedarius*) is an important mean of transport, meat and milk in the middle East and African countries. The reasonable population of this species is used for this purpose in Pakistan which is about 0.819 million (FAO, 1978). Compared to the importance of dromedary, there is a dearth of literature about it. The study of the reproductive organs in camels has remained incomplete, only very little information exists on the female camel (Icapal, 1987). Several studies have been done on the biometrical aspects of female genitalia in adult camels. Tayeb (1953), Shalash (1965), Joshi (1978) and Khan *et al.*, (1989) have observed cervixes. Abdalla (1967) and Musa (1969) studied oviducts and Musa (1969, Chahrasbie and Goulbazhagh (1975), Musa (1979) and Arthur (1989) have examined ovaries in adult female camels. Al-Eknah *et al.*, (1992) have studied morphology of female genitalia of camel in three different age groups in adult stages.

The morphological developments of genital tract from pre-puleral stage to post-puleral stage are of great significance in several aspects. Such study is lacking in camel. The present work accords the biometrical changes that accompany from immature to fully developed stage in ovary, oviduct and uterus of female camel.

MATERIALS AND METHODS

The animals used in this study were those which were brought for slaughtering in the Lahore Abattoir. A total of 130 samples were collected. Those were assorted into three different groups on the basis of their age. These were camel calf (below 2 years), heifer (2-4 years) and adult (above 4 years). One hundred and thirty internal genitalia, specimens were separated into normal and biometrical studies included size (length, width, thickness) and weight of normal organs. These were determined with a measuring tape, vernier caliper and analytical balance based on the techniques used by Khan (1985).

RESULTS AND DISCUSSION

The biometrical values including length, width, thickness and weight were observed in 256 normal ovaries of 128 of these three groups were shown in Table I. These values were comparable with those reported by Musa (1979) and Iqbal *et al.* (1993). The length of the 260 normal oviducts were measured and shown in Table II which were comparable with Abdalla (1967) and Iqbal *et al.* (1993), while regarding 127 normal cervixes only length and number of rings were noted and are shown in Table II. These values were comparable with those reported by Joshi *et al.* (1978) and Ali *et al.* (1992).

This data may serve to determine the normal status of female reproductive state in a camel for any biochemical, physiological, or hormonal studies based on slaughtering animals.

Table 1. Biometrical values of normal ovary and oviduct of female camel

Age	Calf (n=15)		Heifer (n=33)		Adult (n=80)	
Ovary						
Parameters	Left ovary	Right ovary	Left ovary	Right ovary	Left ovary	Right ovary
Length (cm) Mean \pm S.E.M.	2.5 \pm 0.10	2.42 \pm 0.07	3.06 \pm 0.08	2.90 \pm 0.07	3.63 \pm 0.05	3.45 \pm 0.06
Width (cm) Mean \pm S.E.M.	1.89 \pm 0.15	1.90 \pm 0.08	2.24 \pm 0.06	2.11 \pm 0.06	2.62 \pm 0.05	2.57 \pm 0.05
Thickness (cm) Mean \pm S.E.M.	0.80 \pm 0.05	0.71 \pm 0.06	0.75 \pm 0.04	0.79 \pm 0.04	0.93 \pm 0.02	0.82 \pm 0.02
Weight (g) Mean \pm S.E.M.	3.65 \pm 0.46	3.50 \pm 0.37	4.52 \pm 0.12	4.24 \pm 0.11	4.76 \pm 0.08	4.33 \pm 0.08
Oviduct						
Parameters	Left oviduct	Right oviduct	Left oviduct	Right oviduct	Left oviduct	Right oviduct
Length (cm) Mean \pm S.E.M.	19.2 \pm 0.6	19.2 \pm 0.6	23.5 \pm 0.53	23.5 \pm 0.53	25.5 \pm 0.29	25.2 \pm 0.29

S.E.M. = Standard error of mean

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Table II. Biometrical values of normal cervix of female camel

Age	Calf n=15	Heifer n=33	Adult n=78
Length (cm) Mean+S.E.M.	3.22±0.09	4.06±0.08	4.68±0.06
Range (cm)	2.5-3.6	3-4.7	3.5-6.5
No. of Rings Mean+S.E.M.	3±0.13	3±0.05	3.38±0.07

S.E.M. = Standard error of mean

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