Cairo Univ.

VET. MED.

Angioarchitectural Patterns of The Testicular Vessels

By

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Introduction

Testes

Intra-Abdominal

- Marine Mammals, Elephant
- Avian species

Extra-Abdominal

Introduction

Harrison, R. G. (1949).
"The comparative anatomy of the blood-supply of the mammalian testis".

EL-Gaafary, M.A. and Aly, A.A. (1977).
"Anatomical studies on the arterial supply of the testis and epididymis of the dromedary camel".

Osman DI, Tingari MD. and Moniem KA. (1979).
"Vascular supply of the testis of the camel (Camelus dromedarius)".

Dhingra L. (1979).
"Angiarchitecture of the arteries of the testis of goat (Capra aegagrus)".
"Angioarchitecture of the buffalo testis".

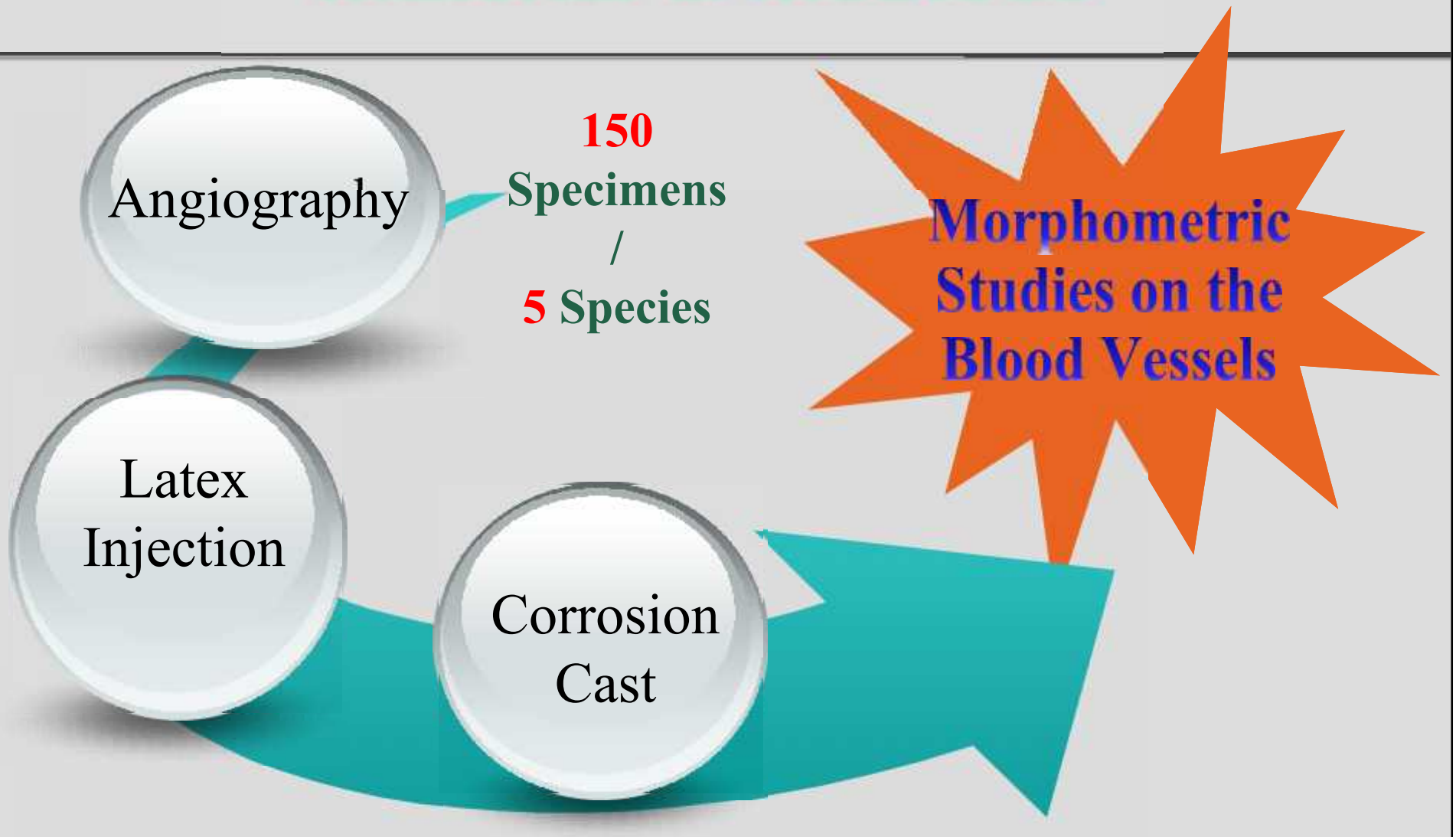
Introduction

El-Gaafary M. A., Aly A. E. and El-Ayat M. A. (1980). "Morphological studies on the testicular artery in the Egyptian water buffalo ".

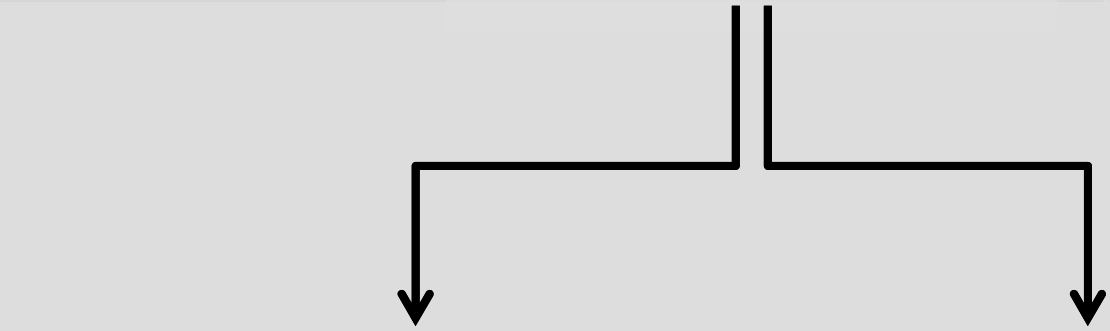
Hees H, Leiser R., Kohler T. and Wrobel K. (1984).
"Vascular morphology of the bovine spermatic cord and testis".

Polguj M., Jędrzejewski K.S. and Topol M. (2010).
"Arterial supply of human and bovine testes: a topographic and morphometric comparison study".

Material & Methods



Results



Part I

Testicular Arteries.

Part II

Testicular Veins.

Part I; Testicular Arteries.

1. Origin
2. Course and distribution
3. Architectural pattern
4. Morphemetric study

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Part I; Testicular Arteries.

1 Origin

Abdominal Aorta

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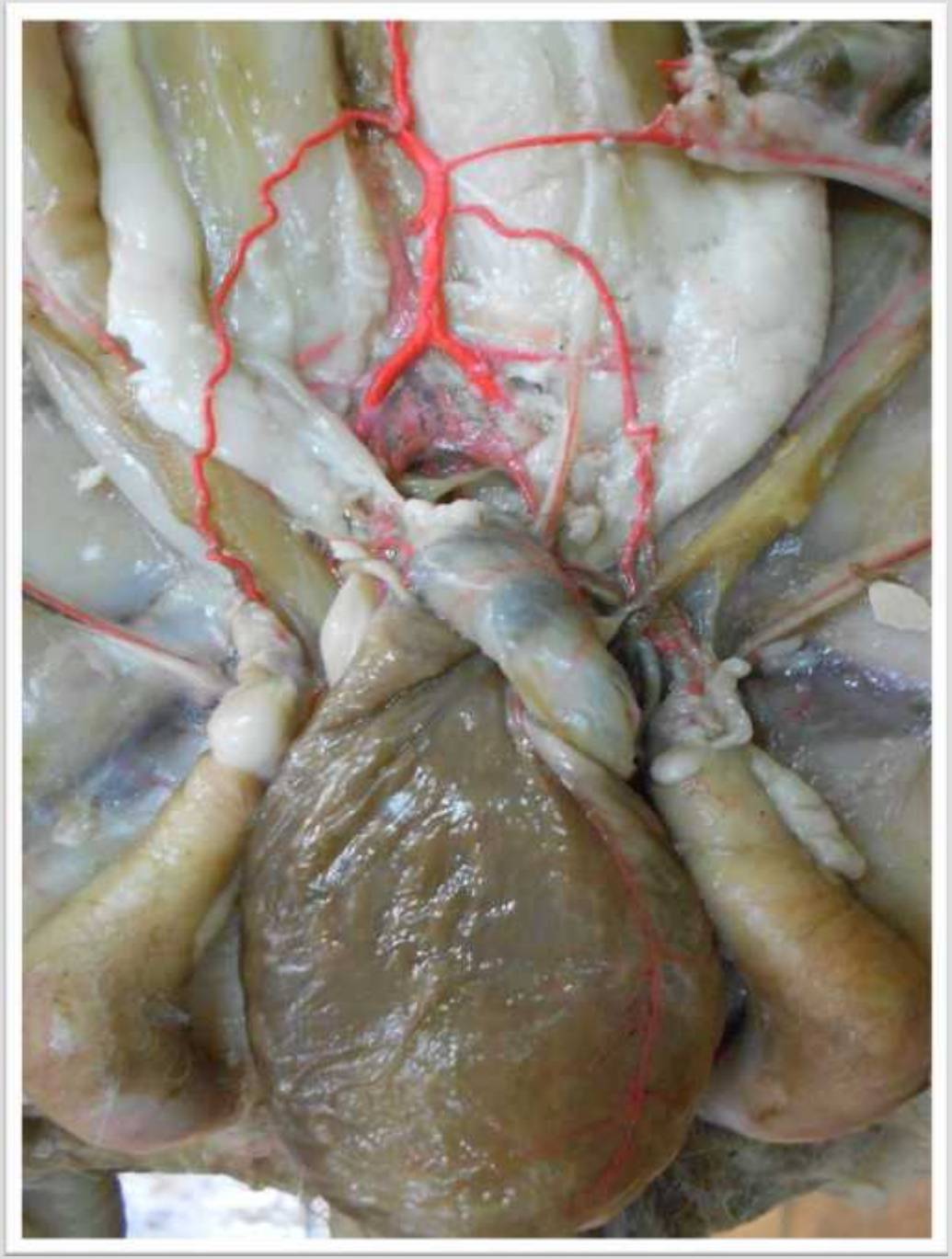

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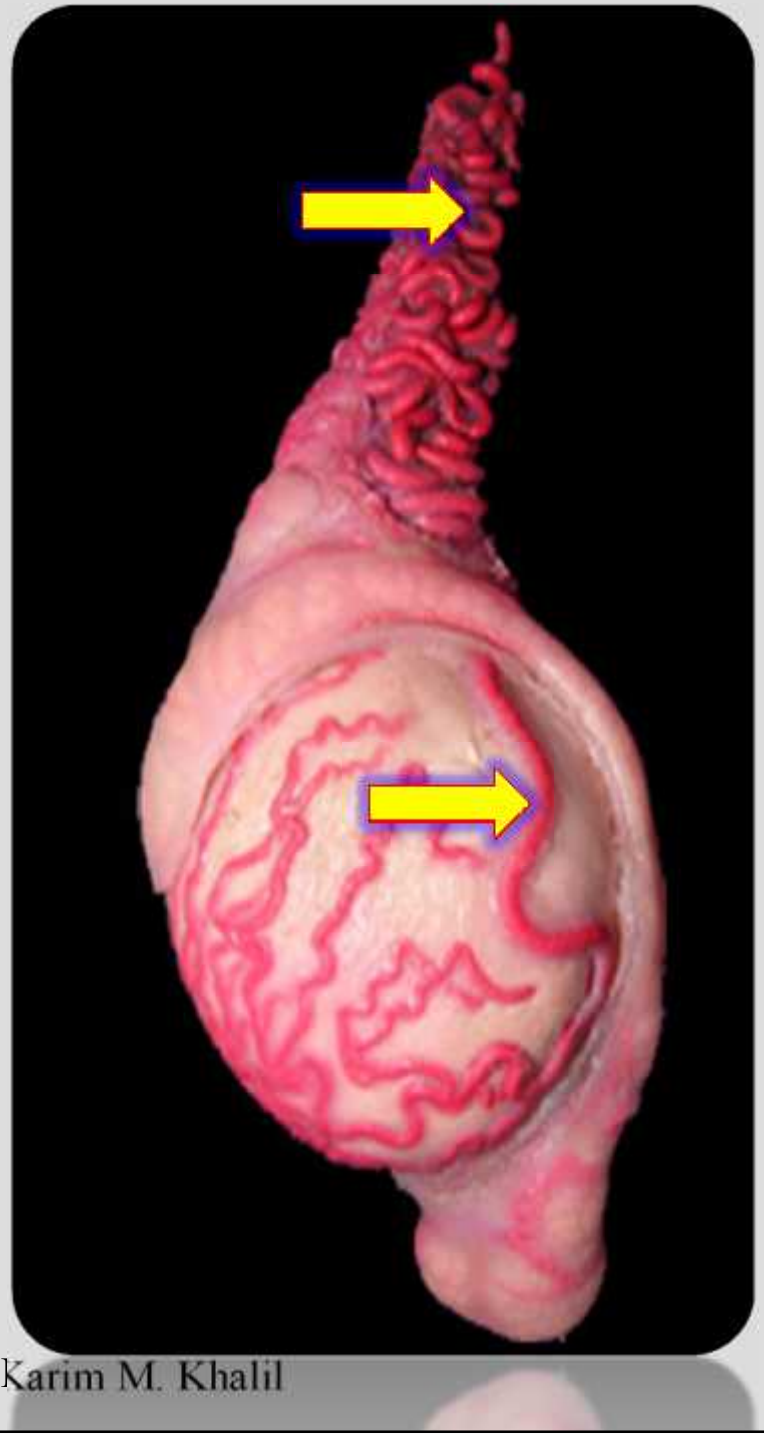
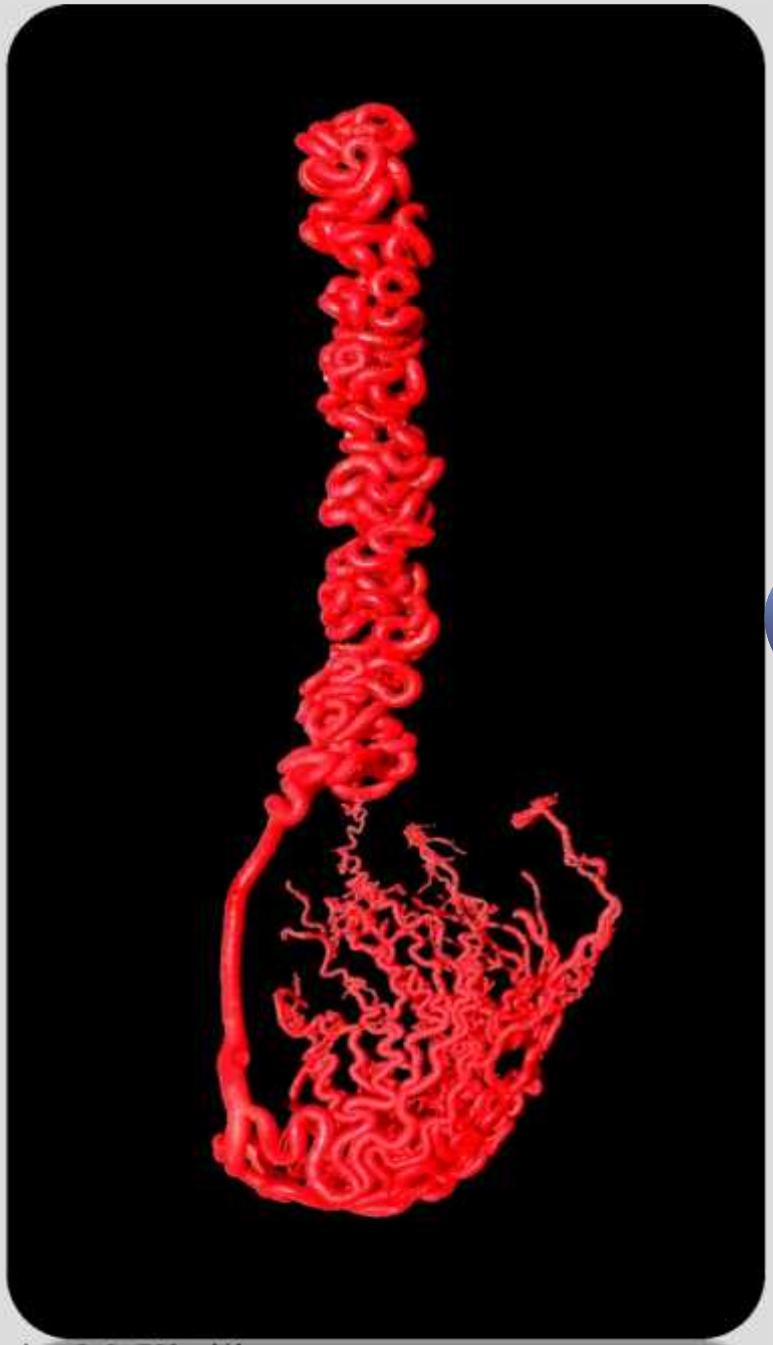


2 Course and distribution

Arteria Testicularis

- ✓ Pars Abdominalis.
- ✓ Pars Funicularis.
- ✓ Pars Marginalis.



3 Architectural patterns

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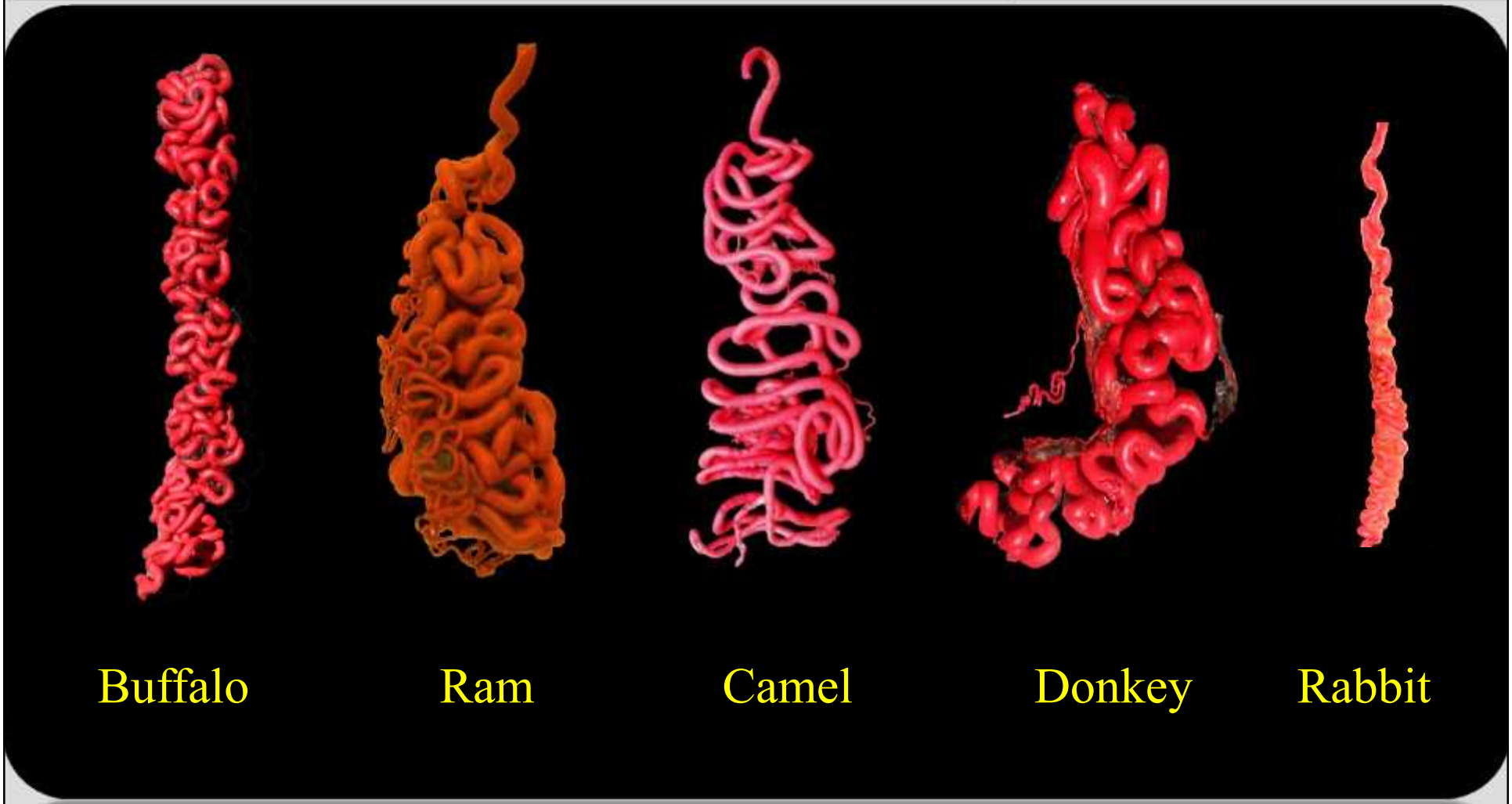
Testicular Artery,

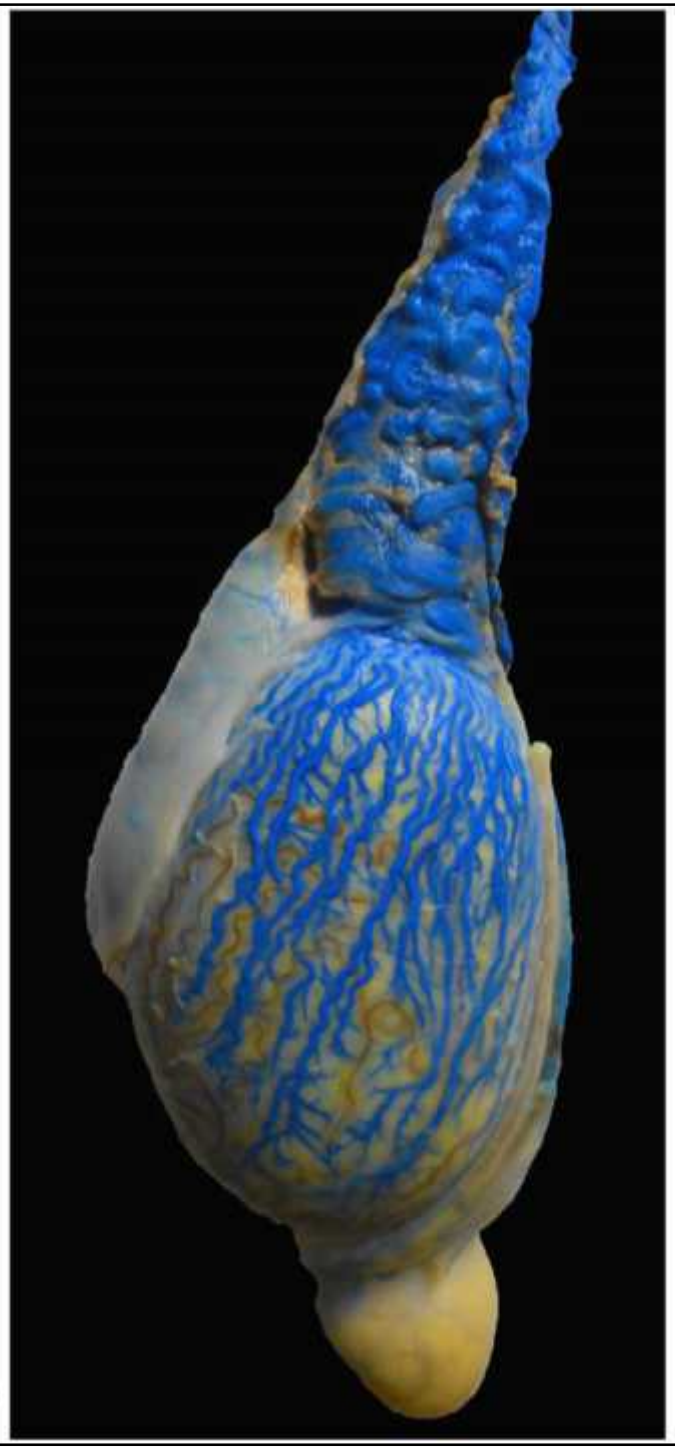
Vascular cone



Part II; Testicular Veins.

The present study has topographically divided the venous side into abdominal part and three basic plexuses;

- The Pampiniform Plexus.
- The Marginal Plexus.
- The Intra-parenchymal plexus.



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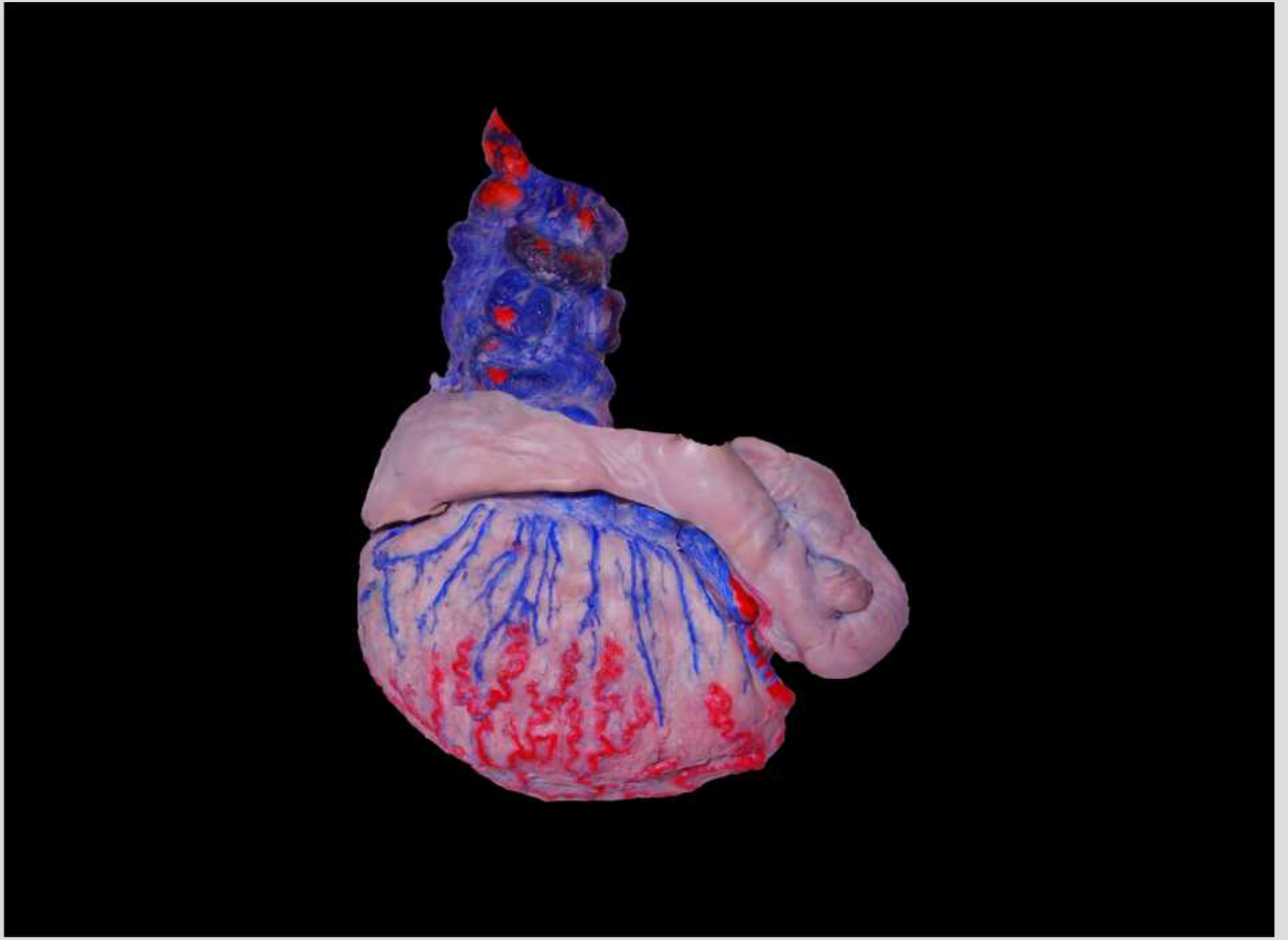

Morphometric Study

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Table (1): showing The different dimensional values of the testicular artery in **Farm animals.**

SPECIES	RANGE VALUES	VOLUME OF TESTIS (Cm^3.)	LENGTH OF VASCULAR CONE (Cm.)	A. TESTICULARIS		
				LENGTH (Cm.)	DIAMETER (mm.)	NO. OF CONVOLUTIONS
Buffalo	Minimum	28.2	10	145	2.2	130
	Mean	**70.0**	**12**	**177**	**2.8**	**159**
	Maximum	83.2	14	215	3.8	190
Ram	Minimum	72.0	5.7	180	1.8	148
	Mean	**115**	**6.9**	**205**	**2.2**	**177**
	Maximum	153.7	8.2	225	2.4	200
Camel	Minimum	28.6	10.0	180	1.2	95
	Mean	**57.0**	**13.0**	**216**	**1.8**	**114**
	Maximum	85.1	19.0	240	2.3	125
Donkey	Minimum	28.0	5.0	137	0.7	60
	Mean	**65.0**	**7.0**	**156**	**1.0**	**75**
	Maximum	111.5	7.6	170	1.2	90
Rabbit	Minimum	0.34	2.3	9	0.3	23
	Mean	**0.53**	**3.3**	**12**	**0.4**	**26**
	Maximum	0.73	4.0	15	0.6	30

Table (2): Showing the correlation coefficient values*(r) of convolution degree, testicular volume and & Length of the testicular artery in **Farm animals.**

	The correlation between A. testicularis (No. of Convolutions) &	
SPECIES	Volume of testis cm^3.	A. testicularis (Length cm.).
Buffalo	0.92549	0.97473
Ram	0.96442	0.84306
Camel	0.93505	0.93866
Donkey	0.97823	0.93315
Rabbit	0.75814	0.72387

- $r = \pm (0.8 - < 1) \rightarrow$ strong correlation.
  $r = \pm (0.5 - 0.8) \rightarrow$ medium correlation.
  $r = \pm (0 < - 0.5) \rightarrow$ weak correlation.

- Where (r) is the correlation coefficient.

Conclusion

The **size** of the testes

The **length** of the testicular artery

The number of **coils**

Complexity of the architectural vascular pattern

In Ruminants the architectural pattern is more complex than that of Equine, Rabbits and Rodents.

The increase in the coiling number of the vessel will reduce **The speed of blood flow** to the organ

More efficient **heat regulation mechanism**.

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Discussion

Thank You !

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