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***RESEARCH ARTICLE*.....**

Histological and histochemical studies on seminal vesicles in pre pubertal and pubertal ram

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ABSTRACT..... Histological features showed that the seminal vesicles consisted of capsule, interlobular septa, glandular alveoli, interstitial tissue and ducts. The glands were tubulo alveolar with alveoli lined by pseudostratified columnar epithelium comprising of 'A' and 'B' types of cells. The duct system comprised of central collecting sinus, interlobular ducts and main excretory duct. The glandular alveoli were more in number in pubertal than prepubertal ram. The micrometrical observations showed that values were more in pubertal than the prepubertal ram.

KEY WORDS..... Histology, Histochemistry, Seminal vesicles, Pubertal, Prepubrtal, Ram

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INTRODUCTION.....

Very limited information is available in literature on histology and histochemistry of seminal vescile in prepubertal and pubertal ramit.

RESEARCH METHODS.....

Prostated gland were obtained from twelve Deccani sheep bread rams, Animals were divided into two groups. Each group consists of six animals. Group-I prepubertal (2 to 4 months of age) Group-II Pubertal (10 to 24 month of age). 5mm thickness longitudinal and transverse thin tissue pieces were obtained from upper, middle and lower parts of seminal vesciles. The collected thin tissue pieces were fixed in 10 per cent formal saline, 10 per cent formal saline, 10 per cent neutral buffered formaline, cornoys fluid. The fixed tissue were processed by adapting the standard method of dehydration through graded alcohol and clearing through xylol and infiltration. Impregnation in the paraffin wax of 58^{0}C to 60^{0}C melting point.

The tissue contained paraffin wax blocks were prepared by arranging brass metal 'L' molds. The thin sections of the tissue were obtained with the help of manually operated Rotatory microtome machine. The obtained thin tissue were put on the water into the tissue floating bath at the temperature 43^{0}C to float the tissue and facilitate the paraffin embedded tissue ribbon while mounting the sections on the glass slide.

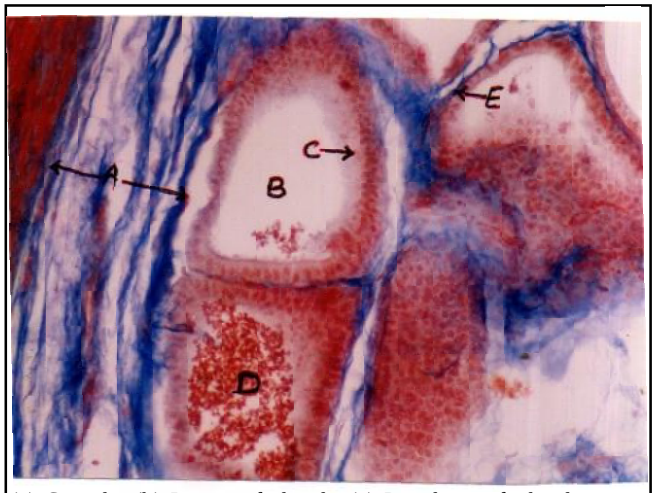
The following staining methods were used to stain the tissue for various histological and histochemical observations. Harrie's Haematoxyline and Eosin for

general (Mukherjee, 1990) Cross mann's Modification of Mallorys Triple Stain for Collagen and elastic fibres (Singh and Sulochana, 1978), McManus Periodic Acid Schiffs (PAS) stain for demonstration of glycogen and mucin (Mukherjee, 1990).Crystal violet stain for amyloids (Glycoproteins) (Mukherjee,1990), Modification of Moury's colloidal iron stain for acid mycopoly saccharide (Singh and Sulochana, 1978). The micro metrical observations were recorded with the help of occular micro meter duly calibrated with stage microns of micrometrical observations were subjected to statistical analysis by standard method of Panse and Sukhatme (1969).

RESEARCH FINDINGS AND ANALYSIS.....

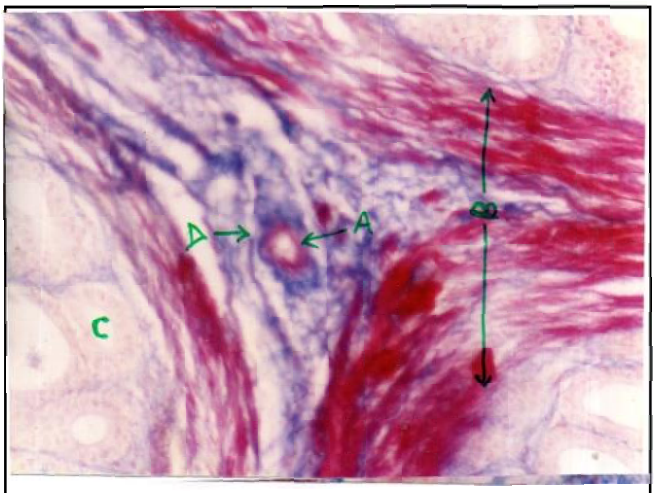
Histoarchitecture of the seminal vesicles were consisted of capsule, septa, intersititial tissue, glandular alveoli and ducts in prepubertal and pubertal ram.

The glands were enclosed in capsule consisted of loosely and irregularly arranged collagen, reticular and smooth muscle fibres with blood vessels and nerve ending (Plate 1). Collagen fibres, reticular fibres, elastic fibres, blood vessels and nerve endings were observed in between muscle fibres.The septae of different size extended from the capsule into the parenchyma of the gland and divided the gland into lobes and lobules. The septa consisted of collagen elastic and reticular fibres, blood vessels and nerve endings (Plate 2).



(a) Capsule, (b) Lumen of alveoli, (c) Pseudostratified columnar epithelium, (d) Secretory material, (e) Collagen fibres
(Crossmann's Modification of Mallory's Tripe Stain 100 X)

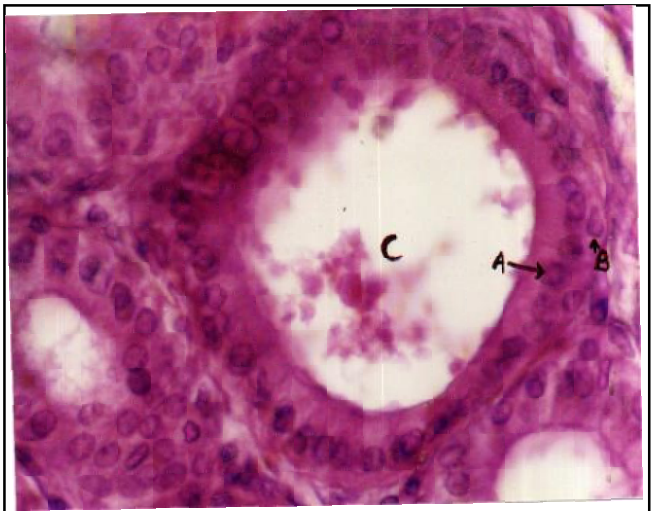
Plate 1: Microphotograph showing cross section of seminal vesicle of pubertal ram



(a) Blood vessels, (b) B-Types cells, (c) Secretory alveoli, (d) Collagen fibres
(Crossmann's Modification of Mallory's Tripe Stain 100 X)

Plate 2: Microphotograph showing cross section of seminal vesicle of prepubertal ram

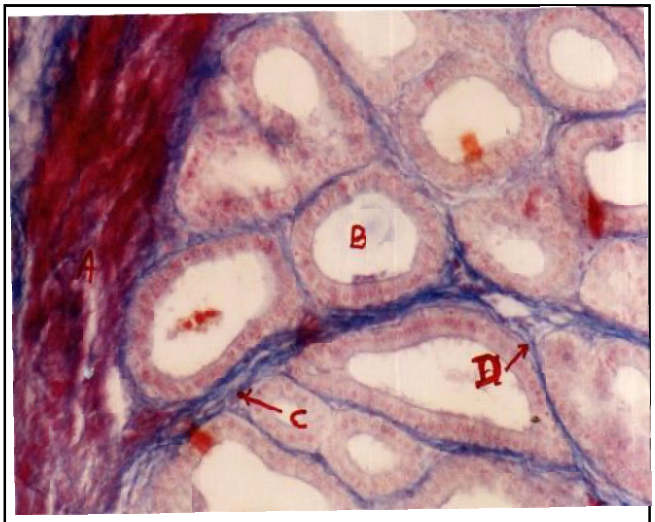
The gland contained alveoli of different shape and size.The alveoli were round, oval and convoluted in shape. These alveoli were lined with pseudostratified tall columnar epithelium comprised of A and B types of cells. Cells were test on the basement membrane closely associated with the myoepithelial cells, comprised of an elongated nuclei (Plate 3). The apical border of the lining epithelium showed bleb like appearance indicating secretory activities of alveoli.



(a) A-Types cells, (b) B- Types cells, (c) Lumen of alveolus
(McManus periodic acid schiff's stain 400 X)

Plate 3: Microphotograph showing cross section of seminal vesicle of pubertal ram

The solid end pieces were densely packed at some places and were lined by pseudostratified columnar epithelium. The solid end pieces were more in number in prepubertal, than the pubertal. The solid end pieces showed small lumen indicated their developing stage in prepubertal group (Plate 4).



(a) Capsule, (b) Lumen of alveoli, (c) Inter labular septa, (d) Collagen fibres
(Crossmann's Modification of Mallory's Tripe Stain 100 X)

Plate 4: Microphotograph showing cross section of seminal vesicle of prepubertal ram

Duct system comprised of intercalated, inter lobular and central collecting sinus and main duct. The central collecting sinus in lobules was lined by pseudostratified columnar epithelium. The interlobular, intralobular ducts united and form main excretory duct which was lined by pseudostratified epithelium.

Histological observations of the seminal vesicles in the present study were in agreement with Farooqui *et al*. (1997) in buffalo calf and Nimse (2003) in bulk. In the glandular epithelium in prepubertal and pubertal ram was appeared pseudo stratified with tall columnar cells. Dellman (1987) and Nimse (2003) recorded similar observations. Kundu (1980) has also reported that tubules and ducts in goat lined by simple columnar epithelium.

The main excretory duct was formed by union of intra lobular and inter lobular ducts and was lined by psedostratified columnar epithelium, recorded in the present study was in agreement with Gupta and Singh (1982) and Nimse (2003).

Micrometrical observations given in Table 1 and in the present study observations were slightly less than the value recorded by Gupta and Singh (1982) in buck and Mugale (1989) in bull calves and in agreement with Nimse (2003) in buck.

PAS reaction showed intense activity at the luminal border of lining epithelium of alveoli and moderate activity for interstitial cells, capsule and septa (Plate 3). Crystal violet staining method showed intense amyloid reaction to the luminal border of the epithelium of secretory alveoli.

Mowry's colloidal iron showed moderate AMP (Acid Mucopoly Saccharide) reaction at apical border of the epithelial lining of alveoli basement membrane, intersititial tissue capsule and septa.

Gupta and Singh (1982); Mugale (1989) and Dellmann (1987) reported the PAS positive reaction at the luminal border of epithelium.Similar observations were recorded in the present study. In the present study crystal violet staining showed intense reaction in the luminal border of epithelium of secretory alveoli which was in correlation with similar findings of Nimse (2003) in buck. The Mowry's colloidal iron stain was mildly positive for all the tissues of seminal vesicles in present study was in agreement with Nimse (2003) in buck.

Table 1 : Micrometrical observations of seminal vesicles glands (µ) in ram

Group / Parameters		Prepubertal	Pubertal	Statistics
Height of epithelium	Range	11.52-17.28	17.28-28.80	S
	Mean	14.20± 0.51	23.23 ± 1.05	
Diameter of alveoli	Range	72.54-96.72	88.66-128.96	S
	Mean	88.66± 2.68	112.84 ± 4.32	
Thickness of capsule	Range	153.14-185.38	201.50-241.50	HS
	Mean	166.03± 3.22	223.62 ± 3.97	
Interlobular septa	Range	88.66-120.90	120.90-153.14	S
	Mean	99.94± 3.22	137.32 ± 2.94	

S = Significant, HS = Highly significant

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LITERATURE CITED.....

Dellman, H.D. (1987). *Text book of veterinary histology,* Indian 4th Ed. K.M. Varghese, Co., Bombay-31, pp.286-312.

Farooqui, S.U., Chandra, G. and Pant, H.C. (1997). Histomorphological study of accessory sex glands in Borbavi goate *Indian J. Vet. Anatomy*, **9** (1/2) : 21-28.

Gupta, A.N. and Singh, Yashwant (1982). Effect of castralation on the cytology of vesicular gland sin goat. *Indian J. Anim. Sci*., **52**(2) :72-79.

Kundu, P.B. (1980). Anatomical studies on the accessory male sex glands (gross and microscopic) of the Indian goat (Jamunapari and Cross Jamunapari*). Indian J. Anim. Health*, 151-154.

Mugale, R.R. Shingathgiri, R.K. and Bhosle, N.S. (1989). Cytological study of alveolar cells in the vesicular glands of entire (uncastrated) and castrated male buffalo calvs (*Bubalus bubalis*). *Indian Vet.* J., **66** (11) : 1052-1054.

Mukherjee, K.L. (1990). *Medical laboratory technology*. Tata Mcgraw Hill Publishing Co. Ltd. New Delhi, India, pp. 1111-1176.

Nimse, R.G. (2003). Histological and histochemical studies of testis and accessory sex gland in buck M.V.Sc. Thesis, Maharashtra Animal and Fishery Sciences University, Nagpur, M.S. (India).

Panse, V.G. and Sukhatme, P.V. (1969). *Statistical methods for Agricultural workers*, ICAR Publications, New Delhi, India.

Singh, U.B. and Sulochana, S. (1978). *Hand book of histological and histochemical techniques*, 2nd Premier Publishing House, 5-1-800, 1st Floor, Kothi, Hyderabad-95.