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Histomorphological study on vesicular and ampullary glands of the donkey

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Vesicular and ampullary glands are male accessory sex glands contributing significantly to the seminal plasma. They produce variety of secretory materials. Its secretion provides a vehicle for the transport, nourishment and activation of spermatozoa within the female genital tract (Banks 1993). The present study was aimed to elucidate histomorphology of vesicular and ampullary glands of donkey.

Study was conducted on vesicular and ampullary glands of 3 adult donkeys. Immediately after sacrificing, the tissues were collected in neutral buffered formalin and processed by Cedar Wood Oil Schedule (Luna 1968). The paraffin sections of 5 µm thickness were stained with Mayer's haematoxylin and eosin stain (Luna 1968). Micrometrical observations were recorded from randomly selected areas using Filar's ocular micrometer.

Vesicular gland

The lobulated vesicular gland was compound tubulo-acinar type with interlobular muscular tissue. In each lobule, the epithelium was thrown into folds of different sizes and shapes (Figs 1, 2). The epithelium was simple columnar with rounded nuclei (Figs 1,2) and occasional basal cells as reported earlier in domestic animals by Trautman and Fiebiger (1957), Dellmann and Wrobel (1987). The epithelial height was 14.79±1.76µm.

The lamina propria submucosa consisted of loose connective tissue extending into epithelial folds (Figs 1,2). The glandular acini were also lined by simple columnar epithelium with basal cells. These findings are in accordance with Moussa *et al.* (1983) in buffalo bull. However, Mugale *et al.* (1989) reported pseudostratified columnar epithelium in some of alveoli. The average diameter of alveoli was 80.47±4.53 µm. Occasional rounded eosinophilic masses were also seen in the ducts and acini (Fig. 2) as reported in bull (Trotter 1959) and Barbari goat (Farooqui *et al.* 1997). The intralobular ducts were lined by simple cubodial epithelium.

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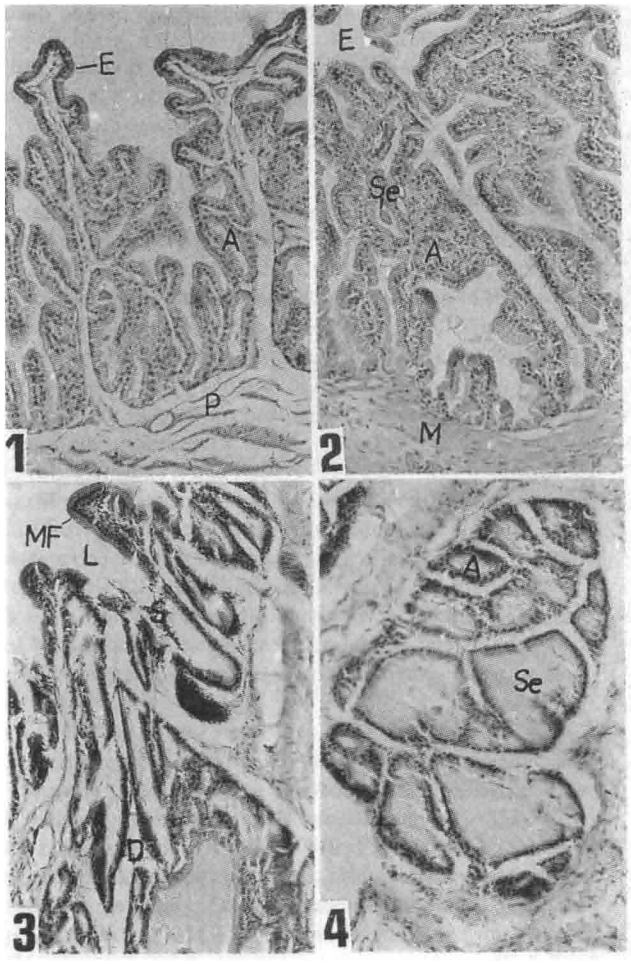

Figs 1-4. **1.** Section of vesicular gland of adult donkey showing epithelial folds (E), glandular acini (A), and propria submucosa (P). H & E × 350. **2.** Section of vesicular gland of donkey showing epithelial folds (E), glandular acini (A), eosinophilic secretory masses (Se) and interlobular muscular tissue (M). H & E × 350. **3.** Section of ampullary gland of donkey showing duct (D) opening into lumen (L) of gland surrounded by crypts of mucosal folds (MF) with spermatozoa (S). H & E × 350. **4.** Section of ampullary gland of donkey showing glandular acini (A) filled eosinophilic secretory material (Se). H & E × 350.

Ampullary glands

The ampullary glands were tubulo alveolar type and these consisted of a distinct lumen surrounded by thick wall made up of lamina epithelialis, propria submucosa, tunica muscularis and tunica serosa/adventitia. The lamina epithelialis was folded and within its crypts spermatozoa were seen (Fig. 3). The average height of mucosal folds was 344.3±6.45 µm. The lining epithelium was simple columnar (Fig. 3) with average height of 19.38±0.21 µm. At some location stratified columnar epithelium was also noticed. The above observations were in agreement with earlier report on buffalo bull (Anurag 2000) and in stallion, ruminants and dog (Dellmann and Wrobel 1987).

The glandular alveoli with average diameter of 242.96±11.2 µm were located in propria submucosa. These alveoli were lined by cuboidal to low columnar epithelium (Fig. 4) as reported earlier in bull and stallion (Dellmann and Wrobel 1987). The average epithelium height was 13.02±0.69 µm. Few alveoli were also lined with pseudostratified columnar epithelium. The alveoli were filled with eosinophilic secretory material (Fig. 4) and these drained into ducts. The ducts were lined by low columnar and pseudostratified columnar epithelium and these opened within the crypts of mucosal folds extending into the lumen of ampullary gland.

SUMMARY

Histomorphology of vesicular and ampullary glands of donkey were studied. Micrometrical observations were recorded from randomly selected areas. Histomorphology has been discussed in the study.

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