12.7: Male accessory sex glands

The accessory sex glands function to: 1. nourish spermatozoa, 2. activate spermatozoa, 3. clear the urethral tract before ejaculation, 4. produce secretions that assist in transport to the female reproductive tract, 5. in some species (rodents), form a plug that helps retain spermatozoa in the female reproductive tract.

There is variation between species in terms of presence, size, location and function of these glands. The glands are derived from outpouchings of the ductus deferens or the urethra during development.

The structure of most of the accessory sex glands is arranged as branched tubular or tubuloalveolar pattern which are arranged in lobules. Each lobular structure drains into the ductus deferens or urethra.

The four major accessory sex glands are the ampulla, the vesicular glands (seminal vesicles) and the bulbourethral glands.

1. **Ampulla** – This gland is an enlargement of the terminal portion of the ductus deferens and consists of branched tubular or tubuloalveolar glands without a specialized excretory duct. The ampulla is fully developed in ruminants, and horses where the glandular structures are located in the lamina propria. These glands are absent in dogs, cats and swine.

2. **Vesicular glands (seminal vesicles)** – These glands are typically paired and are composed of simple columnar glandular epithelium which is arranged in lobules. The excretory ducts are lined by stratified columnar epithelium. Vesicular glands are absent in carnivores but present in horses, swine and ruminants.

3. **Prostate glands** – The prostate glands consists of the main body and a disseminate portion. The body is surrounded by a thick collagenous capsule while the disseminate portion is embedded in loose collagenous matrix extending along the dorsal aspect of the urethra and eventually extends laterally and ventrally to join the body. The gland is histologically composed of tubuloalveolar structures composed of low columnar to cuboidal cells, have apocrine gland type secretory activity and have acidophilic granules and lipid droplets in the epithelial cytoplasm. The body is well developed in carnivores and horses while the disseminate portion is better developed in cattle and swine. Rams do not have a well developed prostate.
4. **Bulbourethral glands** – These are paired structures located dorsolaterally to the pelvic urethra and are composed of paired tubuloalveolar glands with columnar epithelium. The ducts of this gland are lined by columnar, pseudostratified or transitional epithelium. All domestic animals except for dogs have bulbourethral glands. The mucus production from this gland has lubricating function and clears the urethra of urine.

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**FIGURE(S):** Accessory sex glands, Penis