

Anatomy

The bovine mammary gland usually comprises four quarters with one teat each. The teat consists of the teat wall, apex with the streak canal, and teat sinus (Figure 12.2.6-1). Proximally, the teat sinus is continuous with the corresponding gland sinus. The annulus (venous ring of Furstenberg) demarcates the teat sinus from the gland sinus. It contains one/more large veins that encircle the base of the teat. The wall of the teat consists of the following layers: innermost is the teat sinus which is lined by a two-layered cuboidal epithelium, followed by the submucosa, connective tissue layer, and smooth muscle layer. Externally, the teat is covered by a stratified squamous epithelium. The connective tissue layer contains numerous large blood vessels that become engorged with blood during milking and suckling processes. The streak canal (teat canal, papillary duct) is lined with a stratified squamous epithelium and keratin. It varies in length between 5 to 10mm and is located at the apex of the teat. It connects the teat sinus to the outside ending at the teat orifice. The rosette of Furstenberg—where the stratified squamous epithelium of the streak canal meets the two-layered cuboidal epithelium of the teat sinus—represents the proximal delineation of the streak canal. The teat sphincter is located beneath the rosette of Furstenberg and consists of circularly oriented bundles of smooth muscle fibers. The teat sphincter and keratin lining of the streak canal are responsible for milk continence and preventing ascending infections.

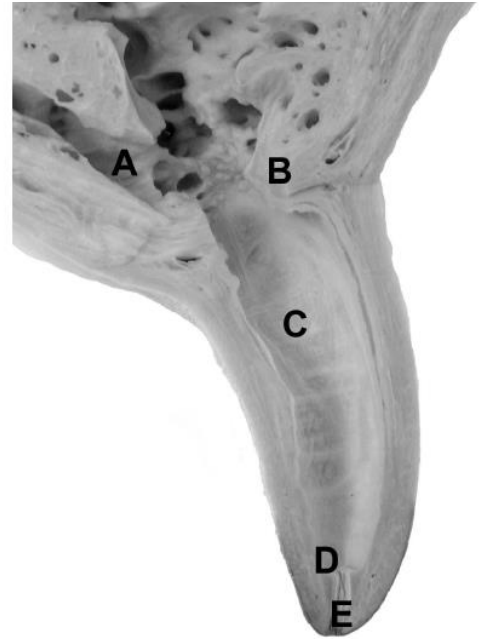


Figure 12.2.6-1 Sagittal section through teat and gland sinus of an adult lactating cow. A, gland sinus; B, annular ring; C, teat sinus; D, rosette of Furstenberg; E, streak canal.

Fubini S, Ducharme N. Farm animal surgery. United States of America: Elsevier (USA); 2004.