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Epididymis in the Agouti (Dasyprocta azarae): Light Microscope Study

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Abstract : The agouti is a wildlife rodent that can be used as an alternative source of animal protein and this species has been raised in captivity in Brazil with the aim of providing meat. Thus, the knowledge of their reproductive biology and morphology of the reproductive organs is important. The objective of this study was to describe the morphology of epididymis in the Azara's agouti, by light microscopy. Samples of epididymis were obtained from five adult Azara's agouti (Dasyprocta azarae) during castration surgery performed at the Municipal Zoo of Catanduva, Brazil. Fragments of the epididymal regions (initial segment, caput, corpus and cauda) were collected. The biological samples were immediately fixed in paraformaldehyde for 24 hours, followed by histologic procedures comprising embedding in ParaplastTM (Sigma, St. Louis, MO, USA), sections of 5 µm, and staining with HE and Masson's trichrome. The epididymis was a highly convoluted tubule that links the testis to the vas deferens. The epithelium lining was pseudostratified columnar surrounded by a periductal stroma. The epithelium contains several cell types: principal, basal, apical, clear, and hallo cells. Principal cells were the most abundant cell type. There were observed also migratory cells named halo cells. The caput epididymis was divided into two different regions: initial segment and caput. The initial segment has a very wide lumen, a high epithelium with conspicuous microvilli and the lumen was wide with exfoliated material. The other region of the caput epididymis, showed a lower epithelium when compared with the initial segment, large amounts of spermatozoa in the lumen, and a cytoplasmic vacuolization. This region presented many narrows cells. Many spermatozoa appeared in the lumen of corpus epididymis. The cauda region had a lower epithelium than the other epididymal regions in the agouti. The cauda epithelium presented plicae protruding into the lumen. Large amounts of spermatozoa are also present in the lumen. Small microvilli uniformly arranged so as to form a kind of "brush border" are observed on the apical surface of the cauda epithelium. The pattern of the epithelium lining the duct of the agouti epididymis does not differ greatly from that reported to other mammals, such as domestic and wildlife animals. These findings can cooperate with future investigations especially those related to rational exploration of these animals. All experimental procedures were approved by the institutional ethics committee (CEUA 796/2015). This study was supported by FAPESP (Grants 2015/23822-1).

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