

Morphological changes of the spermatozoa at different regions of the epididymis of the indigenous bulls of Sri Lanka

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Abstract

The spermatozoa maturation in the epididymis leads to functional and morphological changes of spermatozoa. Therefore the objective of this study is to assess the morphological changes of the spermatozoa at different regions of the epididymis of indigenous bulls of Sri Lanka. Epididymides were collected from five mature healthy bulls and the epididymal fluid was taken from six different regions, two from each head, body and tail of the epididymis. Thin smears from epididymal fluid were prepared and stained with eosin-nigrosin to assess the morphological variation of spermatozoa. Two hundred sperms were counted at each site while identifying the sperms with cytoplasmic droplets and abnormalities. Results were expressed as mean percentages and the comparison of means were done using SAS statistical package. There was a gradual reduction in sperms with proximal cytoplasmic droplets as go along the head (72.2%), body (16.9%), and tail (2.2%) region. The spermatozoa with middle cytoplasmic droplet were higher in the body region (13.7 %) than in head (7%) and tail (1.1%) regions. Further, the highest number of spermatozoa with distal cytoplasmic droplet were observed in the tail region (40.35%) followed by body (11.1%) and head (1.0%) regions. The reduction of spermatozoa with proximal cytoplasmic droplets from head (70%) to tail (< 2.5%) indicates sperm maturation during epididymal transit. Further, the number of abnormal sperms was reduced from head to tail (Head – 10%, Body – 8%, Tail – 4.5%). It is established that sperm maturation occur during epididymal transit and that the cytoplasmic droplet migrates from a proximal position to a distal position during maturation.