Abstract

The objectives of this study were to evaluate whether spermatozoa within epididymides stored at 4 °C remain their motility and are able to penetrate the feline oocytes in vitro. Testes with attached epididymides, obtained adult domestic cats at orchietomy, were refrigerated at 4 °C, and spermatozoa were collected from caudae epididymides at 0, 24 and 48 h. The effect on spermatozoa that had been refrigerated within epididymides for various times were determined by assaying sperm motility, sperm viability, sperm abnormality, and measuring the fertilization ability to feline oocytes in vitro. There was no significant decrease in motility and viability of spermatozoa recovered from epididymides stored at 4 °C within the first 24 h of refrigeration before and after freezing. In addition, no significant difference was found percent abnormal morphology of spermatozoa among the groups. The fertilizing ability of frozen-thawed spermatozoa obtained 24 h after storage is similar to that of control spermatozoa. Some spermatozoa recovered from epididymides that had been refrigerated for 48 h retained their capability to penetrate the feline oocytes, although the percentage of penetration rate was less than of control and 24 h stored sperm (41.2 ± 4.8 % vs 68.4 ± 5.2 % and 60.9 ± 3.6 %). Even after storage for 48 h at 4 °C, motile spermatozoa could be recovered from epididymides, and such refrigerated spermatozoa after freezing were capable of penetration to oocytes in vitro. These data indicate that pre-freeze and post-thaw sperm samples showed viable spermatozoa up to 48 h after the animal’s death, although their quality declined significantly as post-mortem storage time increased.

Key words: epididymal spermatozoa, cryopreservation, domestic cat