D 208

Epididymal epithelium may depend on rete - testis fluid for the maintenance of its structural integrity while epididymal sperm transfer time of the hamster may be longer than 40 days

In many mammals, sperm are neither motile nor fertile immediately after their release from the germinal epithelium and require a period of maturation in the epididymis. Sperm transit through the epididymis, an obligatory passage, at different time intervals in different species. We studied sperm transfer times and sperm retention times of the different regions of the hamster epididymis. Hamster epididymis was ligated from the initial segment. Their epididymal sperm characteristics were studied on days (treatments) 3, 6, 12, 15, 18, 24, 18, 32, and 40. Total number of sperm in each treatment was significantly different. Sperm transfer times of each region were different in caput 18 days, corpus 14 days and cauda 8 days. Sperm motility was retained in the caput region until 12 days post ligation while in corpus and cauda this was 18 and 32 days. Results showed higher motility reaction and storage increase towards distal regions of the epididymis, while sperm transfer time increased towards the proximal regions of the epididymis. Epithelium structure showed marked alterations compared to control data. Epithelium become stratified after 12 days post ligations in proximal regions of the epididymis and in the cauda, epithelium became more flattened. After 24 days post ligations epithelium showed projections into the lumen of the duct. Contents of the duct showed mucous appearance with sperm debris at first and later included epithelium parts including cell debris and parts of the nuclei. By the day 24 post ligation majority of sperm were immotile thus showed partly loss of partly loss of epithelium function along with structural changes. The study showed characteristic clustering patterns of epithelium under experimental conditions. The study stressed characteristic of rete testis fluid and continuous sperm flow to the epididymal duct for proper function of the epididmis. Our findings are supported by previous many molecular level findings on epididymal sperm maturation. Nevertheless, this study has shown that in hamster epididymal perm transit time could be as long s 40 days.