

Table 2: Number of Points Overlying the Wall and Lumen, as well as the Spermatozoal Clump, in Epididymidis of Adult Rats Treated with Dietary Melatonin (in unit area of 0.0025mm²).

<i>Daily dose of melatonin in µg/kg body wt</i>	<i>Points on epididymal wall</i>	<i>Points on epididymal lumen</i>	<i>Points on epididymal Spermatozoal clump</i>
Control	16.17±1.93	31.96±1.34	7.33±2.15
125	17.16±0.09 NS	41.41±1.21*	10.15±0.11‡
250	17.98±1.01†	40.35±1.02*	11.06±1.02*
500	29.87±1.62*	10.26±1.31*	5.09±1.42**
750	21.26±1.07 NS	19.24±1.28*	6.92±1.91NS
1000	11.13±1.05*	51.92±1.97*	24.43±2.16*

-Data were expressed as mean ± SD of 8 rats.

-When any dose-group was compared with its control, the difference was statistically significant:

(* P<0.00001; ** P<0.004 † P<0.008; ‡ P<0.02; NS= non significant).

Discussion

The epididymal weight was significantly unaffected by melatonin in the instant work (Table 1). The explanation for this might be highlighted by the fact that epididymal weight principally dose not follow its function status ⁽¹³⁾. Changes in epididymal wall thickness, lumen diameters, and spermatozoal clumps showed a clear positive effect of melatonin on those parameters (Table 2); i.e., they were steadily increased with the increase in amount of doses up to the level of 500 µg/kg dose, then after decreased with 750 µg/kg dose and they were noticed to increased again at 1000 µg/kg dose. This could be due to the concept that melatonin is well designed to exert its physiologic

action in dose – dependent manner, being stimulating at normal therapeutic level and harmful at higher doses ^(14, 15).

The epididymal tubule wall was significantly thicker with more frequent existence of nuclei observed in those groups treated with 125 , 250 and 500 µg/kg dose, and much less in group of 750 µg/kg ,then regressed at 1000 µg/kg dose, these findings might indicate the increase in number of epididymal epithelial cells, which could be the consequence of exogenous melatonin on the those cells, and affecting their function directly through melatonin receptors found in all tissues and cells ⁽¹⁶⁾, or indirectly through the pituitary gland affecting its secretion of FSH there by promotes other sexual