EFFECTS OF AGE AND ANDROGENS ON THE ULTRASTRUCTURE OF THE PINEAL GLAND IN MALE ALBINO RAT

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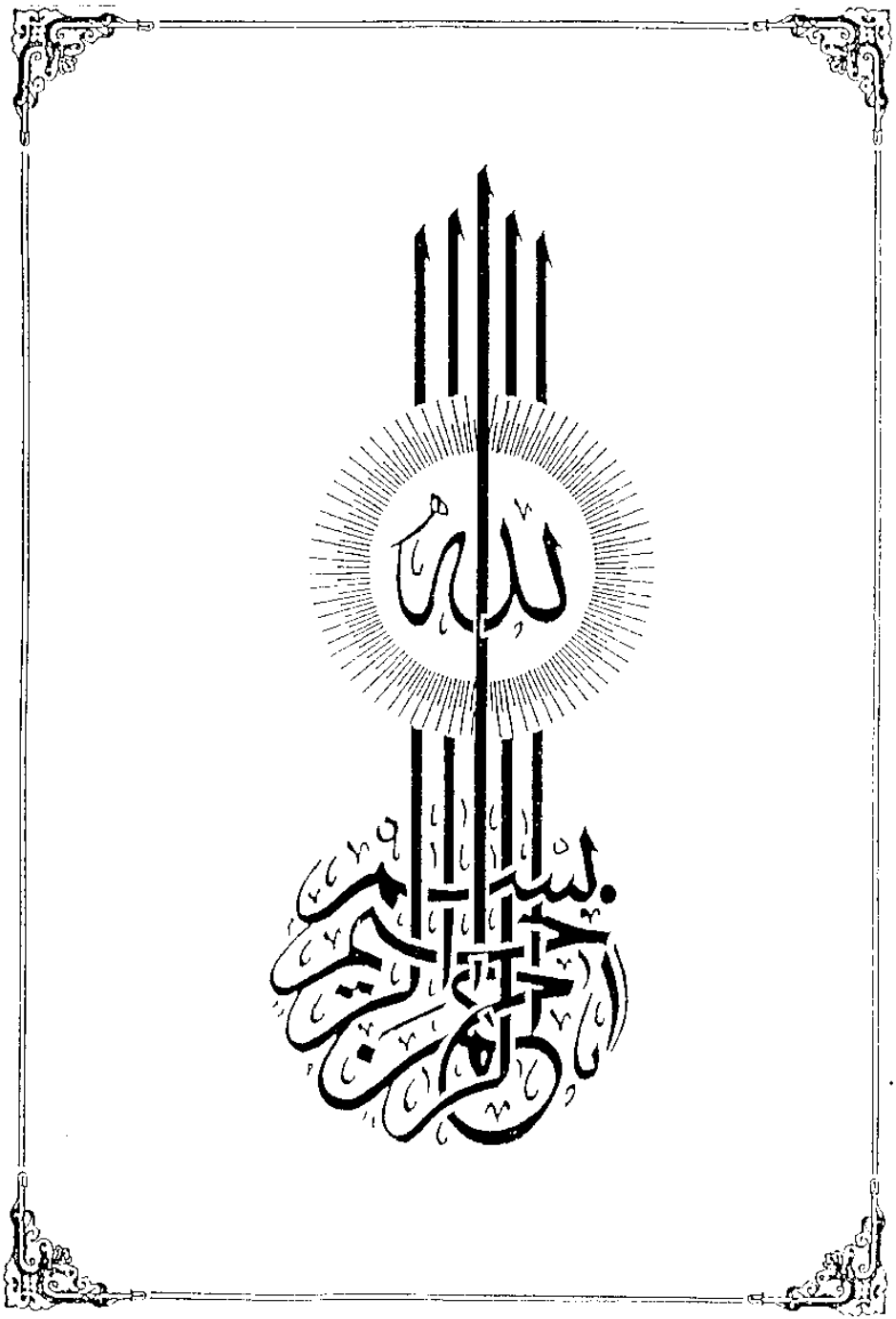

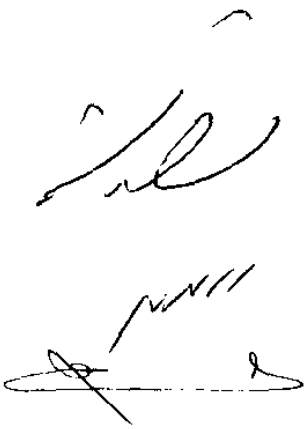

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The pineal gland is one of the most mysterious glands of the body. Many aspects of its structure and function are still unclear; and its main product, melatonin, is now receiving much attention. The structure of the pineal gland is known to change with age; such changes were carefully studied using the light microscope in several animal species including the rat *(Ito and Matsushima, 1967; Boya and Calvo, 1984)*. Reviewing the literature, it was found that some authors described the ultrastructure of mammalian adult pineal gland *(Wartenberg, 1968; Kappers, 1976 and Bhatnagar, 1992)*, others were concerned with the ultrastructural changes of the pineal gland over a narrow postnatal age range *(Ito and Matsushima, 1967; Calvo and Boya, 1983; Garcia-Mauriño and Boya, 1992)* in the mice, rat and rabbit respectively.

However, the detailed description of the ultrastructural changes affecting the pineal gland over an extended age range from birth to mature adulthood was not adequately clarified in the rat.

Furthermore, the pineal gland is known to influence the function of the endocrine glands including the gonads through the hypothalamo-pituitary system *(Motta, Fraschini and Martini, 1967; Kappers, 1975 and 1976)*.

On the contrary, the effect of gonadal hormones on the structure of the pineal gland received little attention. *Karasek and Marek (1980$_b$)* studied the changes in the ultrastructure of the pineal gland after estradiol administration in adult male rats. *Przybylska, Wyrzykowski and Wyrzykowska (1988)* and *Wyrzykowski, Przybylska and Wyrzykowska (1990)* studied the changes resulting from estradiol and progesterone administration in immature female pigs. *Karasek and Marek (1980$_d$)* studied the pineal gland of adult male albino rats after testosterone administration.

Accordingly, it became the aim of this present work to verify the light and electron microscopic structural changes occurring in the pineal gland of male albino rat from birth up to adulthood (newborn, prepubertal, pubertal and adult).

Meanwhile, immature male albino rats were injected with the testosterone in an attempt to explore the effect of androgen administration on the structure of the pineal gland at this age.