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JOURNAL ARTICLE

Morphology of testicular spermatozoa obtained by testicular sperm extraction in obstructive and nonobstructive azoospermic men and its relation to fertilization success in the in vitro fertilization-intracytoplasmic sperm injection system

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The aim of the present study was to evaluate the morphology of testicular spermatozoa by 3 different determinants. Sperm cells were obtained and their morphology was evaluated from 27 testicular sperm extraction (TESE) operations, of which 20 men had nonobstructive azoospermia and 7 had obstructive azoospermia. In 17 cases, 2 biopsies were obtained from 2 different locations of the testis. Only mature spermatozoa presenting full-grown tail (tail dimension about 10-fold greater than the head dimension) were counted. Three characteristics of sperm morphology were evaluated: head dimensions, and acrosome and midpiece irregularities. The percentage of sperm cells with normal morphology (considering the 3 characteristics) in specimens from patients with obstructive and nonobstructive azoospermia were 47% +/- 4.6% and 29 +/- 1.8%, respectively ($P < .01$). The percentage of spermatozoa with normal head dimensions were 76% +/- 3.2% and 63% +/- 2.6% ($P > .05$), those with normal acrosome were 58% +/- 4.6% and 41% +/- 3.4% ($P < .05$), and those with normal midpiece were 74% +/- 4.1% and 67% +/- 1.6% ($P > .05$), in obstructive and nonobstructive azoospermia, respectively. No significant differences were observed in sperm morphology between different locations of the testis. Sperm morphological characteristics were not associated with fertilization rate in intracytoplasmic sperm injection (ICSI). Follicle-stimulation hormone and luteinizing hormone were inversely correlated with normal morphology of testicular spermatozoa ($r = -0.49$ and $r = -0.47$, respectively; $P < .05$). It can be concluded that a relatively high portion of testicular sperm are morphologically normal. The higher rate of normal spermatozoa in obstructive azoospermia compared with nonobstructive spermatozoa suggests that the factors leading to azoospermia may affect testicular sperm morphology. The morphological characteristics of testicular sperm do not affect fertilization rate in ICSI.

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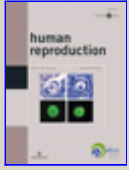
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