

Journal of Andrology, Vol 18, Issue 6 623-636, Copyright © 1997 by The American Society of Andrology

JOURNAL ARTICLE

Morphometric and immunocytochemical study of the fetal, infant, and adult human vas deferens

J. Regadera, G. Espana, M. A. Roias, J. A. Recio, M. Nistal and C. A. Suarez-Quian

Department of Morphology, School of Medicine, Autonomous University of Madrid, Spain.

The human vas deferens (VD) is often considered simply as a conduit to transfer mature sperm from the epididymis to the ejaculatory duct. The cells that make up the epithelium of the VD, however, exhibit many characteristics of cells found in more complex epithelia, which are involved in absorption and/or secretion. In the present investigation, morphometry was utilized to characterize in detail the changes incurred by the human VD during its development, growth, and aging and to determine if these changes correlate with testicular maturation. In addition, the specific types of keratins present in the epithelial cells were defined, as well as desmin distribution in the muscular layers, during the various phases of the development, growth, and involution of the human VD. Results of the morphometric study are consistent with the interpretation that the development, growth, and aging of the VD are delayed, but parallel to, the identical phases exhibited by the human testis. Further, a differential expression of distinct keratin types was observed in the VD during the various phases examined in this study. Taken together, these two correlations may suggest that the VD is unlikely to function solely as a conduit for sperm. The rationale for this interpretation is as follows: 1) the complex developmental and maturational changes measured in the present investigation in the human VD are common to other absorptive and/or secretory epithelia; and 2) these changes parallel developmental changes observed in other androgen-dependent epithelia of the male reproductive tract, which also function to contribute components to seminal fluid as well as to provide a conduit for sperm.

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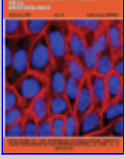
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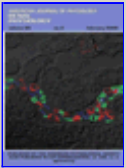
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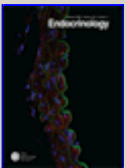
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