

Invited Speaker Presentation

New Views on the Functional Histology of the Human Uterine Tube – New Possible Mechanisms of Tubal Infertility?

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Abstract: Objectives: The histological findings in normal uterine tubes have been described sporadically in the scientific literature. The major reason for the lack of investigation in this regard has been the success of in vitro fertilization techniques which enable bypassing of the uterine tubes, so these organs have become somehow neglected, since they are no longer vital for successful conception. This has resulted in the lack of interest in medical community to study tubal morphology. **Material and Methods:** Summary of our previously published results on histological, immunohistological and electron-microscopic analysis of human uterine tubes, with focus on tubal epithelium and intraepithelial T- lymphocytes, tubal mucosal lymphatic lacunae and tubal telocytes. **Results and Conclusions:** Since 1904, no one has paid any comprehensive attention to lymphatic drainage of the uterine tubes at the level of lymphatic capillaries. The habilitation thesis authored by a German physician Paul Kroemer was the first to describe the lymphatic lacunae inside the tubal folds, which he named "Lymphbahnen" ("lymphatic channels"). Despite this first description has been existing for more than 110 years, there is no mention of these lacunae in most of the current literature. This status quo is even more striking when we consider that these lymphatic lacunae may be responsible for the thickening of the fimbriae during the oocyte pick-up and the maintenance of the tubal fluid. Similarly, histological literature also ignores the issue of nomenclature regarding the epithelial cells of the uterine tubes, even though this tubal epithelium may be the source of high-grade ovarian carcinomas. A detailed identification of intraepithelial immunologically active cells can elucidate the questions regarding the immune suppression within the uterine tubes. In our study, we identified intraepithelial regulatory T-lymphocytes. These T-lymphocytes can be involved in the process of immune tolerance of non-self cells (sperm) and partially non-self cells (those of developing embryo), preventing the activation of local immune responses. The last decade of research confirmed the presence of newly discovered population of cells within the interstitium of female genital organs, including uterine tubes. The real significance of these cells – telocytes – however is still at the level of highly hypothetical conjectures.

Keywords: uterine tubes, tubal epithelium, intraepithelial T-lymphocytes, lymphatic lacunae, tubal telocytes

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