

H. Strasser, A. Herms , E. Kavalier*, A. Stenzl, G. Bartsch, H. Fritsch**

Departments of Urology and Anatomy**, University of Innsbruck, Austria;
Department of Urology*, Mount Sinai Medical Center, New York, USA

PEDICLES OF THE MALE AND FEMALE URETHRA: FETAL DEVELOPMENT

Aims of Study: Fixation of the urethra and the rhabdosphincter to the pubis is thought to be imperative to the maintenance of continence in adult patients. To gain a better understanding of the tissue supports and pedicles of the male and female urethra, serial sections in fetuses were studied.

Methods: In 42 male and female fetuses, ranging in gestational age from 9 to 37 weeks, the topography around the urethra was examined. The pelvis of each specimen was impregnated with epoxy resin and cut with a diamond wire in either the transverse, sagittal or coronal plane from 300 to 700 microns in thickness. The sections were then stained and viewed at magnifications from 4x to 80x.

Results: After examining the tissue surrounding the urethra in the fetuses, we were unable to find any ligamentous structure fixing the urethra and the rhabdosphincter to the pubic bone. The ventral aspect of the rhabdosphincter and the urethra remain free of the pubis throughout their course in all stages of fetal development.

Conclusions: The urethra and rhabdosphincter have no ligamentous fixation to the pubic bone during fetal development. Supported only by the anterior fibers of the levator ani muscle, urethral continence may be compromised during pelvic operations or childbirth when the hiatus is widened too much, resulting in the separation of the urethral connective tissue from the connective tissue encasing the levator ani muscle.