

A New Contribution to the Discussion of the Existence of a Urethral Sphincter Mechanism in the Female

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For many years there has been discussion concerning the existence of a sphincter mechanism in the female urethra. A very sensitive technique based on pressure measurements with microtransducers has previously been applied for recording of urethral pressure profiles in women. These investigations have clearly demonstrated that the female urethra has an intraluminal peak pressure about 11–12 mm from the inner meatus. In order to examine the adrenergic innervation of the female urethra the following investigation was made: the urethral pressure profile was recorded in eleven female guinea pigs. From these investigations the maximal urethral pressure point was localized with great accuracy. The animal was then killed and the urethra was examined with the Falck-Hillarp technique to visualize adrenergic nerve terminals. Serial sectioning of the organs revealed that in the part of the urethra where the maximal intraluminal pressure was recorded there was an increased density of adrenergic nerve terminals. In both directions from this area, i.e. towards the bladder and towards the external meatus the density of such nerve terminals decreased markedly.

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