during perineal examination and 24x during introital examination Figure 2. The width of inner orifice of the urethra was, on average, 6.81mm at rest and 9.15 mm during Valsalva.
Measuring error was 0.53 mm.

CONCLUSION
Ultrasound examination is an important part of urogynecological examination. The use of contrast medium significantly improves the dignostic possibilities of perineal ultrasound examination. Detailed monitoring of proximal urethra during introital examination increases the diagnostic possibilities of urethra funnelling without using contrast medium. Combination of dynamic examination with optimal visualising of the behavior of the bladder neck gives us new opportunities for monitoring incontinence and the understanding its
pathophysiology.

Table No. I.
Width of the urethra orifice for women with funnelling

	rest	ValsalvaxD	
CM, n=25			
x	6.9±0.53	9.1±0.55	2.18
s	1.25	1.38	0.58
WCM,n=24			
x	6.81±0.51	9.15±0,56	2.42
s	1.32	1.44	0.48

CM= contrast medium, WCM= without contrast medium

Figure 1 – Funneling with contrast medium

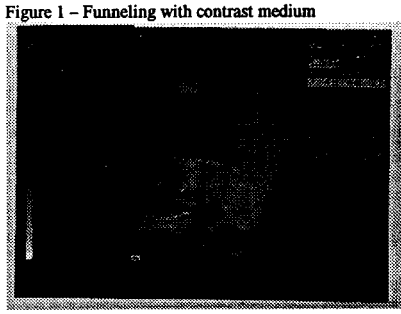
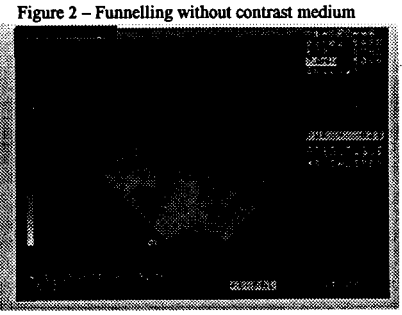


Figure 2 – Funnelling without contrast medium



60A

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DEVELOPMENT OF THE STRIATED MUSCLE IN THE HUMAN INTRINSIC URETHRAL SPHINCTER (IUS)

Aims of Study

Transdifferentiation of smooth to skeletal muscle in the distal mouse esophageal muscle and in the rat intrinsic urethral sphincter (IUS) has been shown previously. To gain insight into the development and anatomical composition of the human intrinsic urethral sphincter we studied the expression of smooth and striated muscle and nerve fiber proteins, according to the age of gestation.

Methods

The IUS of 9 human fetuses autopsied after idiopathic intrauterine death was studied in 3 female and 6 male fetuses (gestational age 20 – 40 weeks; mean 29.8 +/- 7.1). Sections of the IUS were stained conventionally and immunohistochemically with antibodies to alpha - smooth muscle actin, desmin, actin, myogenin, neural cell adhesion molecule (N-CAM) and protein gene product 9.5 (PGP 9.5).

Results

The striated muscle of the intrinsic urethral sphincter could be identified from the 20 4/7 week of gestation onwards. Immunoreactivity for actin, desmin and (N-CAM) was observed from week 20 through week 40. No smooth muscle antigen was identified in the striated muscle component of the IUS. PGP 9.5 could be identified as early as week 35 of gestation. Myogenin immunoreactivity was only found until week 32.

Conclusions

Sequential muscle marker protein expression is typical for the development of the IUS. In contrast to the rat - where the striated muscle of the IUS is only identified in the neonate-, in humans the striated muscle can be identified at least from week 20 of gestation onwards. Myogenin, key factor for activation of myogenesis of striated muscle, is expressed until week 32; suggesting that at this time transdifferentiation of the human skeletal muscle of the IUS is completed.

References
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60B

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HISTOLOGICAL AND IMMUNOHISTOCHEMICAL STUDY OF THE RHABDOSPHINCTER IN HUMAN BEINGS

Aims of Study

There is increasing evidence that the rhabdosphincter may play an important role in the continence mechanisme following prostatic surgery. At the same time there is still no agreement on its anatomy and composition. We therefore performed an histological and immunohistochemical study of the rhabdosphincter and levator ani muscle with special regard to the muscle components.

Methods

The rhabdosphincter of 10 fetuses (3 females, 7 males), 5 male cadavers and 15 prostate cancer patients were studied. Paraffin sections were stained conventionally with Masson-Trichrome and Hematoxylin–Eosin and immunohistochemically with antibodies against the slow–twitch (Sigma M–8421, clone NOQ 7.5.4.D) and fast–twitch (Sigma 4276, clone MY – 32) striated muscle fibres.

Results

	rhabdosphincter		levator ani muscle
	fetuses	adults	adults
Fast-twitch fibres in %	**65.6%**	**21.3%**	**35.1%**
Slow-twitch fibres in %	34.4%	78.7%	64.9%
Fast-twitch fibres ϕ in μm	**6.33μm**	**12.84μm**	**26.07μm**
Slow-twitch fibres ϕ in μm	6.46μm	13.54μm	31.83μm

The male rhabdosphincter has a characteristic main component around the membranous urethra. In males it has a dorsal hiatus, becomes thinner by penetrating in 3 to 4 distinguishable sheets the prostatic pseudocapsule and ends at the anterior base of the bladder neck (u-shaped crossection). In accordance with the decrease of muscle volume the proportion of fast-twitch striated muscle fibres also decreases.

Conclusions

This is a direct proof of slow-twitch and fast–twitch fibres on paraffin sections of the rhabdosphincter and the modification of its composition with age. There is evidence that the rhabdosphincter may have two clearly distinguishable functional units