

was obtained by dividing the sum of the connective tissue area by the sum of the smooth muscle area in the fields examined.

**RESULTS**

In 11 cases examined, the C/S of the AFMS ranged from 21.7% to 66.1% with a mean of 42.6±16.9 %. There was a significant positive correlation noted between the C/S and age (r=0.912, p<0.0001). Comparing the 5 elderly men (58-76) to the 6 men who were less than 50 years of age (18-45), the C/S was significantly (p<0.001) higher in the former (59.1±6.2 %) than in the latter (28.3±9.7 %).

In contrast, there was no statistically significant correlation between the C/S of PZ and age. The C/S of PZ was 38.8±19.1 % in 5 elderly men, and 65.1±26.8 % in 6 the men less than 50 years old, respectively (n.s.).

**CONCLUSIONS**

This study is the first to show a significant increase of the connective tissue in the AFMS with age. It is conceivable that the age-related fibrous change of the AFMS could be related with its dysfunction. Age-related changes of AFMS should be further examined to reveal the pathogenesis of age-related urodynamic change in men, especially those without prostate enlargement.

**REFERENCES**

1. Br J Urol 58 : 390, 1986.
2. Br J Urol 82 : 59, 1998.
3. Monograph Urol 9 : 36, 1988
4. Neuro Urody 17 : 377, 1998.

96

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URODYNAMICS - AN UNRELIABLE WITNESS?

**Aim of the study:** Urodynamics are regarded as an essential prerequisite in the surgical management of urinary incontinence. The Royal College of Obstetricians and Gynaecologists, the American Urological Association and the AHCPR recommend that urodynamic studies should be performed in all women prior to incontinence surgery (1,2,3). It is therefore crucial that normal values are established from a large asymptomatic population. Unfortunately, only very small series on asymptomatic women have been published to date (4,5). This study aimed to establish normal parameters in 183 asymptomatic women.

**METHODS:** Urodynamic studies were performed on 273 women who were scheduled to have an abdominal hysterectomy with and without urinary symptoms. The women were said to have urinary symptoms if they had symptoms of frequency, urgency, nocturia and incontinence. They had no prolapse. All tests were performed on a Lectromed urodynamic system under similar conditions (normal saline filling medium at body temperature, in sitting and standing positions and performed by the same person). Normal values were deduced from the studies and compared to published normal parameters of the female bladder.

**RESULTS:** All women had an underlying benign gynaecological condition necessitating abdominal hysterectomy with no concomitant surgery. The mean age of the study group was 42.5 years (range 29-60 years). Ninety women had urinary symptoms and 183 had no urinary symptoms.

Table 1. Incidence of various urodynamic diagnosis in the two groups of women.

	Normal CMG n (%)	GSI n (%)	DI n (%)	Mixed n (%)	Low compliance n (%)	Sensory urgency n (%)
Asymptomatic n=183	160 (87.4)	7 (3.8)	12 (7)	0	3 (1.6)	1 (0.5)
Symptomatic n=90	59 (65.5)	10 (11)	14 (15.5)	1 (1)	6 (6.6)	0

Table 2 Urodynamic characteristics in the 183 asymptomatic women with normal (n=160) and abnormal CMG (n=23) results (Mean±SD)

CMG (Sit)		CMG (Stand)	
FDV (ml)		FDV ml	
Normal CMG	206±102	Normal CMG	217±106*
Abnormal CMG	187±115	Abnormal CMG	187±115
SDV (ml)		SDV ml	
Normal CMG	302±136	Normal CMG	304±126
Abnormal CMG	391±125	Abnormal CMG	245±187
Maximum capacity (ml)		Maximum capacity ml	
Normal CMG	391±136	Normal CMG	374±131*
Abnormal CMG	380±158	Abnormal CMG	306±201
Residual urine	0ml		
PFR (ml/sec)			
Normal CMG	15.8±12		
Abnormal CMG	17.1±18		

\* p &lt;0.05

**Conclusions:** To the best of our knowledge this is the largest series of urodynamic studies performed on asymptomatic women. We found that the first desire to void (FDV), the second desire to void (SDV) and the maximum capacity were in accordance with the ICS standards and to other studies on asymptomatic women, though these studies were much smaller in number.

Statistically significant difference in volumes were seen in FDV and maximum capacity in stand fill stage between women with normal CMG versus women with an abnormal CMG which may indicate that the measurements in stand fill are more sensitive.

A lower incidence of detrusor instability (7%) was noted in our group of women in comparison to other studies on asymptomatic women(4,6). GSI was seen in 3.8% of women without urinary symptoms.

This study demonstrates that urodynamic studies do not always correlate with patient symptoms. Caution should be used in interpreting studies where there is disparity between symptoms and CMG results.

#### References

1. Effective procedures in gynaecology suitable for audit  
RCOG Clinical Audit Unit 1999 Feb:47-50.
2. Urinary Incontinence in Adults: Acute and Chronic Management . Clinical Practice Guidelines No 2, 1996 Update.  
AHCPR Publication No 96-0682. Rockville, Maryland: Agency for health Care Policy and Research, US Department of Health and Human Services; March 1996.
3. Report on The Surgical Management of Female Stress Urinary Incontinence. The American Urological Association, Female Stress Urinary Incontinence Clinical Guidelines Panel March 1997:26-31.
4. Conventional and extramural ambulatory urodynamic testing of the lower urinary tract in female volunteers.  
J Urol 1992; 47: 1319-1326.
5. The normal pattern of perception of bladder filling during cystometry studied in 38 young healthy volunteers .J Urol 1998; 160: 479-481.
6. Ambulatory monitoring and conventional cystometry in asymptomatic female volunteers  
BJOG 1996;103: 434-441

## 97

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THE AVAILABILITY AND UTILISATION OF URODYNAMIC INVESTIGATIONS BY GYNAECOLOGISTS FOR FEMALE URINARY INCONTINENCE

**Aims of study** Urodynamic investigations are currently recommended as part of the evaluation of female urinary incontinence, particularly prior to surgery. (1) There is doubt about this recommendation as the role of pre-operative, urodynamics has not been evaluated in a randomised, controlled trial. (2) There are few data on the availability and utilisation of urodynamics by specialists managing female urinary incontinence. A recent, small study indicated important areas of lack of agreement by specialists managing female urinary incontinence with respect to pre-operative evaluation of uncomplicated stress incontinence and management of Intrinsic Sphincter Deficiency. (3) The present, large survey reports the availability and utilisation of urodynamics in gynaecological practice in 5 countries.

**Methods** All registered practicing, specialist gynaecologists in Australia (n=1039), Canada (n=1000, approximately) and New Zealand (n=170) and a randomly selected sample of gynaecologists practicing in the USA (n=1000) and the UK (n=1000) were approached by postal questionnaire. Information on the availability of urodynamic investigations and the type of pre-operative, urodynamic investigations that the respondent would usually arrange was sought. Multiple options could be selected (see table).