

Newsletter

Management of Benign Prostate Hypertrophy

by Dr. FENN John

Prevalence

Histological benign prostate hyperplasia (BPH) has not been found in men under the age of 30 but its incidence has been shown to rise with age, reaching a peak in the ninth decade at which BPH was found in 88% of histological samples. (Barry et al 1984). A palpable enlargement of the prostate has been found up to 20% of males in their 60s and in 43% in their 80s. (Lytton et al 1968). Multiple studies in USA, Canada, Scotland and Netherlands has shown that clinical BPH is a highly prevalent disease from 13% of men aged 40 to 49 years to 43% in their 60s. (Arrighi et al 1991, Norman et al 1994, Garraway et al 1991, Wolks GGMC et al 1994).

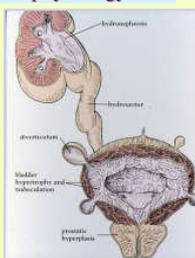
Etiology

While the causes can be multi-factorial, the accepted factors are age and hormonal status (Issacs et al 1989, Voller et al 1996). These factors are not preventable.

Pathophysiology

As BPH progresses, it can lead to bladder outlet obstruction, overactive bladder, development of residual urine, urinary tract infection, acute urinary retention, bladder stones, bladder diverticula, hydroureters, bilateral hydronephrosis, renal impairment and renal failure.

Pathophysiology



Natural history of BPH

Evidence from the Olmsted County community-based study and the PLESS placebo group suggests that BPH is a progressive disease. Risk factors have been found to be age (Olmsted County 1996), PSA (PLES 1998) and prostate volume (Rhodes et al 2000).

Clinical presentation

Lower urinary tract symptoms include poor stream, hesitancy, frequency, nocturia, urgency, straining, incomplete emptying, intermittent micturition, terminal dribbling and acute urinary retention.

Significant symptoms suggestive of complications are urinary tract infection, haematuria, bladder stones, renal impairment and occasionally renal failure.

Recommendations for diagnosis

Mandatory tests should be done in every patient.

Recommended tests are of proven value in the evaluation of most patients and should be done during initial evaluation.

Optional tests are of proven value in selected patient and should be done at the discretion of the clinician.

Not recommended tests do not have clinical evidence to support their use in Lower Urinary Tract Symptoms (LUTS).

Mandatory assessment should include a detail history of the duration and nature of the presenting symptoms, previous urological and particularly major pelvic surgery, general health issues and patient fitness. **Physical examination** should focus on palpable bladder, hernia, phimosis and digital rectal examination (DRE).

Quantification of symptoms can be documented by using one of the most commonly accepted International Prostate Symptom Score (IPSS) as shown. It is recommended because of its worldwide distribution and use. The symptom score is classified into mild, moderate and severe when the score is 0-7, 8-9 and 20-35 respectively. There is also assessment of the quality of life.

問題	0	1	2	3	4	5
1. 您過去一個月，您有多頻尿？	0	1	2	3	4	5
2. 您過去一個月，您有多急尿？	0	1	2	3	4	5
3. 您過去一個月，您有多夜尿？	0	1	2	3	4	5
4. 您過去一個月，您有多尿急？	0	1	2	3	4	5
5. 您過去一個月，您有多尿痛？	0	1	2	3	4	5
6. 您過去一個月，您有多尿血？	0	1	2	3	4	5
7. 您過去一個月，您有多尿頻？	0	1	2	3	4	5
8. 您過去一個月，您有多尿急？	0	1	2	3	4	5
9. 您過去一個月，您有多尿痛？	0	1	2	3	4	5
10. 您過去一個月，您有多尿血？	0	1	2	3	4	5
11. 您過去一個月，您有多尿頻？	0	1	2	3	4	5
12. 您過去一個月，您有多尿急？	0	1	2	3	4	5
13. 您過去一個月，您有多尿痛？	0	1	2	3	4	5
14. 您過去一個月，您有多尿血？	0	1	2	3	4	5

Symptom score:

Quality of life Assessment

0-7 Mild
8-19 Moderate
20-35 Severe

International Prostate Symptom Score (IPSS)

Contents:

1. Management of Benign Prostate Hypertrophy by Dr. FENN John
2. Anorectal Physiology Investigations by Dr. Meng C. S. William
3. Upcoming events & Soft reminder
4. AGM & ASM 2010

P. 1- 4
P. 5- 7
P. 7
P.4 & p. 8

HUI Peggy (Editor-in-chief)

Dr. LEUNG Man Fuk (Consultant)

Contributing editors:

CHAN Sau Kuen, LEE Siu Ching, LAM Mo Ching

Website: www.hkcs.hk

Recommended diagnostic tests include urinalysis, serum creatinine, prostate specific antigen (PSA).

Table 1

Probability of prostate cancer among men with normal Digital Rectal Examination (DRE)
(Barry)

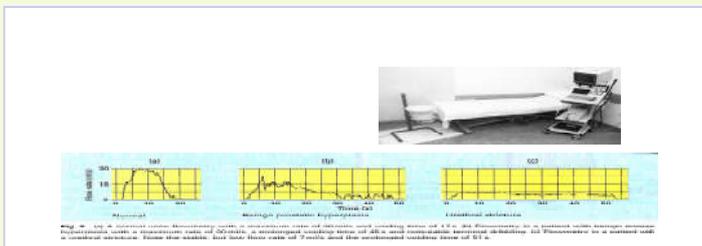
PSA (ng/mL)	Probability of prostate cancer (%)
0-2.4	Not known
2.5-4	12-23
4.1-10	25
> 10.0	> 50

Other recommended tests include:

Flow rate recording is the maximum urinary flow rate attained in at least two voids with a voided volume of more than 150 ml. When the maximum flow rate is less than 10 ml/s, there is 89% chance of obstruction, 10 to 15 ml/s, the chance of obstruction is 71 % and >15 ml, 48% chance of obstruction. (Paul Abrams Urodynamics second Edition)

Residual urine is the post-void urine in the bladder detected by transabdominal ultrasonography.

Voiding diary, also known as time-volume chart is an invaluable tool for clinching a diagnosis in lower urinary tract symptoms if it is properly done by the patient.



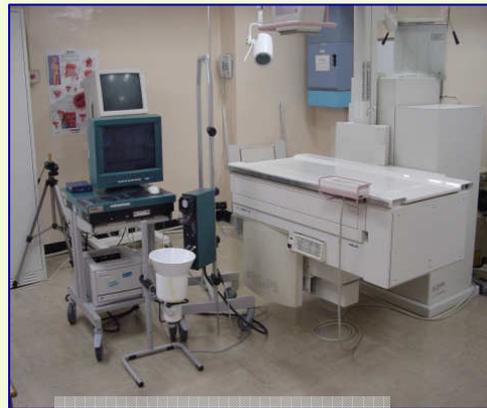
Optional tests include pressure flow studies, ultrasound imaging of the prostate, imaging of the upper urinary tract and cystoscopy.

Pressure flow studies is usually done prior to surgical treatment when the patient is younger than 50, older than 80, the post void residual urine more than 300 ml, peak flow rate more than 15 ml/s, history suggestive of neurogenic bladder, history of radical pelvic surgery and previous unsuccessful urological invasive treatment.

Ultrasound imaging of the prostate is only recommended in patients for suspected prostate abnormalities or in conjunction with prostate biopsy.

Imaging of the upper urinary tract which includes ultrasonogram and intravenous urogram is not recommended in uncomplicated benign prostate obstruction and is only recommended in patient with upper urinary tract infection, hematuria, urolithiasis, renal insufficiency history of upper tract tumor and urinary tract surgery. Routine diagnostic cystoscopy is not recommended because benefits do not outweigh the harm of the invasive study (Berge V etal 1995, el Din KE etal 1996.)

Tests not recommended are retrograde urethrogram, urethral pressure profilometry, voiding cystourethrography and electromyography.



Video-Cystourethrography

Management strategy

It will depend on the prevailing symptoms and evidence of complications of BPH.

Imperative indications for surgical intervention including refractory urinary retention, recurrent bleeding prostate, renal failure due to bladder outlet obstruction, bladder stones, recurrent urinary tract infection and large bladder diverticula must be excluded before we embark on watchful waiting. We should adopt shared decision if symptoms are bothersome only. Pressure flow studies should be considered when the peak flow is between 10 to 15 ml/s.

Watchful waiting with yearly reassessment of symptom score, bothersome, flow rate and post void residual urine should be adopted for mild to moderate uncomplicated lower urinary tract symptoms which do not bother the patient.

Medical treatment can be considered when the symptoms are bothersome in the absence of bladder outlet obstruction. Patient on medical therapy requires regular follow up for progress, adverse events and alternate treatment. Annual reassessment is required even when the condition is stable.

Adrenergic receptor antagonist and 5 Alfa-reductase inhibitor have been used for medical therapy for lower urinary tract symptoms. The former is capable of improving symptoms and flow rate in some patients with no significant relief of obstruction. Side effects include dizziness, headache, asthenia, orthostatic hypotension, drowsiness, nasal congestion and retrograde ejaculation. Efficacy of all contemporary agents is similar though the side-effects profiles might be different. Treatment should be discontinued if no objective improvement after an 8-week trial.

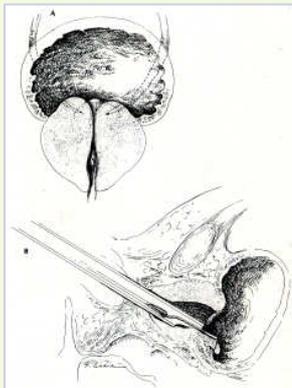


5 Alfa-reductase can be considered in patient with clinically enlarged prostates and bothersome symptoms only. It is capable of reducing prostate volume, improving symptom scores and flow rates with maximum benefits at 6 months. The side effects are diminished ejaculation, loss of libido and impotence. It will affect PSA serum level.

The role of phytotherapeutic agents is under trial because the mode of action is unknown and biological effect unclear.

Surgical management should be considered when there is refractory urinary retention, recurrent urinary tract infection, recurrent bleeding prostate, bladder stone, large bladder diverticulum and renal failure due to benign prostatic obstruction.

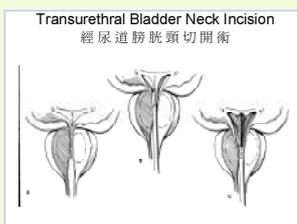
The common procedures include transurethral resection of prostate (TURP) and transurethral bladder neck incision (TUBNI). Open prostatectomy is indicated for huge prostate associated with large bladder stones and diverticulum. Transurethral vaporization of prostate (TUVV) is an alternative to TURP and TUBNI particularly for patients with bleeding disorders.



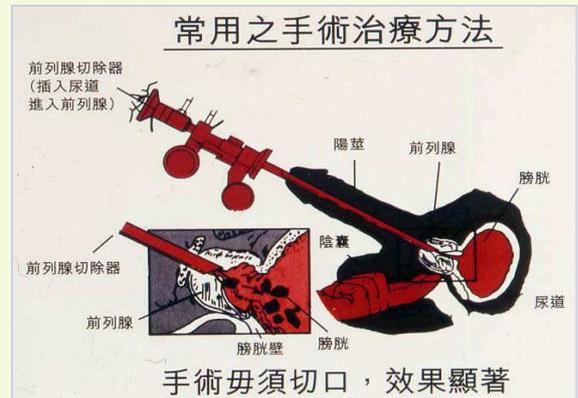
Transurethral Resection of Prostate

TURP and TUBNI, the commonest performed procedures for symptomatic benign prostate obstruction have been shown to yield consistent and durable outcomes by large scale studies overseas and locally. The mean increase of peak flow after TURP and TUBNI was +9.7 ml/s and +7.8 ml/s respectively (Yang Q etal 2001, Madersbacher S etal 1999, Chung V etal 2009). The highest peak flow was seen after open prostatectomy (Tubaro A etal 2001, Mearini E etal 1998, Elmarlik E.M. etal 2000).

All four procedures allows a reduction of the post-void residual volume more than 50%-60% after open prostatectomy; -60% after TUVV; -60% after TURP and -55% after TUBNI (Yang Q. etal 2001, Madersbacher etal 1999; Roehrborn C.G. 1996). Mortality after prostatectomy is less than 0.25 % (Holman CG 1996).



Transurethral Bladder Neck Incision



經尿道前列腺切除術

The risk of TURP syndrome is 2%. Blood transfusion after TURP is 2-5% and higher for open prostatectomy. Risk of bleeding after TUBNI and TUVV is uncommon. Incontinence after TUBNI, TURP, open prostatectomy and TUVV is 1.8%, 2.2%, 10% and 5% respectively.

The risk of urethral stricture after open prostatectomy, TURP and TUBNI is 2.6%, 3.8% and 1.7% respectively. The risk of bladder neck contracture after open surgery, TURP, TUBNI and TUVV is 1.8%, 4%, 1.7% and 4% respectively.

Retrograde ejaculation after open prostatectomy, TURP and TUBNI is 80%, 70% and 40% respectively. Erectile dysfunction after TURP is 6.5% and is considered unlikely to be a direct result of TURP but instead other factors including age. Retreatment rate is 1-2% per year. No definitive data for TUVV is available.

Patients after TURP will be scheduled to be seen at 6 weeks. The visit is meant to disclose the histological findings and to identify early post-operative complications. The next visit at 6 month is meant to review the flow rate and IPSS. If all the results are favorable, yearly reassessment of the uro-flow and IPSS will be done for 10 years.

In 2006, a personal data on 109 patients treated with TURP for lower urinary tract symptoms and acute urinary retention from 01/01/2001 to 31/12/2001 at Queen Elizabeth Hospital showed that the average Qmax, voided volume and post-void residue of the LUTS patients before surgery were 7.8ml/s, 219 ml and 123.3 ml respectively. After surgery, there was a mean reduction of post-void residual urine of 72 % 6 years after surgery. After TURP, the mean increase of Qmax for LUTS was + 9.7 ml/s and acute urinary retention +15.2 ml/s respectively. Three out of 109 (2.75%) patients developed urethral strictures and bladder neck stenosis. Blood transfusion was required in 3 patients (2.75%). None of the patients in the cohort developed TURP-Syndrome or remained incontinent one year after surgery. There was no operative mortality. The mean hospital stay was 3 days.





A 10-year review of the long term outcomes of monopolar TURP by Chung V. in 2008 at Queen Elizabeth Hospital showed that 5% (135/2685) developed bladder neck stenosis, 4% (119/2685) urethral strictures and 2.6% (69/2685) required retreatment. There was durable and significant improvement in the flow rate, IPSS and Quality of Life Score.

Laser prostatectomy with Neodymium(Nd):YAG, Holmium:YAG, potassium-titanyl-phosphate (KTP):YAG and diode delivered through a right-angle fibre or interstitial fibre has been under intensive studies since 1992.

Side-firing laser prostatectomy done transurethrally under general or regional anesthesia has shown in studies comparing with TURP an equivalent improvement in symptom scores and increases in uroflow rates in both groups, although they are higher in the TURP arms. Catheter irrigation is generally not required and blood loss is statistically less than TURP. The major limitation and disadvantages of the laser technique compared with the conventional TURP is the severe dysuria, delayed voiding and prolonged urethral catheterization for 3-4 weeks.

Interstitial Laser Coagulation (ILC) decreases urethral obstruction and symptoms by achieving volume reduction through inducing intraprostatic lesions which results in secondary atrophy and regression of the prostatic lobes rather than sloughing of the necrotic tissue (Muschter R et al 1995). A number of studies reported improvements in symptom score, peak flow rate, residual urine and prostate volume. Post-operative irritative symptoms were observed in 5-15% of patients (Bhatta KM et al 1996, Fay R et al 1997, Muschter R et al 1996). Post-operative urethral catheterization was required for an average of 18 days. The retreatment rate is up to 15.4% within the first 12 months.

Laser prostatectomy considered as an alternative procedure to TURP in selected patients does have the disadvantages of longer post-operative catheterization and the lack of tissue biopsy. Holmium laser resection of the prostate (HoLRP) has symptomatic and urodynamic improvement equivalent to TURP. The mean resection time is significantly longer. Comparative studies of HoLRP versus Nd:YAG has demonstrated that the catheter time of the former is significantly shorter and the incidence of dysuria is lower.

Other interventional therapies that have been used for treatment of symptomatic BPH include prostatic stents, thermotherapy, balloon dilatation and hyperthermia in the early nineties. Balloon dilatation has fallen out of favour because of its poor efficacy. Low and high energy transurethral microwave thermotherapy (TUMT) have not gained popularity because of the long catheterization time and relatively high retreatment rate particularly with the low energy TUMT. Prostatic stents are used in very limited situations because of its complications and efficacy.

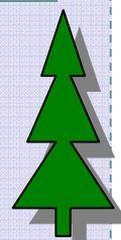
High Intensity Focused Ultrasound (HIFU) is the only technique that provides non-invasive tissue ablation requiring general anesthesia or heavy intravenous sedation. Improvement of symptoms is in the range of 50-60% and Qmax increases by a mean of 40-50%. Evidence of long-term efficacy is limited. Transurethral Needle Ablation of Prostate (TUNA) when performed on properly selected patients can improve the urinary symptoms in the range 50-60% and increase the Qmax by a mean of 50 -70%. Clinical efficacy has been proved in only few randomized controlled trial. There is limited evidence of long-term efficacy (Rieken M et al 2010).

Conclusion

Till date, the outcomes of transurethral resection of prostate (TURP) for symptomatic and obstructive benign prostate hypertrophy are durable. It remains the gold standard to which other interventional procedures should be compared. Surgical techniques that remove the obstructing tissue provide the greatest relief of both the symptoms and urodynamic obstruction for patients with moderate to severe symptoms. The interval to relief of symptoms, duration of catheterization and retreatment rates are less with surgical than thermotherapy techniques. Surgical resection of the prostate always provides specimen for histological diagnosis. The technique of TURP first introduced in the nineteen thirties has taken nearly eighty years to evolve to what we have now. Other techniques introduced in the mid eighties and nineties will take time to mature and surpass the current gold standard.



Pick of ASM on 18 Sept 2010



Anorectal Physiology Investigations

By Dr. MENG C. S. William

(Department of Surgery, Our Lady of Maryknoll Hospital & Kwong Wah Hospital, Kowloon)

Introduction

Establishment of anorectal physiology (ARP) investigations would certainly be a *déjà vu* topic to our Western colleagues. However, in Hong Kong and China, it is still in its developmental stage. ARP investigations provide an objective evaluation for diagnosis and for assessment of treatment.

Anorectal Manometry

Water-Perfusion System is used in our unit. The continuous perfusion fills up the space between the catheter and the anus. When the “yield pressure” is reached, the fluid will leak into the rectal ampulla or out of the anus. As the catheter is drawn through the anus, the mucosa will be in contact with the catheter port thereby impeding the flow of water. The yield pressure then becomes the pressure required to overcome this obstruction. This is transmitted via capillary tubing to transducers and the pressure is recorded.

Resting pressure is the mean of the peak and trough pressure at rest. Maximum **Squeeze pressure** records the best effort of the patient with a period of rest in between. **High pressure zone (HPZ)** is defined as the zone bounded caudad by a rise in pressure of 20 mm Hg and cephalad by a fall in pressure of 20 mm Hg in at least 50% of the channels.

Rectoanal Inhibitory Reflex (RAIR) can be observed with the distension of balloon at the lower rectum eliciting an external anal sphincter contraction that is followed by internal sphincter relaxation. It is absent in Hirschsprung Disease and diminished in neurogenic faecal incontinence and megarectum. Thereafter, the balloon is filled with air. The volume for the **First Sensation, Urge Sensation** and **Maximal Tolerable Volume (MTV)** are recorded.



Fig. 1 Manometry Setup

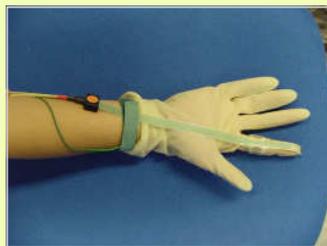


Fig. 2 St. Mark's Pudendal Nerve Stimulating Device

Electrophysiology

St. Mark's pudendal nerve stimulating device delivers a 50-volt square-wave stimulus of 0.1 msec in duration at the finger tip. The pudendal nerve is stimulated confirmed by the contraction of the external anal sphincter. The time taken for the impulse to be transmitted is known as pudendal nerve terminal motor latency (PNTML). The normal value is about 2 ms.

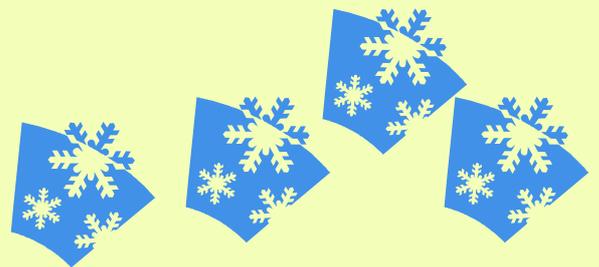
Electromyography (EMG) involves the measurement of activity from muscle fibres of external sphincter muscle. More commonly, it involves activity from a motor unit action potential. At present we found that the surface electrode is sufficient for our investigations and we refrained from inserting needles for EMG.

Colonic Transit

Metcalf technique for segmental Sitzmark method is used. Patient is to ingest three boluses of 20 **Radio-opaque Markers** each at 24-hour interval. X-ray will be taken on Day 4 and Day 7. The total number of markers in each segment (Left Colon, Right Colon & Rectosigmoid) is counted.

Markers located at the right or the spinous processes of the vertebrae and above a line drawn from the fifth lumbar vertebra to the pelvic outlet are in the right colon. Markers to the left of the vertebral spinous processes and above a line from the fifth lumbar vertebra to the iliac crest are in the left colon. Markers below the line of the pelvic brim on the right and iliac crest on the left are said to be in the rectosigmoid and rectum. The total number of markers in each segment is used to determine transit time regardless of the type.

Total transit time of more than 70 hours, then transit in any segment is abnormal if more than 30 hours.



Colonic Scintigraphy tracks the radionuclide-labelled bolus through the colon by using a gamma camera. The sequential transit times can be calculated and would be useful in determining segmental inertia for operation.



Fig. 3 Transit Study

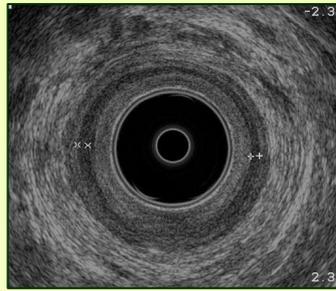


Fig. 4
Endoanal
Ultrasonography

Endoanal Ultrasonography (EAUS)

EAUS is particularly useful in faecal incontinence to assess the integrity of the sphincters. Some suggested that in chronic constipation, there is increase in thickness of the internal sphincter as well.

The probe has a transducer head of 7 MHz rotating endoanal ultrasound probe. A condom with gel is placed over the probe and lubricant is applied before insertion. We record the scan at three levels: (1) Upper anal canal marked by the puborectalis muscle, (2) Mid-anal canal where the internal anal sphincter attains its maximal thickness and (3) Lower anal canal marked by the external anal sphincter.

First hyperechoic layer is the mucosa/submucosa complex. The next hypoechoic layer is the internal anal sphincter. In higher resolution, there is another hyperechoic later representing the longitudinal muscle of intersphincteric plane. The outmost hyperechoic later represents the external anal sphincter.

Defaecation Proctography

This is the best simulation of defaecation and is particularly useful in pelvic floor dysfunction and evacuation disorders e.g. constipation and outlet obstruction. We need a standard **fluoroscopic control** with a **commode** that has to be radiolucent. For **contrast media**, we used barium sulphate thickened with porridge oats for injection.

For our routine, we ask the patient to relax and hold the contrast, squeeze and push. Then we record the post-evacuation volume. Traditionally, there are several measurements to be noted. **Anorectal angle** is the angle between the axis of the posterior rectal wall and the axis formed by the anal canal. **Puborectalis length** is the minimal distance between the antero-superior aspect of the symphysis pubis and the puborectalis notch. **Perineal descent** is the length of a perpendicular dropped from the pubococcygeal line to the anorectal junction.

We found that the measurements vary too much to be meaningful. We usually observe for intussusception and rectocele. Real time observation serves as the best method to get meaningful interpretation. We have also to bear in mind that the patient is in an awkward position and is asked to defaecate in public. Failure to evacuate is too easily counted as a false positive diagnosis of outlet obstruction.



Fig. 5 Defaecation Proctography



Fig. 6 Anorectal Physiology Team



Anorectal Physiology Team

Our team consists of colorectal surgeon, colorectal nurse, physiotherapists, radiographers and dietitian. We managed to run multi-disciplinary Bowel Rehabilitative programme for patients with Functional Bowel Disorder including Chronic Constipation and Faecal Incontinence.

We perform our own Anorectal Physiology Investigations. Patient rapport is excellent and we have the same personnel to proceed with **Biofeedback** treatment. Patients are trained with provision of visual or auditory feedback of the muscular tone within the external sphincter/puborectalis complex. In faecal incontinence, it improves patients' awareness of their sphincter mechanism and the muscular function of this apparatus. For obstructed defaecation, it heightens the awareness of the sphincters so that they can be trained to consciously relax these muscles during evacuation.

Home-training units is beneficial. It is carried out with the patient sitting on a chair. Sessions are scheduled regularly until the person has demonstrated control of the pelvic floor. A three-month course is initiated. After this, another anorectal physiology measurement is instituted to compare with the pre-treatment parameters objectively. Then we can decide whether it is worthwhile for patients to continue up to six months.

Conclusion

Anorectal physiology is no longer viewed as a research tool. It provides objective data in chronic constipation as well as faecal incontinence. Anorectal physiology team is important to have objective assessment of patients and to draw up a treatment regime. Dedicated personnel establishing good rapport with patients is essential for the success of treatment. Patients are now mainly recruited in the surgical specialist outpatient clinic of Our Lady of Maryknoll Hospital.

References

- Diamant NE, Kamm MA, Wald A, Whitehead WE. AGA technical review on anorectal testing techniques. *Gastroenterology*. 1999 Mar;116(3):735-60.
- Felt-Bersma RJ, Meuwissen SG. Clinical relevance of anorectal function investigations. *Hepatogastroenterology*. 1992 Apr;39(2):181-6.
- Jorge JM, Wexner SD. Anatomy and physiology of the rectum and anus. *Eur J Surg* 1997 Oct;163(10):723-31.
- Keighley MRB, Williams NS. Anatomy and physiology investigations. In: *Surgery of the anus, rectum and colon*. W.B. Saunders 1997 vol. 1: 1 – 48.
- Rotholtz NA, Wexner SD. Surgical treatment of constipation and fecal incontinence. *Gastroenterol Clin North Am* 2001 Mar;30(1):131-66.
- Swash M. Anorectal incontinence: electrophysiological tests. *Br J Surg* 1985 Sep;72 Suppl:S14-5.



Upcoming events

Date	Event	Place
25-27 Feb 2011	7th International Scientific Meeting, Macau, 2011 organized by International Society of Ultrasound in O & G, Chinese Medical Association and Association of O & G of Macau	Macau
29 Aug - Sept 2011	41st Annual Meeting ICS	Glasgow, UK

Soft reminder to HKCS members

Please be noted that your membership will be expired in Dec 31, 2010. You can now renew the membership by filling in the membership application / renewal form (can be downloaded from www.hkcs.hk).

Office Bearers (2010-2011):

President:

Dr. LEUNG Man Fuk

Vice President:

Dr. CHEON Willy,
Cecilia

Honorary Secretary:

Ms. LAM Mo Ching

Honorary Treasurer:

Dr. TAM Cheuk Kwan
(Webmaster)

Council members:

Ms. CHAN Sau Kuen

Dr. FENN John (Representative at FMSHK)

Ms. IP Kam Tin

Ms. LEE Siu Ching, Patricia

Dr. SIU Lai Sheung, Katherine

Dr. TONG Bing Chung

Ms. HUI Peggy (Newsletter Editor)

Ms. FUNG Brigitte

Dr. LEUNG Michael

Dr. HO Kwan Lun

Dr. LAU Winnie

Co-opt Member: Dr. LUK Lai Yin

郵票

貼上地址

AGM & ASM 18 Sept 2010



Dr. Leung, Chairman of HKCS and Council members at AGM 2010



Dr. Hung Hing Hoi, Associate Consultant, Dept of Surgery, QEH



Dr. Francis Lee, Consultant Urologist, Pedder Clinic



Professor Liang Yue You, The first Hospital, Sun Yet-Sen University



Ms Ng Sau Loi, APN, Dept of Surgery, QMH



Ms Chang Sau Kuen, NC, Contience, UCH