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Open to Debate

## The Motion: Large BPH Should be Treated by Open Surgery



### For the motion

Patrizio Rigatti  
Department of Urology,  
Universita' Vita Salute  
San Raffaele, Milan, Italy  
E-mail address:  
[patrizio.rigatti@hsr.it](mailto:patrizio.rigatti@hsr.it)



### For the motion

Andrea Cestari  
Department of Urology,  
Universita' Vita Salute  
San Raffaele, Milan, Italy

Patrizio Rigatti is Professor and Chairman of the Department of Urology at the University Vita Salute San Raffaele in Milan. His principal fields of interest include urological oncology and reconstructive urology. He has co-authored more than 200 articles published in peer-reviewed, indexed journals and many textbook chapters.

The application of open surgery for benign prostatic hyperplasia (BPH) has been progressively decreasing over the years following the rapid advent of minimally invasive techniques, including laparoscopy and endoscopic laser treatments [1]. A good example is laparoscopic radical nephrectomy, which today represents the gold standard for patients who are not eligible for nephron sparing surgery and for those not showing tumour invasion of the renal vein or the vena cava [2]. Laser treatment for bladder outlet obstruction (BOO) due to BPH has become a popular option and many patients are clearly attracted by this technique. Are we then ready to state that open prostatectomy has lost all significance? We are not convinced of this and would offer the following argument.

Open prostatectomy was introduced in clinical practice several decades ago but the techniques that are routinely performed today are substantially different from the initial ones. One can perform either a

millin or a transvesical prostatectomy via a 5 cm skin incision. We have been using a pfnannestiel incision with virtually no incidence of incisional hernias. The use of magnifying loupes and of a powerful xenon frontal light allows for the precise identification of capsular bleeders, which can be easily controlled during the procedure. In our experience, this has dramatically reduced the blood loss in both the intraoperative and early preoperative period. Currently, none of our patients bank blood prior to the procedure. In addition, the urethral catheter is now routinely removed on postoperative day 2 or 3 for the millin and transvesical cases, respectively.

During open prostatectomy, the cleavage plane of the adenoma is developed bluntly by the index finger and we believe this guarantees the avoidance of any damage to the urethral sphincter. In our experience with holmium laser enucleation of the prostate (HoLEP) with glands larger than 100 g, almost 30% of patients experience a mild and transitory stress incontinence, which we think is related to the use of laser energy at the apex [3]. We have seen patients with large adenomas intimately adjacent to the urethral sphincter and these patients may be at risk for this complication. It has to be stated, however, that in our series of 400 consecutive HoLEP procedures, only one patient is still using a pad at 1 year following the procedure. Virtually all patients

reporting some stress incontinence following HoLEP recover complete urine control in 3 to 6 months. Cost may be an issue with laser prostatectomy if the machine is underused. This has to be carefully considered when deciding to purchase any kind of laser system as none of them are inexpensive. However, we think that among all available lasers, only HoLEP can be considered a good alternative to open prostatectomy for prostates larger than 100 g.

In conclusion, although it is clear that HoLEP when performed by skilled surgeons is an effective and safe procedure to treat BOO due to large prostates, we feel that open prostatectomy is here to stay. Laparoscopic open prostatectomy has been reported as a viable procedure, although published results are very limited [4]. The difference between a 5 cm long Pfannenstiel incision and a more difficult procedure that demands general anaesthesia will hardly be in favour of the latter. The fact that

laparoscopic simple prostatectomy has not shown the same speed of diffusion as other laparoscopic procedures in urology is further confirmation of our thoughts.

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### Against the motion

Peter Gilling

Department of Urology, Tauranga  
Hospital, Tauranga, New Zealand

E-mail address:

[Peter@promed.co.nz](mailto:Peter@promed.co.nz)

Dr Gilling received his MB ChB from Otago University, New Zealand in 1982 and his Australasian fellowship (FRACS) in 1991. His current appointments include Examiner in Urology for the Royal Australasian College of Surgeons (RACS), Chairman of the Lower Urinary Tract Advisory group for the Urological Society of Australia and New Zealand (USANZ) and Member of the Continuing Medical Development (USANZ CPD) committee. As a pioneer of holmium laser prostatectomy, he has published over 30 scientific articles and four book chapters on this subject alone including outcomes from five randomised trials.

Historically, perineal, suprapubic and retropubic open prostatectomy have been used to treat benign prostatic enlargement (BPE) and are still employed when the size of the prostatic adenoma makes transurethral resection of the prostate (TURP) unsafe. Initially a piecemeal removal 100 years ago, these approaches now involve the complete enucleation of the encapsulated adenoma. The morbidity of open

enucleation is substantial, but until recently no other options were available when the size of the prostate approached 100 g and beyond. Endoscopic and laparoscopic approaches now exist and these have virtually eliminated the need for open prostatectomy in many institutions but, as with all minimally-morbid procedures, open surgical exposure remains an important back-stop should significant technical difficulties be encountered.

Endoscopic treatment by TURP has occasionally been employed for very large adenomas but becomes increasingly difficult and unsafe as prostate size increases. Modifications of the traditional technique, such as the use of bi-polar technology, minimal rather than radical resection, removal of only one lateral lobe and various loop modifications have been made in order to increase the size of gland that can be safely tackled. Other options, such as laser coagulation [1] and ablation [2] have been sporadically described for larger prostates and, although safer than TURP, amount to little more than debulking procedures as evidenced by prostate-specific antigen (PSA) and transrectal ultrasound (TRUS) volume measurements.

A paradigm shift in the endoscopic management of BPE has enabled very large prostates to be tackled with significantly less morbidity. These newer procedures employ complete enucleation of the adenoma using the same principles as open prostatectomy and can be performed both transurethraly [3] and more recently, laparoscopically [4]. The

transurethral procedure currently employs the high-powered holmium laser (2140 nm) and is termed HoLEP. The anatomical lobes are each dissected off the surgical capsule in a retrograde direction and haemostasis is achieved with the defocused laser. A mechanical morcellator can then be introduced transurethrally into the bladder and the lobes thereby extracted. PSA and TRUS volume data suggest that the clearance of the adenoma is similar to that achieved with open prostatectomy with the clinical data supporting this [5] and considerably reduced morbidity. The paradigm shift from an inside-out piecemeal debulking starting at the bladder neck (e.g. TURP/vaporisation/ablation) to an outside-in anatomical enucleation starting at the apex (HoLEP) has enabled huge glands to be safely treated at many institutions world-wide.

Using the experience gained from performing laparoscopic radical prostatectomy, the laparoscopic approach to large benign adenomata has also been developed. This procedure can be performed by both extra-peritoneal and transperitoneal approaches using either a retropubic or suprapubic technique [4]. The procedure is very similar to open prostatectomy in its conduct, but while the morbidity is somewhat less than its open equivalent, the peri-operative morbidity appears

significantly greater than HoLEP in its current form. In the future, urologists with advanced laparoscopic capabilities may well choose this approach, whereas those with significant sub-specialty endoscopic expertise will likely resort to endoscopic enucleation for very large adenomas with open prostatectomy being relegated to the history books!

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## Rebuttal 1

P. Rigatti, A. Cestari

It is important to recognize that a surgical technique shows its best results if it is performed frequently. The fact that in some countries, such as the USA, open simple prostatectomy has been performed only rarely over the past number of years may account for the unsatisfactory results obtained in terms of blood loss and hospital stay. At the same time, it is our opinion that if TURP is also used routinely to treat large glands, it is inevitable that a significant number of re-operations will be required due to residual obstruction. As these usually become evident with time, they are not identified in many published studies. We are concerned by the fast diffusion of some laser techniques, such as the GreenLight™ laser prostatectomy, which are now proposed for the treatment of large prostatic adenomas [1]. Although this procedure is technically easy and is not burdened by a steep

learning curve, we feel that it is not the answer for large glands. The absence of final pathology is an additional major limiting factor. If minimally invasive therapy for BOO due to BPE is the way forward, then there should be no compromises involving attributing qualities to techniques which on the contrary just do not have them. Laparoscopic simple prostatectomy is a technically demanding procedure and we expect that its diffusion will be slow. We should always be aiming at the patient's best interest and we thus feel that open simple prostatectomy performed in a modern fashion will maintain a role for many years.

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## Rebuttal 2

P. Gilling

When treating a benign (or malignant) tumour in any other circumstance, complete excision is the rule. BPH has historically been the exception. The idea of internally debulking a large benign encapsulated tumour when an accessible surgical plane exists (as occurs with endoscopic resection or ablation) seems ludicrous in many ways!

Enucleation of the entire adenoma in BPH by an open surgical approach has been practiced for a century and Drs. Rigatti and Cestari present current evidence for its ongoing utility in experienced hands. There is little doubt that open prostatectomy has been the surgical standard for relief of BOO due to BPH but I believe there is also little doubt that this same surgical result can now be achieved by less invasive means. Randomised trials from centres in Italy [1] and Germany [2] and comparative studies from the USA [3] have confirmed that open prostatectomy and HoLEP are equivalent in terms of efficacy, but that patient morbidity is substantially less with the endoscopic approach.

A recent open prostatectomy series from a large institution in the USA confirmed an operative time of 213 min, a 35% transfusion rate and a hospital stay of 6.7 days, though admittedly, on average, each

urologist performed a procedure only once every 2 years [4]. The question of cost is satisfied by the multiple uses afforded by the holmium laser; 69% of its use in our institution is for the prostate, 22% for upper tract stones and the remainder an assortment of soft tissue applications. The era of the open prostatectomy has truly passed as a routine procedure for the large prostate but it remains the surgical standard against which all newcomers should be judged.

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