



Editorial – referring to the articles published on pp. 563–568 and pp. 569–573 of this issue

## Lasers for the Treatment of Bladder Outlet Obstruction: Are They Challenging Conventional Treatment Modalities?

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Benign prostatic hyperplasia (BPH) is the most common benign neoplasm among aging men and, at the same time, the most frequent male tumor requiring surgical intervention. Transurethral resection of the prostate (TURP) still remains the “reference” instrumental treatment for benign prostatic obstruction, but the significant morbidity related to this surgical procedure has powered the development of various high-energy alternative treatment options.

In this issue of *European Urology*, two interesting papers verify the notion that holmium prostatectomy can be considered today as an equal opponent to the TURP and to open prostatectomy.

Wilson et al. [1] compare holmium laser enucleation of the prostate (HoLEP) with TURP in a prospective randomized trial with 60 participants. Symptom scores, quality of life scores and maximum urinary flow rates were obtained at regular intervals, and, at the same time, postvoid residual volumes, transrectal ultrasound volumes and pressure flow studies were performed. The results and the efficacy of both surgical techniques were similar at 24 months of follow-up with HoLEP showing an advantage of less perioperative morbidity.

In the second paper published in this issue, Naspro et al. [2] compare the HoLEP with open prostatectomy for prostates greater than 70 g. with a 24-month follow-up. The protocol followed in this paper was very similar to that used by Wilson et al.

[1]. This second study shows similar results for the two approaches, but catheterization time, hospital stay and blood loss were reduced with the HoLEP.

The outcome of these two studies has been confirmed by several other studies (Table 1) [3,4]. HoLEP has been available for almost 10 years now; however, despite its proven efficacy and low perioperative morbidity, it has not gained widespread acceptability. This lack of use is not due to a lack of long-term quality data but most probably to the significant learning curve and the high cost of the HoLEP instruments.

Another laser technique challenging the TURP and the open procedure is the photoselective vaporization of the prostatic gland with the high power KTP laser. Again this costly procedure has been shown to have an efficacy similar to that of TURP. KTP laser also can be used in small and large prostatic glands, and its perioperative morbidity is reported to be less than that of classic TURP operation [5–7]. The volume of the removed tissue through vaporization with this technique is probably less than that of HoLEP, but the short-term results look promising (Table 1). The KTP laser for the treatment of bladder outlet obstruction (BOO) is gaining popularity at a faster speed, which may be due to the fact that it has a significantly shorter learning curve. Long-term results, however, are still lacking. Both lasers have shown their applicability to

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**Table 1 – Major results from laser trials**

Reference	Laser	N	PV (ml)	OT (min)	CT (h)	Qmax pre (ml/s)	Qmax post (ml/s)	IPSS imp (%)	FU (mo)
Elzayat et al. [3]	HoLEP	552	55	86	>24	—	>200%	>75	12
Kuntz et al. [4]	HoLEP	120	115	136	24	5.8	22.0	>70	18
Malek et al. [5]	KTP	94	45	47	<24	7.8	25.0	>100	60
Sarika et al. [6]	KTP	240	52	45	<24	7.9	26.1	>85	12
Bachmann et al. [7]	KTP	108	52	54	<24	7.9	17.0	>70	12

CT = Catheterization time; IPSS imp = improvement of symptom score; FU = follow-up; N = number of patients; OT = operating time; PV = prostate volume; Qmax pre = maximum flow preoperative; Qmax post = maximum flow postoperative.

patients under coagulation therapy, which is definitely a step forward in the surgical management of BOO.

Laser prostatectomy (HoLEP and KTP) challenges TURP and open prostatectomy, since it is safer and offers less hospitalization and catheterization time. It is expected that urologists will show a great interest in investing time and money in this new direction. Obviously the “reference” instrumental treatment (TURP) is facing a serious threat for the first time after many decades. More prospective (randomized) trials with long-term follow up will be needed, however, before such a strong statement can be supported with scientific evidence.

The evolution of laser prostatectomy (HoLEP or KTP) will probably challenge the medical treatment of BOO as well. The first publication of the TRIUMPH study has shown that, within Europe, the surgery rate has dropped dramatically to a rate of 4.9% and that the mean 1-year treatment costs for BPH is €858, three quarters of which concerned medical costs (5-alpha-reductase inhibitors, alpha blockers and phytotherapeutic agents) [8]. A previously published study [9] has shown that 47–58% of men on alpha-blockers discontinued their medication within 3 years, since they did not believe that this treatment was effective any longer and sought another form of treatment. At the same time in Spain, it has been shown that, after one decade of medical treatment of BPH, what has actually happened is that urologists operate on fewer patients with BOO but that they do so when their patients are older and sicker, and have larger prostates and more dangerous comorbid diseases [10].

All the above information leads to the motion that BOO, in many cases, has become a chronic disease that needs daily medication for years, prescribed by general practitioners and office-based urologists, and that, after numerous consultation visits, the final outcome is still questionable. Therefore the following logical question arises by itself:

*Why should we as urologists spend 75% of our budget for BPH on long-lasting medical treatments that will improve, at their best, the maximum flow (Qmax) by 2 ml/s and delay a surgical intervention for a later time when our patients will be older and sicker, and have bigger prostates, instead of proceeding with a laser treatment that is bloodless, has minimal perioperative morbidity, requires only a few hours of hospitalization and will increase the Qmax by 100–150%?*

This question is of course provocative, but we urologists must always seek a fast, efficient and cost-effective treatment for the most common problem that we have to deal with in our everyday life, which is the treatment of lower urinary tract symptoms caused by BOO.

Whether laser prostatectomy will help us to answer this provocative question, and whether it will replace TURP and open prostatectomy depend on the quality of the studies that will be undertaken to compare all the important parameters in a prospective (randomized) fashion. Urologists and industry must invest towards this direction, otherwise the laser “honeymoon period” will come to an end without documentation of the hard scientific data that are necessary to inform the urologic community at large, and this promising new technique will fade away like many others have in the past.

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