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Benign Prostatic Hyperplasia: GreenLight for Laser Therapy?

### WHEN THE ALPHA-BLOCKERS AND DUTASTERIDE STOP WORKING WHAT OPTIONS DO WE HAVE FOR OUR PATIENTS WITH SYMPTOMATIC BPH.

You are listening to ReachMD XM 157, the channel for medical professionals. Welcome to medical breakthroughs from the University of Pennsylvania Health Systems with your host, Northwestern University Internist, Dr. Lee Freedman. Welcome to Medical Breakthroughs from University of Pennsylvania Health Systems on ReachMD XM 157, the channel for medical professionals. I am your host, Dr. Lee Freedman, and joining me today is Dr. Joseph Harryhill, the Assistant Clinical Professor of Urology at the University of Pennsylvania, to discuss newer techniques in treating BPH, specifically laser prostatectomy.

#### DR. LEE FREEDMAN:

Thank you for being with us, Dr. Harryhill.

#### DR. JOSEPH HARRYHILL:

Thank you for inviting me, Dr. Freedman.

#### DR. LEE FREEDMAN:

As an internist, I am usually writing prescriptions for medications and at what point do we say hey! my Flomax and my Avodart are no longer adequate for this patient.

#### DR. JOSEPH HARRYHILL:

Well, the treatment for BPH is driven largely by subjective symptoms and so there will come a time for some men, not all men, but a portion of the men that you treat with medical therapy for BPH will become dissatisfied with relief of symptoms, sometimes the symptoms will progress despite our best efforts with medical therapy. Then the other thing that may drive it is that some patients will experience significant side effects from medical therapy, particularly the alpha-blockers.

**DR. LEE FREEDMAN:**

And in this day and age do we ever see people presenting (1:30) just with acute urinary retention or even renal insufficiency because of BPH?

**DR. JOSEPH HARRYHILL:**

Not commonly because people generally get treated fairly early, but we will sometimes see that as a presenting symptom. For example, I see a lot of men in their 50s and 60s who will have some lower urinary tract symptoms from BPH and not be bothered significantly by them, then the patient comes in, for example, for an elective hernia repair or has a colonoscopy done and perhaps because of side effects from the medication or something that precipitated, all of a sudden you have a guy who is in acute urinary retention that was not significantly bothered by urinary symptoms. That is one way that we see them in patients who are either on alpha-blocker therapy or may be not being treated at all on a watchful waiting regimen and all of a sudden you are faced with a patient who obviously is going to need more attention to his prostate than he has had till that point.

**DR. LEE FREEDMAN:**

And that seems to be the exception to the rule; the rule is more that the symptoms or the side effects from the medications just gets the patient to say I need something else.

**DR. JOSEPH HARRYHILL:**

Right, and the other thing that I will see sometimes in men is the fact that they are concerned and you are too as an internist about polypharmacy. I feel badly about starting men on medication when they are already taking 5 or 6 medications for their cholesterol, their hypertension, and perhaps if they are adult-onset diabetics and then you begin to concern yourself with interaction between the medications, particularly between alpha-blockers and antihypertensives (3:00) and frankly I do have men coming to see me who say is there an alternative to medical therapy, I am sick of taking medications. They do not want to look at BPH as a chronic disease as you might hypertension or diabetes. If there is an alternative to medical therapy where they do not have to take medication, then some men are attracted to that even before they have even started medical therapy for BPH.

**DR. LEE FREEDMAN:**

Very interesting, so we have got that patient now who needs something more than medical therapy. TURP is the standard treatment. What is wrong with TURP and why do we need alternatives?

**DR. JOSEPH HARRYHILL:**

If you think about transurethral prostatectomy or the TURP operation then men refer to it as the roto-rooter procedure and I think it has gotten kind of a bad name that way, but I was thinking about this in the 20 years since I have been in residency, how much medical practice has changed and how much our surgical practice has changed, for example in 1986, the National Health Survey estimated that 350,000 patients in the Medicare age group had a transurethral prostatectomy or TURP done that year and that was probably the peak year. Basically all we had at that point in time was either watchful waiting or surgical intervention. The cost was enormous and that was one of the things that drove this. Medicare reimbursement began to decline for TURP that was another pressure moving towards either

medical therapy or minimally invasive intervention. The other thing about TURP is it requires anesthesia, it is a hospital stay usually for several days (4:30) and there are some significant side effects that you worry about and possible complications of the procedure that can be avoided either with medical therapy or perhaps some type of minimally invasive alternative. Along came in the 1990s the FDA approval for alpha-blockers specifically to treat BPH, the first I believe was terazosin or Hytrin which came out. We were using Minipress before that. I did not like it because of the orthostatic hypotension and in the mid 1990s, for example, there was finasteride and tamsulosin became popular. By 2004, we take this up through the present, the US sales of finasteride and tamsulosin were 400 million and 710 million dollars respectively.

**DR. LEE FREEDMAN:**

Wow!

**DR. JOSEPH HARRYHILL:**

The problem, however, is that medical therapy is expensive, and as I mention here, you are talking about treating men with one or two medications were a problem, that can be managed with other alternatives, and surgery in the long run is probably by some cost analyses economically superior to long-term medical therapy. So there are a number of things that sort of pushed us towards both medical therapy and to consider minimally invasive interventions and one of them that there has always been an attraction for us as a surgeon is laser therapy and how lasers could potentially be used to interact with tissue and treat prostate enlargement.

**DR. LEE FREEDMAN:**

If you have just joined us, you are listening to ReachMD XM 157, the channel for medical professionals. This is medical breakthrough from the University Of Pennsylvania Health Systems. I am your host, Dr. Lee Freedman and Dr. Joseph Harryhill, the Assistant Clinical Professor of Urology at the University of Pennsylvania is discussing with us treatments for BPH.

Dr. Harryhill what makes the laser particularly a good choice for prostate problems?

**DR. JOSEPH HARRYHILL:**

Well, the laser for treatment of prostate problems has advantages over TURP, particularly the KTP laser which lends itself well to this sort of therapy. Here we have a laser that can be used to vaporize tissue. It seals the blood vessels at the base of the vaporization so there is a very thin coagulation zone. The blood loss from the procedure is significantly less than transurethral prostatectomy and there is far less concern for fluid absorption through veins that sometimes will cause complications with TURP. So the recovery time is faster. You can remove tissue with laser vaporization either using KTP or Holmium YAG laser that will just about be the similar kind of removal that you can anticipate getting with a transurethral prostatectomy so when you look at that and compare it to other forms of minimally invasive therapy such as microwave, for example, the advantage that the laser has currently with the techniques that we use, we are actually ablating or actually removing tissue to a significant degree where you cannot get that much removal of tissue, for example, with an office-based microwave procedure.

**DR. LEE FREEDMAN:**

In terms of the pain and discomfort peri-procedurally is there a difference using the GreenLight KTP laser.

**DR. JOSEPH HARRYHILL:**

(7:30) There is. There is a shorter catheter time, for example, with KTP laser. Some centers do it as an outpatient procedure where you go home the same day without a catheter and the other advantage of it compared to TURP is that I mentioned of a significant decrease in the risk of blood loss and in fact we have been able to utilize KTP laser prostatectomy in men who are hematologically compromised, for example, patients with thrombocytopenia or patients with high risk for DVT or have a prosthetic heart valve that cannot easily come off their anticoagulation therapy. I have treated patients who are fully anticoagulated on warfarin without significant increase in bleeding, something that you could never do with transurethral prostatectomy, and the attractive part of being able to ablate and remove some of the tissue would make the therapy a better long-term alternative perhaps than medications or microwave therapy.

**DR. LEE FREEDMAN:**

Absolutely, and in this population we were taking about, a lot of them do have comorbidities and might be on warfarin, very interesting point. Technically, is this more difficult to learn and to perform than TURP or other types of minimally invasive procedures?

**DR. JOSEPH HARRYHILL:**

No, I would say not. I think it is very important that physicians who embark on a laser procedure practice of their own do get good qualification for this with laser safety and so forth. The laser is a very high-power source and you do need to actually be proctored and start out with cases that are relatively easy and straightforward. The actual action of it and the procedure itself (9:00) lends itself well to urologists who have been doing TURP surgery for many years. It is endoscopic work, the movements that you use are very similar to transurethral prostatectomy, but you do have to get used to the way the tissue is ablated, it is a bit slower and you have to be very patient with removing tissue particularly if it is a larger prostate gland. When we first started looking at this 8 to 10 years ago, Dr. Terence Malloy and myself at Pennsylvania Hospital, we had access to one of the very first 80-watt laser machines that Laserscope made for the KTP laser and we found at that power level that we were somewhat limited in the size of the prostate that we can treat. With the development of newer technology and a high-power machine, we now pushed the wattage up to 120 watts and we have more efficient vaporization, we can actually treat much larger prostate than we were able to do before.

**DR. LEE FREEDMAN:**

Interesting, and it is a newer technique. Do we have any long-term studies on efficacy?

**DR. JOSEPH HARRYHILL:**

There are some studies that are out showing 3 to 4 year efficacy and only may be 10 to 20% of patients who will require another form of intervention or repeat surgery. This compares favorably to, for example, microwave therapy where a 3-year study showed that as many as 50% of patients required a second surgical procedure or additional intervention at the end of the study.

**DR. LEE FREEDMAN:**

Dr. Harryhill are there other entities that one should consider when a man stops (10:30) responding to medical therapy for these type of symptoms?

**DR. JOSEPH HARRYHILL:**

Yes, exactly. That is a good question because you know we focus so much on the prostate that we look past the fact that it is a whole coordination between the bladder and prostate, in fact some men who fail medical therapy for BPH may actually have overactive bladder. There was a time when we really thought of that more as an entity for women, then in reality there is a higher incidence of overactive bladder in men over age 70 than there is with women. If they fail medical therapy, you need also to be thinking about the bladder and whether that might be a potential cause and that is where there is even some interest lately in using anticholinergic therapy for treatment of men with lower urinary tract symptoms who mask away it as BPH, but in reality may have overactive bladder.

**DR. LEE FREEDMAN:**

In the minute that we have left as you look ahead, do you see future developments in this area of treatment?

**DR. JOSEPH HARRYHILL:**

It is interesting. (11:30) There are some things that are coming down the pike that will be interesting to see how they turn out, for example, one is Botox therapy, Botox injections into the bladder and prostate to alleviate the muscular hypertrophy of BPH, some advances in medical therapy, and HIFU which is high-frequency ultrasound for treating both BPH and prostate cancer.

**DR. LEE FREEDMAN:**

I want to thank my guest Dr. Joseph Harryhill, Assistant Clinical Professor of Urology at the University of Pennsylvania who has been outlining the approach to symptomatic BPH. He spoke specifically about advances with using the KTP or GreenLight laser treatment for laser prostatectomy.

This has been medical breakthrough from the University of Pennsylvania Health Systems on ReachMD XM 157, the channel for medical professionals. Thank you very much for listening.

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