PSA, DRE, Biopsy, T2a, Suspicious <50% Lobe R Nodule, and *Malignant Neoplasm of Prostate Primary* = Proton Therapy to Prostate - Treatment Course of 44 Daily Treatments

or

Notes and Discussion on my Prostatic Adenocarcinoma

better

Treatment Tips, Tricks, and Traps

Gary Heartsill

December 2017

Photo by GH – 11 Oct 2017

Dedication(s)

To Jack who told me a long time ago he had gone to Loma Linda and spent 30 days being treated for his prostate cancer and was able to play golf everyday and enjoy wine with supper. He also said to make sure I know, not necessary what my PSA number is, but what it is doing (When it went from 1.0 to 1.5 that was a clue.) Jack hasn't missed a lick in life and still plays golf (but can you believe left handed?).

To Dr. John who told me a year ago I had a lump on my prostate and sent me to a urologist.

To Keith who helped me through the process of choice, biopsies, and encouragement for the trek.

To Dr. Lee, Gary Barlow, and the splendid personnel at TCPT who are in total lock step with giving us patients the professional help during the treatments – each one deserves a hug for their authentic and sympathetic handling as most of us look forward to being there every day to take our proton shots!

To Kelly and Lisa – and my family and friends who also understand the issues of being a survivor.

Abstract

This paper, discusses my medical life for a few months after being told I had prostate cancer with the idea that I can look back and remember what happened and at the same time pose some ideas and questions for someone who might be in or could be in the same boat. This rendering will really not tell how to beat prostate cancer but it will point to a direction in case your doctor tells you he felt a lump or reports a significant rise in your PSA.

This paper, is somewhere between "Oops, *̓Ω#^!" and "Damn, wish someone had told me about that!"

This paper, is also way more information than you need if you don't have cancer, not near enough information if you do, but somewhere between "Oops" and "Damn" it will be more than most of us have when your urologists says "You have some choices to make…"

Key words/questions/outline

a. Where is the prostate and what does it do?

b. What are the symptoms of the prostate 'going bad' and how can we prove malignant cancer?

c. Ok, I got prostate cancer so what are my options? ***[Note: the only thing more important than determining what to do, is finding out you have the cancer, in time to take care of it…]***

d. This is where it gets dicey…the problem is "who" will give you the no BS answer(s)?

e. The above c and d are critical and you are the only one that can make the decision – the theme of this paper and the real learning from my experience. Having good help is asking more than one person.

f. There are at least four ways to perform the surgical approach or radical prostatectomy.

g. What are the other ways to treat prostate cancer?

h. Course, for me, and therefore the crux of this paper is to share my proton beam therapy.

THE INFO BELOW

Let me be perfectly clear the choice of treatment is up to you!

You can see I am partial to proton therapy but for me this was the best choice.

The real task is to do your homework,

ask questions,

read,

then you choose!

IS THE ANSWER TO THE WHOLE BALL GAME

The Prostate (and more)

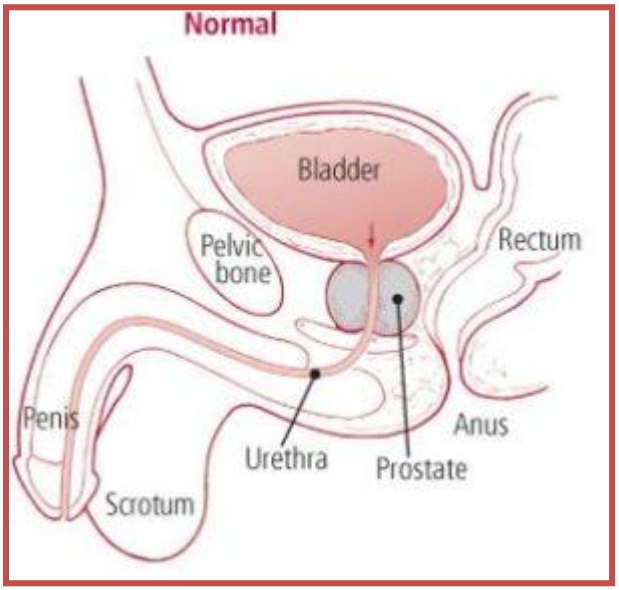


Image from: https://www.harvardprostateknowledge.org/prostate-basics

"Counterintuitively, the top of the prostate is called the base and the bottom is called the apex."

What is the Prostate?[1]

- The prostate is a walnut sized gland that is part of the male reproductive system.
- The prostate is located beneath the urinary bladder and in front of the rectum.
- The prostate makes some of the fluid that nourishes and protects sperm cells in the semen. Just behind the prostate are the seminal vesicles, which make most of the fluid for the semen.
- The urethra is a tube that carries urine and semen out of the body through the penis, running through the prostate.
- The activity and growth of the prostate is stimulated by male hormones called androgens.
- The main androgen is testosterone, produced by the testicles.

[1] https://prostatecancerfree.org/prostate-cancer/?gclid=CjwKCAiAjanRBRByEiwAKGyjZWDhtuOkAKPm6e0PFwBGPcgpAJAiomapSTe5pKTpIZrYErwiSuMPoxoCJMoQAvD_BwE

What are the Symptoms of Prostate Cancer?

Many men with prostate cancer have no symptoms related to their cancer. For those that do have symptoms, they could include any of the following:

- **Urinary problems** – weak urine stream, difficulty initiating urination, stopping and starting during urination; urinating frequently, especially at night, pain or burning with urination. These symptoms are also often associated with noncancerous enlargement of the prostate, called benign prostatic hypertrophy or BPH.
- **Blood** – in the urine and semen.
- **Pain** – in the hips, pelvis, spine or upper legs.
- **Pain or discomfort** – during ejaculation.

Treating Prostate Cancer[2]

Depending on each case, treatment options for men with prostate cancer might include:

- Watchful waiting or active surveillance
- Surgery
- Radiation therapy
- Cryotherapy (cryosurgery)
- Hormone therapy
- Chemotherapy
- Vaccine treatment
- Bone-directed treatment

You may be able to click on the links above to expand and read but I want to just list the choices for surgery as this 'seems' to be the popular option and for some The Gold Standard – and for a very good reason: it removes the entire prostate gland. This is a must read/see/view Web site as the examples and directions are quick and easy. Note "This type of surgery, sometimes referred to as an *open* approach, is now done less often than in the past."

Surgery (from the list above)

Radical retropubic prostatectomy
Radical perineal prostatectomy
Laparoscopic radical prostatectomy
Robotic-assisted laparoscopic radical prostatectomy

Active Surveillance and **Watchful Waiting** for Prostate Cancer

These two terms may show up in one of your discussions (as it did mine - twice) so you need to understand what they mean. Two quick quotes below and again from the list above:

[2] https://www.cancer.org/cancer/prostate-cancer/treating.html

- **Active surveillance** is often used to mean monitoring the cancer closely. Usually this approach includes a doctor visit with a prostate-specific antigen (PSA) blood test and digital rectal exam (DRE) about every 6 months. Prostate biopsies may be done every year as well. If your test results change, your doctor would then talk to you about treatment options.
- **Watchful waiting (observation)** is sometimes used to describe a less intensive type of follow-up that may mean fewer tests and relying more on changes in a man's symptoms to decide if treatment is needed.

Radiation Therapy for Prostate Cancer[3]

Two types of radiation therapy include **External beam radiation** (EBRT) and **Brachytherapy** (also called seed implantation or interstitial radiation therapy).
External **(EBRT)** includes:
Three-dimensional conformal radiation therapy **(3D-CRT)**;
Intensity modulated radiation therapy **(IMRT)** – includes image guided radiation therapy **(IGRT)** and volumetric modulated arc therapy **(VMAT0**);
Stereotactic body radiation therapy **(SBRT)**;
proton beam radiation therapy **(PBT).**

See the Web site or link below for side effects and more information. Notice old and outdated information on Proton Beam Therapy. (More on PBT toward the end of this review).

First Reference Book[4]

While waiting for my 'proton shot' one day an older gentleman said I needed to get a book to help me with the questions I was asking him. Two days later the Walsh book showed up and I would like to say it does have some information – 590 pages worth and in a lot of areas some good informative information. However, there are a couple of issues before I start quoting him (or suggesting his work). One, he is a surgeon. This is what he does for a living (besides write) so we should know where he is coming from. Two, he only has one page on proton beam therapy. So, what does that tell you? Three, the good news his fourth edition will be out in May and this may clear up and update his work.

I do like what he says because he pushes the idea of getting more than one opinion and making sure it will take some work to come up with the decision for one's own self.

Welsh, page 216, The Short Story on "What are my options"

> *"What's the best treatment for prostate cancer? This is a trick question. There is no single best treatment, because prostate cancer isn't a one-size-fit-all disease. It's different in every man…If you have localized disease…you have three main treatment options: active surveillance, surgery, or radiation therapy.*

[3] https://www.cancer.org/cancer/prostate-cancer/treating/radiation-therapy.html

[4] Walsh, Patrick & Worthington, Janet (2012). *Dr. Patrick Walsh's guide to surviving prostate cancer* (3rd ed.). New York, NY: Grand Central Life & Style.

The best thing you can do now is educate yourself – not just about prostate cancer but about the doctors who treat it. You're building a bridge here, and you can go only so far by yourself."

I jumped right into the middle of Welsh's book[5] with this quote to get the sentiment and flavor of his work and will pop in and out of his work as we go along but it is time now to share some numbers and to press on!

My cancer trek

2016 August – Physical. My doctor told me I had a 'spot' on my prostate and suggested an urologist.

2016 September – Urologist cut to the chase and said "drop your drawers" and then "you are 78? I don't think you have anything to worry about for the next nine years." I said "I am outta here!" Then he said "However, given the fact, although I do not think it is, the slight hardness on the left side (35%) I would like to see you in six months just so we can watch it."

2017 February – Urologist in 1.5 minutes said "no change" and then added I was outliving the cancer threat – or living past it…whatever that means. I started looking for a new doctor as I was not pleased with his bed side manners and kinda didn't look forward to his DREs.

2017 – July Blood work early before physical in Aug. PSA jumped from 1.0 to 1.5 in one year.

2017 – August visit with new urologist. Decided on biopsy ASAP and c/w it on 30 Aug.

2017 – September 7 biopsy results showed cancer. Was enrolled at TCPT by 5 p.m.

2017 – September Saw Dr. Lee on the 15th and had to wait four weeks to let blood clear up from biopsy.
2017 – October Fiducial markers placed in prostate the 11th, MRI/PET and simulation on the 12th.

2017 – Proton Beam Treatment started October 18 for 44 treatments – to end on/about 21 Dec.

Key words: spot on prostate (suspicious nodule), DRE, PSA, Biopsy, PB Treatment

Let's add it up

Took about a year for the verdict of prostate cancer and it was immediately "a low intermediate stage – T2a." Well, I have been watching. Was a little bit disappointed with the biopsy but was surprised to see how aggressive the level was and to be at T2 so quick. I thought I was really on top of it. This still concerns me…

Ok, I have been watching my PSA for years. It has slowly gone from .1 or .2 up to 1.0 and this increase has really only happened in the last six or so years with .5, .6, .7, .8, .9, and 1.0 in 2016. Then the lump or hardening felt by my doctor during my physical. I was told this was normal for a man my age as this is what happens as one gets old. I'll buy that. I would attribute being overweight to the problem. I'm guessing the doctors were thinking the same thing and like my first urologist said "see you in six months so we can watch it."

[5] To Welsh's credit observe where he will say "Men who probably need…" and "Men who probably don't need…" **He more than once suggests getting the right doctor to do the job.**

Something else was happening and I can only now connect the dots from late 2015 to August of 2016 as I just felt like crap some of the time. I would feed Biscuit, start my coffee, and then lay down to stretch my ole back and think "Dang, I feel awful. Should I do my exercises or just get up and go back to bed?" I thought this was because my CPAC was not working right and yes, I was a bit over my fighting weight. Looking back this was masking the cancer which was in full go mode.

So, could we have found it any quicker and would that have made any significant difference? Maybe. Who knows? This is one reason I am writing this paper. Maybe you can connect the dots quicker when it shows up on your DRE or PSA?

I am not losing any sleep over this but there are a couple of issues. The doctors (and literature) said (say) watch your PSA and check your prostate with a DRE. My PSA went to 1.5 and I had a knot. They all said to wait, watch, and we'll see…meaning, again, the knot is normal for old guys, and the PSA is not anything to look at until it gets to 4.0.

When I saw 1.5 PSA it was a significant spike and I went to another urologist who explained yes, you have spot, you could wait a few months to get another PSA or maybe we can do the biopsy so that you will know if you have cancer or not , and if so, you can see how aggressive it is.

That decision didn't take very long. It did however take almost two months from the 1.5 PSA to the malignant biopsy report to be given to me.

"NOW IT IS ~~NO SH*T~~ SHOW TIME! "

The crucial part of my story is how well both the urologist and my doctor 'suggested' what to do. Both knew I was going the proton route if it was cancer and both agreed with my decision but what they said that was so helpful was "you could wait and see…or, I could remove it…but I know you want to go another way and I can't help you, but will call and see what I can find out for you" to "I agree with your decision of proton therapy and agree on starting now because you will be year older if you wait."

The rest is history - even as we speak.

Enabling Comments on the Biopsy Report

> PROSTATE BIOPSY REPORT EXTENDED SEXTANT (12 SITES)
>
> CLINICAL HISTORY: Elevated prostate specific antigen (PSA). Last PSA result 1.5, Date 07/11/2017, Clinical Stage T2a, D.R.E. Suspicious: Abnormal, Unilateral <50% of Lobe R Nodule.
>
> In the DIAGNOSTIC INFORMATION – FINAL
> **G) Right Base Lat – Prostatic andenocarcinoma, Gleason score 3+4=7:1mm; 8% of tissue. Perineural invasion is identified.**
> **H) Right Mid Lat – Prostatic adenocarcinoma, Gleason score 3+3=6; 3mm; 21% of tissue.**
>
> PHOTOMICROGRAPH
>
> PARTIN TABLE
>
> SIGNATURE (by Pathologist)

****** Now the fun part starts and the learning curve continues UP.***

This page shows the criteria for the Clinical Staging of the prostate. Mine is yellow highlight or T2a.

STAGING[6] The TNM staging system parallels the American Urologic System staging.

Prostate Cancer Staging (Abridged Version)

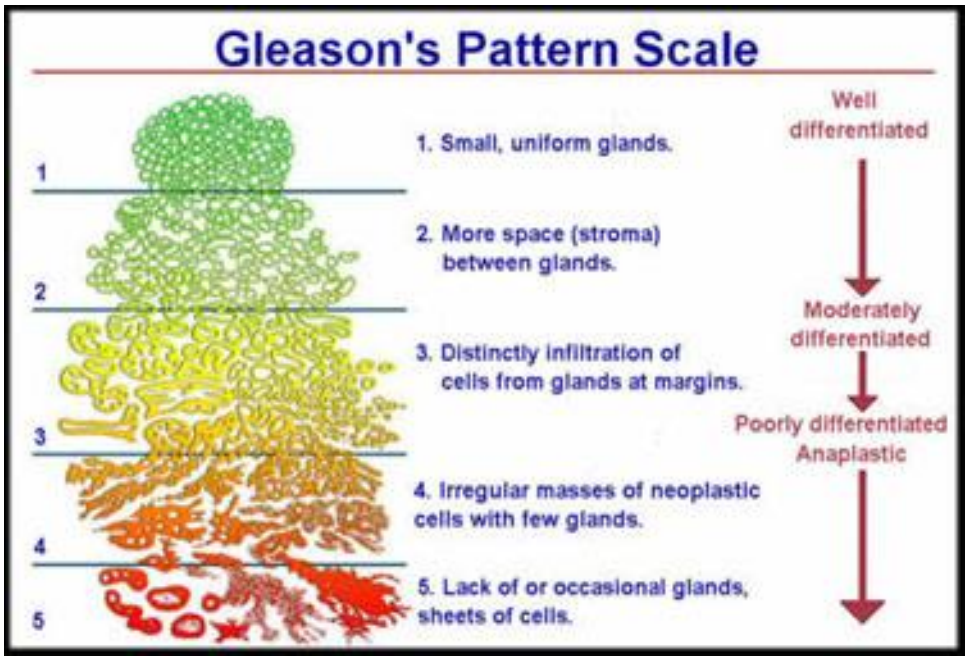
AJCC	Jewett	Definition
T0		No evidence of primary
T1	A	Clinically inapparent
T2	B	Confined to prostate gland
T3	C	Through the capsule
T4		Fixed; adjacent structures
N_, M_	D	Distant metastases

Criteria for TNM Clinical Staging: Physical examination including digital examination, histologic verification of malignancy, imaging, endoscopy, laboratory tests. Criteria for TNM Pathologic Staging: total removal of the prostate and seminal vesicles as well as pelvic lymph node dissection is required for pathologic staging.

Brief Summaries of 6th Edition Categories

TNM Classification		Histological/Clinical Features
T1	T1	Not palpable or visible
	T1a	<=5%
	T1b	>5%
	T1c	Diagnosed on needle biopsy only
T2	T2	Confined to prostate
	T2a	One-half of one lobe or less
	T2b	>one-half of one lobe but not both lobes
	T2c	Both lobes
T3	T3	Through prostatic capsule
	T3a	Extracapsular
	T3b	Seminal vesicles(s)
T4		Fixed or invading adjacent structures: bladder neck, external sphincter, rectum, levator muscles, pelvic wall
N1		Regional lymph node(s)
M1a		Non-regional lymph nodes(s)
M1b		Bone(s)
M1c		Other site(s)

[6] https://training.seer.cancer.gov/prostate/abstract-code-stage/staging.html



"Prostate Cancer Grading & Prognostic Scoring[7]

The Gleason Score is the grading system used to determine the aggressiveness of prostate cancer. This grading system can be used to choose appropriate treatment options.

The Gleason Score ranges from 1-5 and describes how much the cancer from a biopsy looks like healthy tissue (lower score) or abnormal tissue (higher score). Most cancers score a grade of 3 or higher.

Since prostate tumors are often made up of cancerous cells that have different grades, two grades are assigned for each patient. **A primary grade** is given to describe the cells that make up the largest area of the tumor and **a secondary grade** is given to describe the cells of the next largest area. For instance, if the Gleason Score is written as 3+4=7, it means most of the tumor is grade 3 and the next largest section of the tumor is grade 4, together they make up the total Gleason Score. If the cancer is almost entirely made up of cells with the same score, the grade for that area is counted twice to calculated the total Gleason Score.

Typical Gleason Scores range from 6-10. The higher the Gleason Score, the more likely that the cancer will grow and spread quickly."

I just saved you about six hours of study time by connecting the Gleason scores on my biopsy report and the text and graphic to show what they mean. You are welcome.

[This Web site shows and compares the NEW GRADING SYSTEM of 1, 2, 3, 4, and 5. See the link below.]

[7] https://www.prostateconditions.org/about-prostate-conditions/prostate-cancer/newly-diagnosed/gleason-score

I noticed in the report (in red) where it said **Perineural invasion is identified.** What does this mean?

Well, I am glad you asked - thank you…Let me go to Welsh (2012) to explain it because my favorite dermatologist said to me after I sent him my biopsy report for his comment (another doctor's opinion) he would be concerned with this area of extension[8].

> "Because the nerves are most common close to the surface of the prostate, the finding of perineural invasion on a biopsy suggests that the cancer is close to the edge of the prostate and may well have penetrated the capsule. However – this is important to keep in mind – *cancer that has penetrated the capsule can still be cured*. This makes perineural invasion a paradoxical finding, because although men with perineural invasion are more likely to have capsular penetration, they may still be cured with local treatment (surgery or external-beam radiation therapy) alone" (p.184).

[Let the record reflect Dr. Lee has assured me the proton margin for each treatment is about 12mm.]

Ending Comments for PSA, DRE, Biopsy,T2a, and Gleason Scores

DRE

There are two items to comment on before the last section and it has to do first with DRE or Digital Rectal Exam and as personal as this is, may I suggest you find someone who really knows how to do the exam? In the airline business you wouldn't want to fly with some guy who only flies one trip a month so you need to use a DREer who does it for a living. And yes I was lucky. Call me and I will tell you all about them.

Did mention a while back that I had had about a half dozen rectal exams and one of them gave me cancer…but (butt?) that didn't go over very well. Ah, a little humor – "thank you so very much!"

Again, there are some who can do this and they are smooth – you need to make sure your doctor is…enuff on this.

BIOPSY

The same person who can do a smooth/painless DRE can probably do the biopsy smooth too. I have his name if you want it. Having said that make sure the 'area' is deadened before the needle goes through

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8 My Gleason reflected a 22% Extrapostatic Extension at Right Mid Lat. See this PubMed report titled "*Extraprostatic Extension Is Extremely Rare for Contemporary Gleason Score 6 Prostate Cancer*. https://www.ncbi.nlm.nih.gov/pubmed/27986368 This is just a good reference…

Full text: http://www.europeanurology.com/article/S0302-2838(16)30880-6/fulltext

"Conclusions - In a large prostatectomy cohort, GS6 never had seminal vesicle invasion (0%) and was very rarely (0.28%) associated with extraprostatic extension."

the rectum wall to 'plug' your prostate 12 (or more) times. I won't say that again but this procedure is not that bad if deadened. Let me direct you to my second reference book in a few lines. Did you hear what I said about poking holes to get to your prostate? Is this a trick, trap, or a tip? Dang sure was a surprise to me but thanks to Keith for explaining the procedure because going in cold is a big mistake.

Lastly, if you are having trouble with getting a DRE or a biopsy you need to call someone. The biopsy is certainly not a walk in the park but it won't kill you.

PROTON TIME

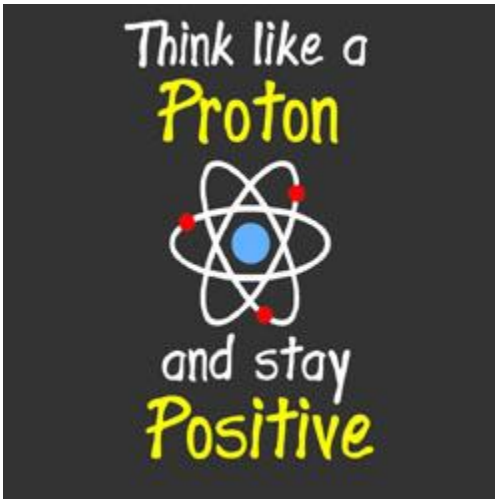
Meet **Dr. Andrew Lee** the Medical Director in the Featured Video of this link (1:32 mins)

https://www.texascenterforprotontherapy.com/?gclid=Cj0KCQiAsK7RBRDzARIsAM2pTZ969ePeQmerPNJau15ASHHDiARrY4RinCVDKhx4iKJberP2kLHln5UaAoFnEALw_wcB

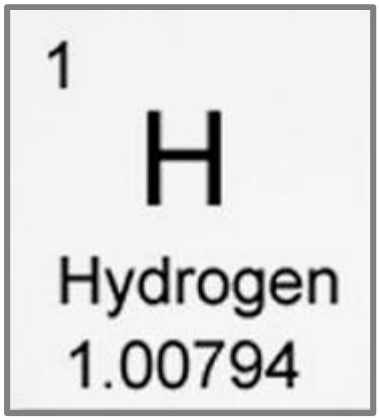
Meet **Gary Barlow**, B.S.R.T. (R) (T) the Director of TCPT:

https://www.texascenterforprotontherapy.com/about-the-center/our-team/gary-barlow

Like I said earlier one hour after I found out the biopsy showed malignant prostate cancer I was on the phone getting enrolled in Proton Beam Therapy at the Center. I cannot say enough about the staff, the receptionists, and the therapists…they make getting a shot of proton something to look forward to EVERY DAY!



Early in the morning especially is the time to think positive as this is when the children come in – as they must for their treatment with an empty stomach. One must be positive to see the mother or father sometimes wearing a mask, sometimes letting the scars show on the bald heads of the children, sometimes putting the rest of us to tears…



Where our protons come from - *"We don't need no stinking electrons."*

$111M proton therapy center opens in Irving
https://www.bizjournals.com/dallas/news/2015/11/11/111m-proton-therapy-center-opens-in-irving.html

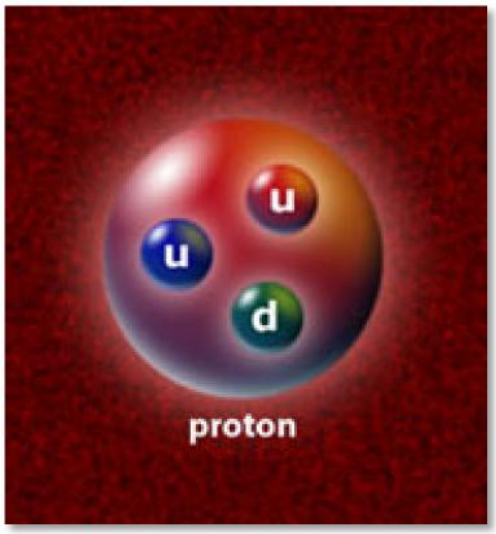
*This one is a bit heavy, well it is two up quarks and one down quark – but it is positive…(7:43 mins).
Electrons, Protons and Neutrons – (for the proton see 1:36 to 2:11)
https://www.youtube.com/watch?v=Vi91qyjuknM

For the principle and working of a Cyclotron in the link below (maybe more information than you need):
https://www.youtube.com/watch?v=cNnNM2ZqIsc

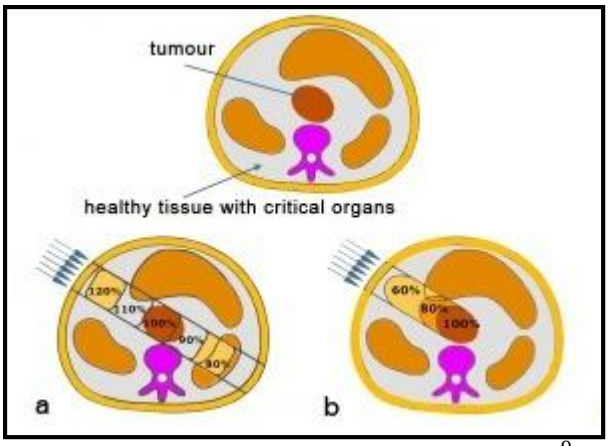
How proton therapy works:
http://www.proton-therapy.org/howit.htm

Frequently asked questions on proton therapy (Loma Linda University)
https://protons.com/patient-resources/frequently-asked-questions

Here is a link from Popular Mechanics explaining cyclotron, beam line, and gantries.
http://www.popularmechanics.com/science/health/a4990/4335465/



Do you see my quarky clues?



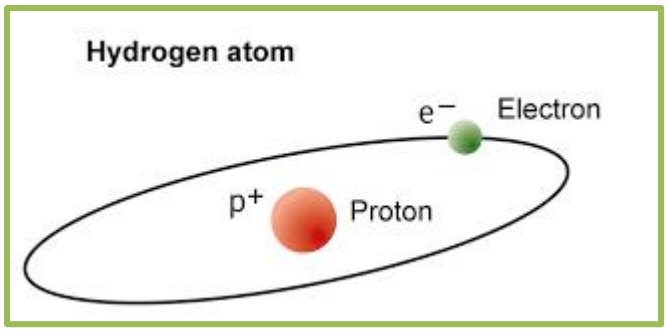
A fundamental problem of radiation[9]

The image above shows a comparison of two procedures. "Photon" therapy (a) deposits a high dose of radiation in the healthy tissue in front of the tumor. In the case of a particle beam (b), most of the dose is confined to the tumor.

Proton Beam Therapy – Mayo Clinic (3:12 mins)

Standard radiation therapy is an effective way to treat many cancers. But it isn't perfect. It kills cancer cells, but it also kills some healthy cells in its path through the body. That's just one of the reasons Mayo Clinic is bringing a new type of radiation therapy to its patients. It's called proton beam therapy, and it has the potential to cure more cancers with greater safely, and help people live longer.

See especially (as Dr. Lee showed in his short video) the animation on **Pencil Beam Scanning.**
This demonstration will sell some tickets…
https://www.youtube.com/watch?v=OTd5dv3VDws



[9] http://www.nupecc.org/NUPEX/index.php?g=textcontent/nuclearapplications/nuclearinmed&lang=fi

Second Reference Book[10]

This book was recommended by the TCPT Medical Director Dr. Lee who referred me to him by calling him "Proton Bob" which turns out to be his Web site www.protonbob.com

Bob tells his cancer story – humorous at times, but as serious as a heart attack – as he attended Loma Linda University Medical Center (LLUMC) in the fall of 2000. This book is worth every dime of 20 bucks and is required reading if you are a candidate for prostate cancer. He takes the reader through his systematic inquiry of the proton treatment, for instance, by calling their 1-800-PROTONS with a list of questions (pp. 74-78) and used a "Decision Matrix" to help him for his treatment choice (p. 91).

Of interest is comparing the LLUMC procedures with TCPT. Issues are about PVC pod, balloons, and wearing the hospital gown often called a 'johnny.' He goes to four places with his details – just a joy to read, and again an absolute must; however, on the issue of balloons you will not get this information from me but will suggest to you at our Texas Center that you will find out during your simulation procedure a few days before your first treatment.

> *"The difference between a successful person and others*
> *is not a lack of strength, not a lack of knowledge,*
> *but rather in a lack of will"* (p. 183).
>
> -- Vince Lombardi

Proton Beam Therapy for Localized Prostate Cancer: Results from a Prospective Quality-of-Life Trial[11]

Abstract

Patients and Methods: Patients were enrolled in a prospective trial. All participants received 75.6 to 78 Gy (RBE). Up to 6 months of luteinizing hormone-releasing hormone agonist therapy was allowed. The Phoenix definition defined biochemical failure. Modified Radiation Therapy Oncology Group criteria defined toxicity. Expanded Prostate Cancer Index Composite questionnaires objectified QOL. Clinically significant QOL decrement was defined as ≥0.5 × baseline standard deviation.

Results: In total, 423 men were analyzed. The National Comprehensive Cancer Network risk classification was used (low 43%; intermediate 56%; high 1%). At the 5.2-year median follow-up, overall and disease-specific survival rates were 99.8% and 100%, respectively. Cumulative biochemical failure rate was 5.2% (95% confidence interval [CI] = 3.0%-8.3%); acute grade 2 genitourinary (GU) toxicity was 46.3%; acute grade 2 gastrointestinal (GI) toxicity was 5.0% (95% CI = 3.1%-7.3%). There was no acute grade ≥3 GI or GU toxicity. Cumulative late grade 2 GU and GI toxicity was 15.9% (95% CI = 13%-20%) and 9.7% (95% CI = 6.5%-12%), respectively. There were 2 grade 3 late GI toxicities (rectal bleeding) and no late grade ≥3 GU toxicity. The 4-year mean Expanded Prostate Cancer Index Composite urinary, bowel, sexual, and hormonal summary scores (range; standard deviation) were 89.7 (43.8-100; 11), 91.3 (41.1-94.6; 10), 57.8 (0.0-96.2; 27.1), and 92.2 (25-95.5; 10.5), respectively. Compared with baseline, there was no clinically significant decrement in urinary, sexual, or hormonal QOL after treatment completion. A modest (<10 points), yet clinically significant, decrement in bowel QOL was appreciated throughout follow-up.

Conclusion: Contemporary PBT resulted in excellent biochemical control, minimal risk of higher-grade toxicity, and modest QOL decrement. Further investigation comparing PBT with alternative prostate cancer treatment strategies are warranted.

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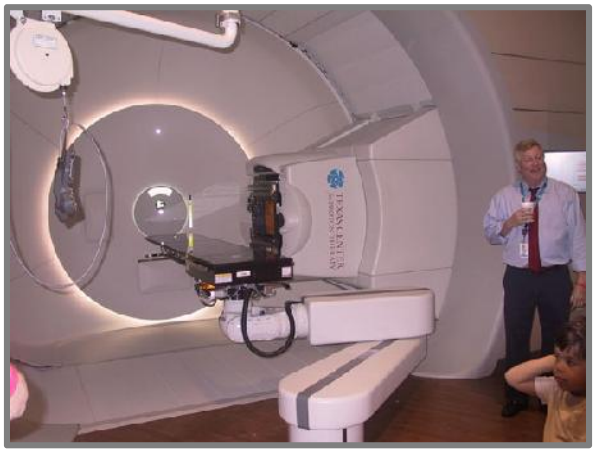
[10] Marckini, Robert J. (2006). *You can beat prostate cancer…and you don't need surgery to do it.* Made in the USA, San Bernardino, CA: 14 November 2017.

[11] This 2016 article by A.K. Lee, et al., was published in the International Journal of Particle Therapy at: http://www.theijpt.org/doi/full/10.14338/IJPT-16-00006.1?code=ptcg-site

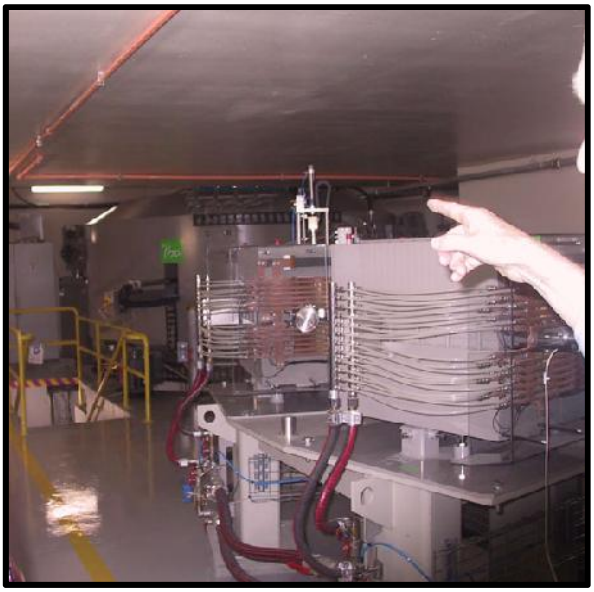
Center Tour with Director Gary Barlow

Kelly with me for the tour – at entry door.

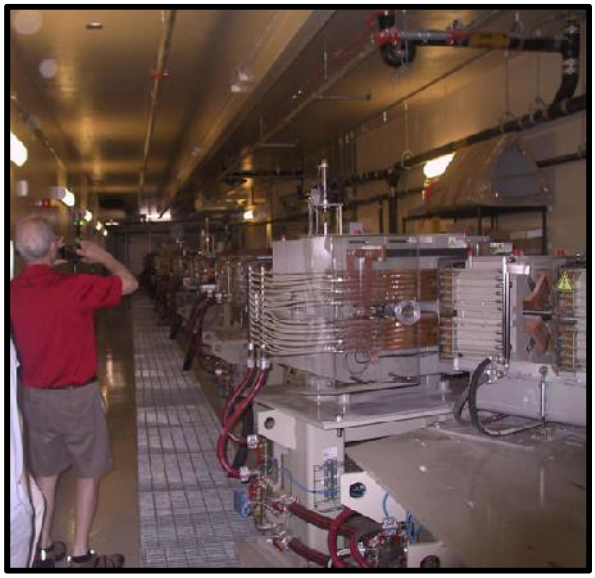


Gary – middle rotating gantry “Courage”

The Iba Cyclotron – the best there is!



Beam pipe going north from cyclotron – then thru magnets and turning corner to the west to gantries.



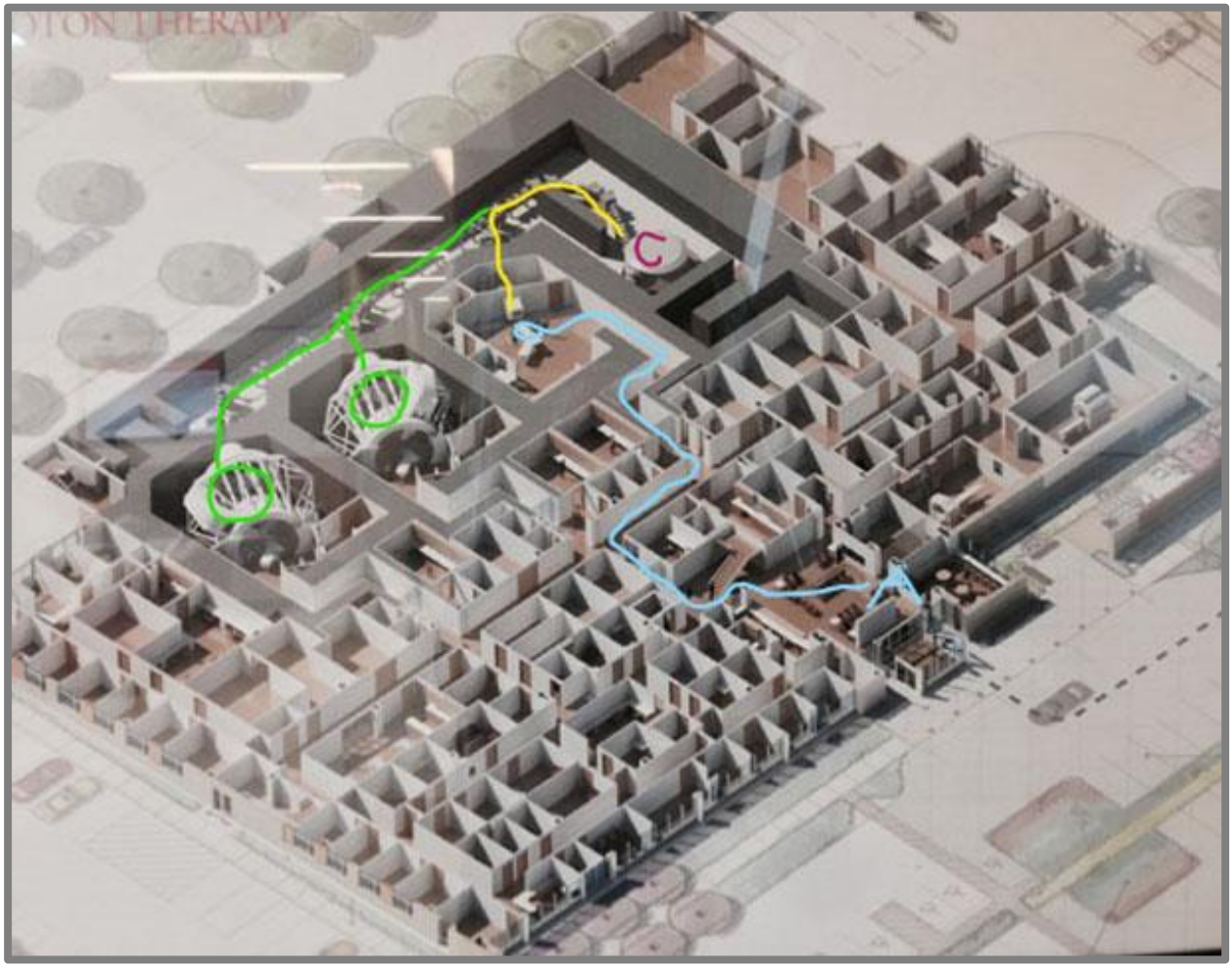
End of the line as the beam has three entries into Strength, Courage, and Hope – to the right in pix above.

Into Strength from back wall


From Beam Pipe

Inside Strength gantry (x-ray is on overhead rollers to the right).

Ok, let me walk you through my treatment following the blue line from dressing room to beam room.



Picture in the hall way next to the reception desk

A. Hall way entry room/coffee bar. **Blue** line shows path to prostate treatment gantry called ***Strength***.

B. **Green** line shows proton route to ***Hope*** and ***Courage*** *rotating* gantries – under the two green circles.

C. The red **C** is the IBA cyclotron.

For more information about the center see:

https://www.texascenterforprotontherapy.com/about-the-center

Tours at Texas available

most Saturdays at 10:00 a.m.

Please call 469-513-5500

in advance to sign up for the tour

Hospital gown “Johnny” time!

Gary showing how table is moved to be ‘beam correct.’

Therapists will make sure the prostate is lined up with the beam and then go to “Beam Room” to shoot.

They wait here for BEAM READY and then they shoot!

Socke es zu mia!

The beam is only on for maybe 24 seconds and then we are turned around for a shot through the other side so if the beam is ready it is only anther 24 seconds and the treatment is done. Total time of course varies but runs 15 to 45 minutes average – no pain…

Of concern is being ready for the treatment which is having a required amount of water in the bladder, empty bowel, and no gas. These items make more room for the beam to come through and less items to get in the way.

Forgot to tell you us prostate patients have three carbon markers strategically placed in a small triangle on our prostates. Dr. Lee placed the fiducial markers (about the size of pencil lead) before treatments and we had a short MRI and PET scan to make sure it was where it should be. So, when we take our position on the table by initially lining up with plastic markers on our hips and knees, they go to the x-ray room to make sure we are lined up in the beam hole with our markers – to within one millimeter (about the width of a thin dime).

Then we are like a bag of rocks not moving anything to assure our beam is doing its job of covering the whole prostate plus a small margin of about 12 mm.

Before day one the doctors have reviewed our records to determine how much and how long with beam dose and velocity – among other items (above my head). I do know we get about 79.2 Gy (RBE) – see Dr. Lee's abstract – which is 1.8x44 which means about .9 for each side per treatment. We verify our name tag bar code with our picture and then the chart program is someway loaded to tell the beam what to do. There is more but I do not have a need to know or even know what to ask, by the way.

Meeting the daily treatments

The proton center came along for me about the time I-35 got done enough and with the Bush already complete my commute time for the 24 miles has been about 27 minutes. I paid ahead for my toll road for the 44 days ($98.29) and figured my gas estimate (secret). Have some friends less fortunate having to drive 152 miles one way each day – but he is as happy as I am with the treatments. His wife said this has been a vacation for them…

Life after Proton Treatment

This section is pretty well covered in Chapter 11 of Proton Bob's book and says each year the PSA is checked and a DRE is administered. I have been told the first meeting will be in four months for both of these items with a follow on schedule to see how it goes.

I hope to be around in five years to make one of Dr. Lee's successful statistical journal article as just another proud number.

Gong Time

Being a little optimistic about getting my 44 treatments behind me I have written out my very short speech before clanging the gong (actually this is just to put some closure on this paper).

"This is truly a propitious and fortuitous moment.

I want to say thanks to the staff, the receptionists, therapists, and doctors for all the protons you have given me as a humble prostate cancer patient.

However my gong will reflect a change (Gary Barlow is going to like this). Keying from the words of Captain Buzz Lightyear who said "to infinity and beyond!" I now say:

THE MOST ADVANCED PROTON CENTER IN ~~TEXAS~~ *THE WORLD!*

GONG!

All you really need to know is in this Web site:

https://www.texascenterforprotontherapy.com/

Except perhaps how large the hole is in the logo of all of the calling cards…