

THE PROSTATE

SMALL GLAND **BIG** PROBLEM

By John Crow

Chapter 5

I concluded chapter 4 discussing the stages of Prostate Cancer. We will now consider the various treatments available for all types of Prostate problem.

Just to recap the three main areas responsible for the majority of Prostate problems.

- (1) Infection. (Prostatitis)
- (2) BPH (Benign Prostatic Hyperplasia)
- (3) Cancer.

RECOGNISED CONVENTIONAL TREATMENTS

INFECTION

Most Urinary tract infections are not life threatening yet can be embarrassing, annoying and inconvenient to say the least.

Infections of the Prostate can be more complex and sometimes extremely difficult to bring under control. There are different categories ranging from acute bacterial Prostatitis to chronic inflammatory or non-inflammatory Prostatitis.

The usual treatment for Prostatitis is a course of antibiotics, CIPROFLOXACIN being the most common. Whereas most infections are cleared up within 10 days of commencing a course of antibiotics, unfortunately this is not always the case with Prostatitis especially if the infection has taken a hold deep within the Prostate Gland. In these cases it may take many months to bring the infection under control.

A course of an Anti Inflammatory drug may also be of benefit.

BPH

BPH is characterised by the overgrowth of **benign** (*Non Cancerous*) prostate cells, resulting in the enlargement of the Prostate gland. This enlargement leads to the narrowing of the urethra due to the cell overgrowth and if left untreated can lead to total blockage and hence the inability to pass urine.

If the symptoms (See chapter 2) have been ignored and the condition left untreated, the situation can be very painful, requiring immediate catheterisation, or worse, may result in total renal failure.

There are two main options as regards treatment, namely Surgery and/or drugs; however surgery should only be considered when the discomfort becomes unacceptable. Your doctor should make periodic examination.

Surgery

Decades ago surgeons would have taken the drastic step of performing a **Prostatectomy (See *Cancer treatments*)** for this condition, however this approach has been abandoned in favour of a less drastic and invasive method.

Currently the most common type of surgery for **BPH** is a **TURP** (Transurethral Resection). I will spare you the eye watering details, suffice to say the procedure can be likened to having a re-bore where the build up of offending cells are literally scraped or burnt away. Enough said I think!

Newer methods, although not widely used at present, involve the use of liquid nitrogen (Cryogenic) or Lasers rather than the "Scrapper". These methods have the advantage of being very quick with minimal blood loss.

Before taking the final decision as to whether you have a TURP or not, you should be aware that it may result in temporary or permanent impotence.

Drugs

The two main drug groups currently used are **Alpha Blockers** which relax the muscles in the Prostate thus relieving the pressure on the Urethra, and **5-alpha reductase inhibitors**.

As the latter of these two drugs may also be used to control Prostate Cancer I will leave the detail until we move on to that subject.

PROSTATE CANCER

Doctors and even specialists will have widely differing views as to what should be done if it is confirmed by **Biopsy** that you have Cancer. It is most important to have a knowledge of the subject in order to assist in the decision process, after all it is your body that is about to be 'messed' with. *(This is the reason why I am writing this series of articles)*

Dependent upon the result of the biopsy and to some extent the age of the man there are various treatment options open to you, namely: -

Watchful waiting

Radical Prostatectomy

Hormone treatment

Radiotherapy

Chemotherapy

Castration or Orchiectomy *(Not my choice)*

Other unconventional methods *(See my special article on this very controversial issue in a later chapter)*

Note: - Any of the above regimes may be undertaken, or indeed a combination thereof.

Watchful Waiting

This is a simple one since it involves doing as it suggests; waiting. If the **PSA** is still quite low and the Biopsy results indicated a low to moderate **Gleason score**, then dependent upon age, and remembering that most Prostate Cancers are relatively slow growing, it may be considered better to let you die with your Cancer rather than from it. A man with low grade Prostate Cancer may survive for many decades, sometimes without ever suffering any appreciable symptoms.

Radical Prostatectomy.

Now we get down to the serious stuff.

I have studied this subject in some depth and conclude that should it deem to be the option for you, then please **DO** make sure that it is performed by a very competent and experienced surgeon. I know that someone must always be the first one, but make sure it is **NOT** you. I will now explain why.

The **Radical Prostatectomy** is a most delicate and complex major surgery involving major blood vessels and nerve bundles. It is the total removal of this gland that has served you so well throughout your life.

Unfortunately when man was designed and the Prostate gland placed where it is, next to the bladder and bowel, it was probably not part of the grand plan that it should ever need to be removed. A further most important consideration is that certain vital nerve bundles controlling continence and sexual stimulation are literally wrapped around the Prostate Gland itself. In the early days of performing this operation surgeons were not aware of these nerve bundles and hence nearly all patients were rendered both incontinent and impotent. Not a pleasant prospect for the rest of your life.

Do not despair, things have changed, and the **experienced surgeon** is now able to carefully separate these nerve bundles (known as nerve sparing) and in most cases eliminate or at least minimise the aforementioned problems.

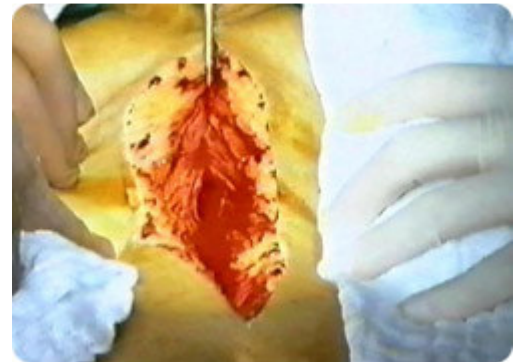
The operation is a fascinating procedure (*I have studied it stage by stage*) requiring a very careful hand on the part of the surgeon, (*If he/she smells of booze at pre-op stage, jump off the table and go home*) however providing the cancer is caught at an early stage and has not spread outside the capsule itself then the procedure offers the most effective cure or at least many more years of quality life.

Laparoscopic Prostatectomy

Laparoscopy is a technique of performing a surgical operation using instruments inserted through narrow hollow tubes ('ports') rather than through a larger incision, as in traditional surgery. The result is shorter hospitalisation and convalescence, less bleeding and post-operative pain and fewer wound complications.



Ports placed for laparoscopic radical prostatectomy



Incision for traditional radical prostatectomy

Although laparoscopy is a type of keyhole surgery, the view obtained is much better than looking through a keyhole. Modern equipment produces a wide, bright, clear and magnified view of the operation. The gas used to distend the abdomen during laparoscopy also greatly reduces bleeding during surgery.

Robotic surgery?

For select patients, surgical removal of the prostate gland, along with the prostate cancer, can be performed using a laparoscopic approach. "Laparoscopic prostatectomy" offers the benefits of a minimally invasive approach to surgery. These benefits generally include: reduced pain, shorter hospital stays, and a faster recovery. These advantages are attractive to both surgeons and patients, and reports of excellent rates of cancer control, urinary control, and sexual potency, already established by open surgery, have been equalled or surpassed with these minimally invasive approaches to prostate removal.

The arrival of robotic technology has dramatically enhanced a surgeon's abilities to perform minimally invasive surgery with precision and speed. With the da Vinci robot system, the surgeon is seated comfortably a few feet away from the patient at a control console, while his assistant stands by the operative table. Surgery is performed through tiny incisions, like standard laparoscopic surgery. However, the robotic instruments, about the diameter of a pencil, have wrist-like manoeuvrability, allowing the surgeon to move them like his own hand, as opposed to standard laparoscopic instruments, which have a much more limited range of motion. The advanced optics allows the surgeon to view the operative field at high magnification, while maintaining a three-dimensional perspective unlike standard laparoscopic surgery. Finally, the dexterity of the surgeon's hand is enhanced by the robotic system, scaling motion to allow microsurgical movements, unequalled with either open or standard laparoscopic surgical approaches.

Hormone treatment (cytoreduction)

You may remember that I mentioned this when I discussed **BPH** above. Similar or in many cases the same treatments apply and I will now explain how they actually work.

As it would happen Prostate Cancer thrives on **Testosterone** or to be more accurate **DTH** (**dihydrotestosterone**), so it follows that if we can cut off the supply then *theoretically* the Cancer should not survive. For reasons of available space it is not possible to go into more detail regarding the production of **Testosterone** and its derivative **DTH** and why the Cancer may not die if it removed.

There are three recognised ways of chopping or reducing the effects of **Testosterone** upon the Prostate Gland. One of these options is **Castration** since *most* (but not all) of the Testosterone in the body is produced in the testicles. As I said earlier this would not be my eye watering option and I will not mention it again.

The other two options involve the use of Chemicals or **Hormones** to be exact about it.

LHRH (Luteinizing hormone release hormone analogues) which switch off the production of testosterone.

Anti-Androgens which dampen the effects of testosterone on the Prostate.

The former method is usually administered by injecting a small slow release pellet under the skin, either at monthly or three monthly intervals, whilst the latter method is normally taken daily in tablet form.

Unfortunately there may be side effects as a result of taking hormones, namely; loss of sex drive hot flushes and breast swelling (Gynaecomastia) however these usually disappear once treatment is stopped.

Hormones may be used as a sole method of controlling the growth of cancer cells or as in many cases they are used to initially shrink the tumour prior to other treatments, as we will now discuss.

Radiotherapy

Radiotherapy is broadly split into two types, both of which have one goal in mind, and that is to target the Cancer cells with high dose radiation in order to kill them. I should mention at this point that the radiation is not of the nuclear type but rather high energy X-Ray. The art is to administer sufficient dose to kill the cancer without killing too many normal cells. Cancer cells are actually weaker and therefore succumb more easily to the effects of Radiation.

External-beam radiotherapy

This method involves lying *very still* on a special table where a beam of high energy X-Rays are accurately targeted inside the body. Technology has moved on a great deal and the machines used are of the 'Conformal' radiation type allowing the beam to be actually shaped to almost any dimensions. I was fortunate enough to have this type (the most advanced in the world today) made available to me at Addenbrookes Hospital, where I had to attend 5 days a week for just over 6 weeks.



Brachytherapy

This method is relatively new and involves the insertion of small radioactive pellets inside the Prostate Gland. The radiation is thus released from inside, rather the outside as with External radiotherapy.

Brachytherapy has some advantages in that there is less chance of urinary problems and rectal damage than using the external method. Another major factor is cost. Normal external radiotherapy is very expensive since the highly technical machines used are hugely expensive; in the region of £1 Million each.

Chemotherapy

Doctors will usually only resort to this highly toxic treatment when they consider all other methods have failed and certainly only in cases of advanced cancer when the disease has **metastasised** (spread to other parts of the body such as the bones or lymph nodes)

Castration or Orchidectomy (removal of the testicles)

Enough said already about this method.

Cryosurgery

Cryosurgery is also referred to as cryotherapy or cryoablation. It is a technique that involves using freezing as a form of surgery. Cryosurgery of the prostate involves the freezing of the gland in order to destroy it. This is done by inserting probes into the prostate, which are then reduced to a very low temperature using liquid Helium and Nitrogen.

Prostate cryosurgery has been around since 1968 but it is only in the last few years that the techniques have become more refined.

Cryosurgery for prostate cancer is not a routine therapy but, as experience grows and more research is published, it may become so sometime in the future.

HIFU (High Frequency Ultrasound)

The idea of using ultrasound to destroy tissue has been around for decades but it is only relatively recently that this has been developed into a treatment for cancer. HIFU uses ultrasound energy to kill cancer cells in the prostate with minimal damage to the surrounding tissue. The treatment was approved for use in the NHS in March 2005 and is now available in several centres across the UK, including the UCLH under the guidance of Mr. Mark Emberton.

The results of HIFU have so far been promising but it is still early days and only a relatively small number of men have been treated using this technique. This means that, in comparison to other treatments, we know less about its long-term effects and effectiveness as a treatment for prostate cancer.

Photodynamic therapy

This means treatment using light. It has been tried for other types of cancer, mostly skin cancers or cancers of the head and neck. There has been some research using it for prostate cancers that have come back after radiotherapy. To have this treatment, you have to take a drug that makes your body cells very sensitive to light. Then a strong light is shone directly onto the cancer. The light activates the drug inside the cells and they are killed. This is not an easy treatment to have. You have to stay in dim light for days or weeks before and after you have the treatment. So far it has only been tried for a few patients with prostate cancer. But it did seem to help some of them. About half had a decrease in PSA levels, and about a third had no trace of cancer when they were tested later. These were small numbers though, and more research has to be done.

Vaccine therapy

Vaccines are a type of immunotherapy. It is still early days in prostate cancer vaccine research. Vaccines are available only in clinical trials as this type of treatment is still highly experimental.

Cancer vaccines are designed to try to stimulate the body's own immune system to fight cancer. There are different ways to make vaccines. Some can be used by anyone with prostate cancer, while others are made specifically for each patient. The personalized vaccines are made by taking cells called dendritic cells out of a patient's blood and mixing them with their own prostate cancer cells. The idea is that the dendritic cells in the vaccine will stimulate other cells in the immune system to recognise and attack the prostate cancer cells in the body.

Other types of prostate cancer vaccines in trial use viruses that have been modified in the laboratory to contain prostate specific antigen (PSA). When the virus injection is given, the

immune system reacts to the virus. It becomes sensitive to PSA and kills the prostate cancer cells that contain it.

Gene therapy

This is one of the newer approaches to cancer treatment and is in the very early stages of clinical trials. Cancer cells carry abnormal genes. If researchers can get copies of the normal genes inside the cells to replace the abnormal genes, they may be able to use this to treat the cancer.

One gene that is often abnormal in cancer cells is the P53 gene. This gene usually tells cells that are old and damaged to self destruct. Scientists call this self destruction 'apoptosis'. Some cancer cells don't self destruct because they have an abnormal p53 gene. This is one reason why they can go on reproducing even with damaged genes.

IMPORTANT

If you are unfortunate enough to be diagnosed with Prostate Cancer, it is most important to follow these rules.

- ❖ Take the time to discuss ALL options with a professional, whilst relaxed and capable of taking in what you are told. It may be useful to take a member of the family or friend to take notes, or ask permission to record the meeting for future reference.
- ❖ Discuss the side effects (short and long term) and effectiveness of each method of treatment.
- ❖ Remember that Surgeons usually want to operate, whilst Oncologists may want to guide you into Radiotherapy or Chemical options.
- ❖ If necessary, ask for a second or even third opinion, after all, many of the options available are NOT reversible.
- ❖ Take your time, and get it right.

Other unconventional methods

In chapter 6 I have touched on the subject of Vitamins and Nutrients, a very interesting subject in itself, however I am no expert in this subject, so I would therefore recommend that you do your own research or seek professional advice, since incorrect use of any non prescribed drug can sometimes do more harm than good.

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