

RADICAL PROSTATECTOMY

Background

Radical prostatectomy is the most common surgical treatment for prostate cancer, and one of the most common treatments for prostate cancer in the US. This procedure is typically carried out when the cancer has not spread beyond the prostate, Stage 1 and 2 (1). The aim of a Radical Prostatectomy is to remove the entire prostate gland and the cancer cells inside the prostate before it spreads (1). The idea is that by removing the prostate gland and the cancer whole you prevent the cancer from metastasizing, therefore prolonging life expectancy (2). This surgery was first introduced in 1982; it was originally touted as better option as it was meant to help men with prostate cancer the possibility to preserve sexual function (3). This was because the surgery does not affect the nerves that run alongside the prostate, which are responsible for erections (4). However various long term studies have indicated significant sexual side effects and dysfunction as a result of this surgery.

There are two different surgical approaches to radical prostatectomy. The more common approach is known as open radical prostatectomy, this involves a single large cut to the belly (See figure 1). There is also a more modern approach that involves a smaller incision; this is possible due to recent advances in robotics and surgical technologies the more recent approach is known as laparoscopic radical prostatectomy (5). This involves the surgeon making smaller cuts to the belly (See figure 2). The surgeon inserts a tube with a camera inside one of the cuts, allowing the surgeon to see inside during the procedure (5).

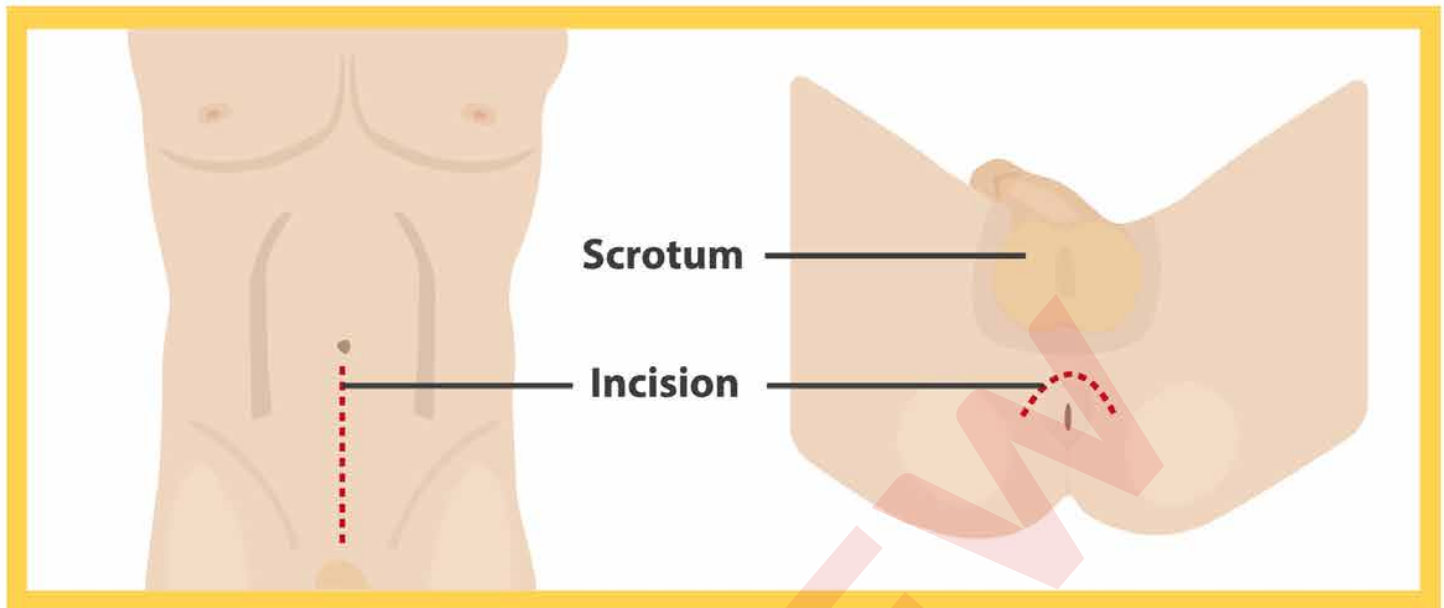
There is another surgical approach known as a perineal incision that allows for the lymph nodes to be examined during surgery. This approach is vastly less common in the US than the main two approaches, (see figure 1).

Studies have shown little difference between the two approaches (6), with potentially 3 small differences. On average the laparoscopic approach does result in a 1 day shorter hospital stay on average than the open procedure, additionally the laparoscopic prostatectomy results in less blood loss (7). The only outcome difference was noted in a comprehensive comparative study on the two procedures, that showed that, men who had the laparoscopic procedure suffered a higher rate of urinary incontinence, 52% of men who had the laparoscopic procedure reported incontinence and urinary leakage at 23 months, compared to only 25% of men who had the open procedure (7).

A Radical prostatectomy has no unique surgical risks, it does however carry the same risk of complications that all invasive surgeries have. This includes bleeding, heart attacks, strokes, infections and death (8).

According to the latest CDC statistics, (2010) there are approximately 140,000 radical prostatectomy carried out in the US each year*. Unfortunately it is not possible to find the number of surgical complications broken down by treatment.

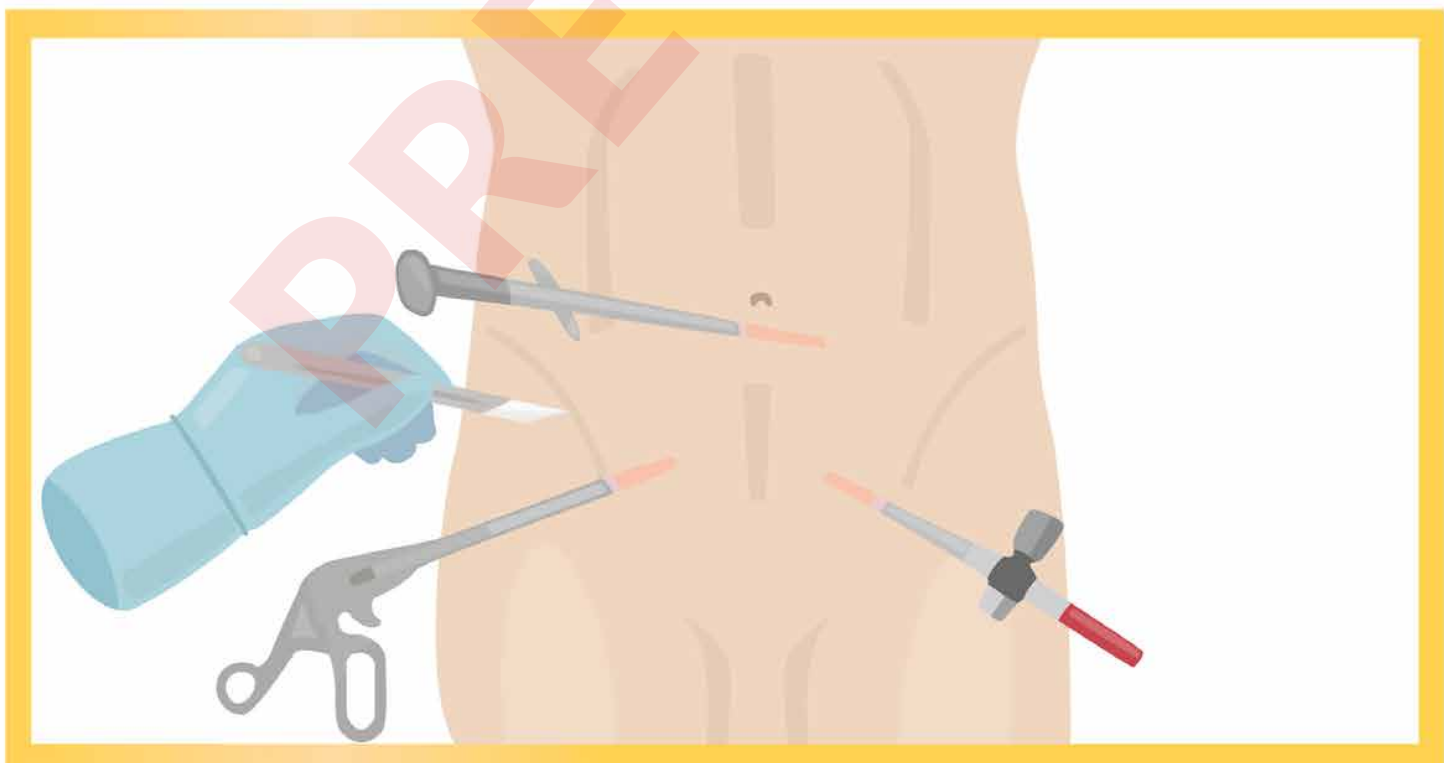
FIGURE 10: RADICAL PROSTATECTOMY



Retropubic Prostatectomy

Perineal Prostatectomy

FIGURE 11: LAPAROSCOPIC PROSTATECTOMY



QUALITY OF LIFE OUTCOMES (2/5/10 YEARS)

Quality of life outcomes after 2 years

There are a number of studies that have looked at the quality of life outcomes of patients who underwent this treatment. One study compared the health outcomes of radical prostatectomy in comparison to external beam radiotherapy, two years after initial treatment (9). Although men in each treatment group suffered declines in sexual function, this was much more prevalent decline in radical prostatectomy patients. 82.1% of men who had a radical prostatectomy reported being impotent, compared to 50.3% of men who had undergone external beam radiotherapy. Radical prostatectomy patients also found it more difficult to control urination (urinary incontinence), compared to men who opted for other treatments. 13.8% of Radical Prostatectomy patients reported leaking urine at least twice a day with 28.1% reported that they had to wear pads to stay dry. However, external beam radiotherapy had a greater negative impact on bowel function (9). A second study supported the findings of the previous study (10), that radical prostatectomy increased chance of urinary incontinence. The study also found that men who had undergone radical prostatectomy were also more likely to have erectile dysfunction and difficulty controlling their bowels and greater bowel urgency in general (10).

Quality of life outcomes after 5 years

Another study examined the effects of radical prostatectomy and other treatment options on quality of life outcomes, five years after opting for a treatment (11). The study found that sexual dysfunction equally increased in all groups. However, impotence was more prevalent in men that had undertaken radical prostatectomy, with 79.6% of patients who underwent radical prostatectomy, less than a 3% improvement from the group examined at 2 years. All treatments lead to an increase in urinary incontinence, although radical prostatectomy patients were again more likely to suffer from this side effect. This study did note, however, that external beam radiotherapy patients were more likely to suffer from painful haemorrhoids and greater bowel urgency at 5 years than the patients that underwent a radical prostatectomy (11). Another study also found that 15.4% of men who had undergone radical prostatectomy suffered from urinary incontinence, this is an increase of 1.6% after two years. Over 70% of men in both treatment groups suffered from erectile dysfunction, the prevalence was still slightly higher in radical prostatectomy patients, This means that compared to the outcomes at 2 years, only 10% of men had seen a significant improvement in the sexual dysfunction side effects that they had suffered as a result of having a radical prostatectomy. Another study compared the outcomes of radical prostatectomy in comparison to active surveillance. It reported that 80% of radical prostatectomy patients were more likely to have erectile dysfunction, compared to only 45% of active surveillance patients. Also 49% of radical prostatectomy patients reported urinary leakage, compared to only 21% of active surveillance men. This is a massive increase from the 13.8% of men who reported urinary leakage at 2 years. However, the study did note that the patients who underwent active surveillance were more likely to suffer from urinary obstruction than men who opted for the surgery (12).

Quality of life outcomes after 10 years

A study by Hamdy et al. (13) compared the outcomes of active monitoring, radical prostatectomy, and external-beam radiotherapy for the treatment of clinically localized prostate cancer, 10 years after initially treatment. The study looked specifically at prostate-cancer mortality, disease progression, and all-cause deaths. Disease progression was defined as the development of the spread of cancer beyond the prostate, diagnosis of clinical T3 or T4 disease, long-term androgen-deprivation therapy, ureteric obstruction, rectal fistula, or the need for a urinary catheter due to local tumour growth. Disease progression was more prevalent in patients that had undertaken active surveillance, in comparison to radical prostatectomy and external-beam radiotherapy.

QUALITY OF LIFE OUTCOMES (2/5/10 YEARS)

However, this study did not report the effects of various treatments on quality of life. Another study also compared the health outcomes of radical prostatectomy to active surveillance. The study showed that after 10 years, radical prostatectomy reduced the likelihood of deaths related to prostate cancer, overall death, and the risks of cancer spreading beyond the prostate, in comparison to active surveillance (14). However, the reduced prevalence of death related to prostate cancer from radical prostatectomy was limited to men under the age of 65. Like the study previously mentioned, this study did not compare how the treatments impacted quality of life. One study looked at the effects of laparoscopic radical prostatectomy on quality of life. The study found that after 10 years, laparoscopic radical prostatectomy patients had substantially lower sexual activity and greater levels of anxiety than men who had opted for active surveillance (15).

Although no study looked in detail at the quality of life related effects of radical prostatectomy at 10 years, one study did compare the effects radical prostatectomy to external beam radiotherapy, 15 years of initial treatment (10). Prevalence of urinary incontinence, erectile dysfunction and bowel function reportedly increased, although not significantly from the 5 years studies. This study shows that side effects would not have improved over a 10 or even 15 year period and at best would of stabilized (10), more research is certainly needed here.

NO SPARING RADICAL PROSTATECTOMY (They Do Not Spare The Nerves)



Conclusions

Research has demonstrated that radical prostatectomy has a significant long term negative impact on the quality of life of a high percentage of patients. Additionally number of men experiencing severe side effects was much more prevalent in patients who had opted for radical prostatectomy instead of other treatments; it was substantially higher than men who had opted for active surveillance. Two years after initial treatment, most men who underwent radical prostatectomy suffered from impotence. Other side effects related to treatment include urinary incontinence and greater bowel urgency. Five years after treatment there were no improvements in the side effects related to treatment. With regards to the impact of treatment after 10 years, research suggests that radical prostatectomy reduces the likelihood of disease progression such as cancer spreading beyond the prostate, when compared to active surveillance. However, it is important to note that it has been shown that radical prostatectomy reduces the likelihood of death or extends life for older patients. Furthermore, after a 15 year period the side effects of radical prostatectomy persisted without improvement..