Prostate case study

Presented by
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Part one - Initial presentation

A 62 year old male solicitor attends your GP surgery. He has rarely seen you over the last 10 years. He complains of increasing urinary frequency, nocturia and slow urinary flow. He raises the issue of occasional erectile problems. He is on statins but otherwise is well.

Please join your groups to discuss

Groups 1&2 - stay here (Julian Bloom Lecture Theatre)
Groups 3&4 - Blackstone room (opposite Julian Bloom entrance)
Groups 5&6 - Refreshments area, ground floor
Q1. Would you be concerned by these symptoms?

1. Yes

2. No
Q2. What are you thinking?

1. I need more information
2. I need to examine him and do some tests
3. This sounds serious
4. You are just getting old!
Part one - Initial presentation

A 62 year old male solicitor attends your GP surgery. He has rarely seen you over the last 10 years. He complains of increasing urinary frequency, nocturia and slow urinary flow. He raises the issue of occasional erectile problems. He is on statins but otherwise is well.
Q1. What additional information would you seek to elicit in your history of this patient?

- Age and racial origin
- Duration of symptoms
- Severity of symptoms
- Impact/troublesome nature
- Lifestyle – fluid intake
- Drugs – sympathomimetic and anticholinergic esp
- PMH
- Weight loss, bone pain, neurological symptoms
- Family history of prostate cancer
Q2. What examinations, if any, would you perform?

- Full examination
- Blood pressure
- Rectal examination
- Alpha blocker
- PSA
- IPSS, Flow and scan
- Refer to Urologist
The patient was given advice about fluid management and prescribed an alpha blocker. Erectile dysfunction was not discussed and the patient was not examined. A urine dip, PSA and U&E’s were sent off.

One month later, the patient returned for review. His urinary symptoms had improved, but he now had worsening erectile dysfunction. The U&E’s were normal and the PSA was 6.4.
Q 3. What is your differential diagnosis?

1. Benign Prostatic Hyperplasia
2. New onset diabetes
3. Urinary tract infection
4. Prostate cancer
5. Others
   - Bladder pathology (cancer/stones)
   - Drugs (inc. natural/homeopathy)
   - Neuropathic
   - Habitual/lifestyle
Q 4. What would you do next?

- Stop alpha blockers – due to ED
- Rectal examination
- Repeat PSA – with advice
- Refer to Urologist
- Refer on two week rule
Part two - Return to GP surgery

The GP performed a rectal examination. The prostate was asymmetrical but was still quite soft. The patient continued on an alpha blocker (which was the patient’s choice) and the PSA test was repeated.
Q1. What is a normal PSA?

- No normal PSA cut-off value – clinically defined as being lower than an absolute figure
- PSA <4 ng/ml (defined by ROC analysis)
- Positive biopsies in 25% (Prostate cancer prevention trial)
- Age related
  - 40-50yrs 2.5ng/ml
  - 50-60yrs 3.5ng/ml
  - 60-70yrs 4.5ng/ml
  - 70-80yrs 6.5ng/ml
The PSA on repeat was 6.3. The patient’s symptoms were stable. The patient was referred under the 2 week wait rule.

The patient is concerned and questions the chances of him having cancer. He asks what might happen in the Urology clinic.
Q2. What are the chances of him having prostate cancer?

- If the PSA is between 4 and 10 the chance of finding prostate cancer on a transrectal ultrasound guided biopsy (TRUS) is 26%.

- If the PSA is greater than 10 the chance of finding prostate cancer on a TRUS and biopsy is 53%.

- If the PSA is greater than 20 the chance of finding prostate cancer on a TRUS and biopsy is 87%.
Q3. What are the risks for the patient if he needed a TRUS biopsy?

- Severe bleeding (1% risk)
- Severe infection (1% risk)
- Urinary retention
- Haematospermia (may last weeks)
A full urological history and examination was performed at the urology clinic.
Urology clinic visit

We are increasingly performing MRI scans prior to TRUS biopsy - allows targeting of areas of likely tumour in the prostate and helps early staging.
Information we look for in the histology specimen

- Gleason grades (score) of each core
- Total number of cores involved
- Length/percentage of each core involved
- Other information - acute inflammation, fat involvement (pT3)
## Risk stratification for prostate cancer

<table>
<thead>
<tr>
<th>PSA ng/ml</th>
<th>Gleason Grade</th>
<th>Stage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low risk</td>
<td>10-20 or &gt;20</td>
<td>T1-T2a</td>
</tr>
<tr>
<td>Intermediate risk</td>
<td>&lt;10 and &lt; or = 6</td>
<td>or</td>
</tr>
<tr>
<td>High risk</td>
<td>or 7 or 8-10</td>
<td>or</td>
</tr>
</tbody>
</table>

- Low risk: PSA <10 and Gleason Grade < or = 6 and Stage T1-T2a
- Intermediate risk: PSA 10-20 or Gleason Grade 7 or Stage T2b-T2c
- High risk: PSA >20 or Gleason Grade 8-10 or Stage T3-T4
The patient was diagnosed with adenocarcinoma of the prostate.

- Gleason score $3 + 3 = 6$.
- $2/12$ cores involved
- $1$ core $10\%$ (2mm), $1$ core $25\%$ (4mm) involvement
- $1$ core acute inflammation
Q1. What are his treatment options?

- Active surveillance
- Radiotherapy - external beam
- Radiotherapy - brachytherapy (poor candidate in this case due to LUTS)
- Surgery
- HIFU - High Intensity Focused Ultrasound
- Others - Cryotherapy, Photodynamic therapy
Q2. Is there a rationale for active surveillance?

- There is doubt that some men with prostate cancer benefit from radical treatment
- Treatment has adverse effects, and should be given only to those who stand to benefit
- Most men with screen-detected prostate cancer probably do not need treatment
- Delayed radical treatment appears to be as effective as immediate treatment
Is there a rationale for active surveillance?

- Histological prostate cancer is very common at autopsy; only a small portion is clinically significant

<table>
<thead>
<tr>
<th>Age</th>
<th>Prevalence of CaP</th>
<th>Prevalence of CaP &gt;0.5 ml</th>
</tr>
</thead>
<tbody>
<tr>
<td>50-59</td>
<td>15%</td>
<td>6%</td>
</tr>
<tr>
<td>60-69</td>
<td>22%</td>
<td>9%</td>
</tr>
<tr>
<td>70-79</td>
<td>39%</td>
<td>16%</td>
</tr>
<tr>
<td>80-89</td>
<td>43%</td>
<td>17%</td>
</tr>
</tbody>
</table>

Autopsy studies reveal CaP in - 30% of men aged 20 to 40 years 50% of men aged 50 years 80% of men aged over 85 years

(Sakr et al., 1994)
What does active surveillance mean and what does it involve?

- Management option for men with potentially curable disease
- Must be suitable for radical treatment
- Aim is to avoid treating men with indolent cancers
- May avoid radical intervention in up to 70% patients
- Frequent PSA
- Frequent re-imaging
- Frequent re-biopsy
What does active surveillance mean and what does it involve?

The Royal Marsden criteria:

• Age 50-80 years
• Fitness for radical treatment
• PSA <15ng/ml
• Stage T1-2
• Gleason score 3+3 ideally/ occ 3+4
• < 50% positive cores and/or < 50% of each core
Important learning point

• Watchful waiting (for the elderly and those in whom radical treatment is inappropriate) involves infrequent follow up

• Hormonal treatment is instituted for symptomatic disease

• Active surveillance involves close monitoring with serial PSA measurements and repeat biopsies

• The intent is delayed radical treatment for those who show signs of progression (PSA or biopsy)
Q3. What are the possible side effects of a prostatectomy?

**Urinary effects**
- Incontinence - commonly stress incontinence
- Poor urinary stream / urinary retention

**Sexual effects**
- Erectile dysfunction: sudden onset gradually improving
- Ejaculatory problems
- Climacturia - pass urine on climax
- Penile shortening - non use atrophy
- Low sexual desire

**Bowel effects**
- Proctitis
- Rectal bleeding
Q4. What are the possible side effects of radiotherapy?

**Urinary effects**
- Urinary frequency, urgency, urge incontinence, nocturia
- Dysuria
- Poor urinary stream
- Haematuria

**Sexual effects**
- Erectile dysfunction: gradual onset symptoms worsening
- Ejaculatory problems
- Climacturia - pass urine on climax
- Penile shortening - non use atrophy
- Low sexual desire

**Bowel effects**
- Proctitis
- Rectal bleeding
Other effects of treatment - androgen manipulation

- Hot flushes
- Gynaecomastia (swelling and tenderness in the breast area)
- Fatigue
- Weight gain
- Strength and muscle loss
- Mood changes
- Irritability
- Depression
- Memory and concentration changes
- Increase risk of heart disease
- Increase risk of osteoporosis
The patient chose active surveillance after having consultations with both surgeons and clinical oncologists.

His main priority was erectile function.
The patient’s father also had prostate cancer. He is worried about the risk of prostate cancer in other family members including his teenage son.
Q5. Is his son likely to get prostate cancer and should he be examined?

*Although he is not classified as “early-onset”, his son may be at increased risk.*

- 30 - 40% of early-onset cases (<55 years old) & 5 - 10% of all prostate cancers caused by inheritable genes
- Risk of cancer increases 2-3x for men with a first degree relative diagnosed with cancer
- Risk of cancer 4x if relative <60 years or more than one relative
Any questions?
Would you use a urology referral advice email address, staffed by our consultants?

1. Yes
2. No
3. Maybe
4. Don’t know
Thank you