Semmelweis University
Department of Urology

PROSTATE CANCER

Peter Nyirády

Department of Urology
Urooncological Center
Semmelweis University
Budapest

European Board of Urology
Certified Department

Epidemiology

- In Hungary 4500 men get ill and 1400 patients die in prostate cancer annually.

- In every 3 minutes a man dies in prostate cancer in the world.

Geographical distribution of prostate cancer

Etiology

- **Genetic factors**
  - **ethnical differences**
  - **familiar aggregation**
- **Hormonal factors**
- **Environmental factors**

TNM classification of prostate cancer

- **T1 clinically not demonstrable tumor**
  - T1a incidental carcinoma in ≤ 5% of the resected prostate tissue
  - T1b incidentalis carcinoma in > 5% of the resected prostate tissue
  - T1c with needle biopsy verificated prostate cancer
- **T2 localized prostate cancer**
  - T2a prostate cancer localized in one lobe of the prostate
  - T2b tumor infiltrated both lobes of the prostate
- **T3 locally advanced prostate cancer**
  - T3a tumor propagated through the capsule of the prostate
  - T3b seminal vesicles infiltrated
- **T4 the prostate cancer fixed or advanced the adjacent tissues**

TNM classification of prostate cancer

Nx - lymph nodes status cannot be adjudicated

NO - no regional lymph node metastasis

N1 - detectable lymph node metastasis

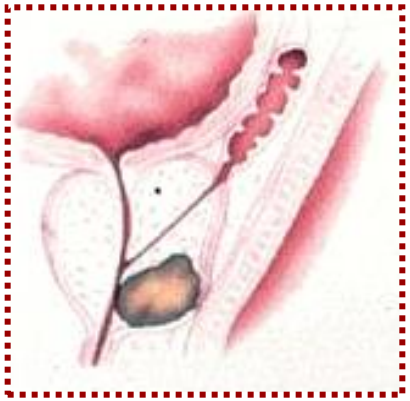
Mx - distant metastasis cannot be adjudicated

MO - no distant metastasis

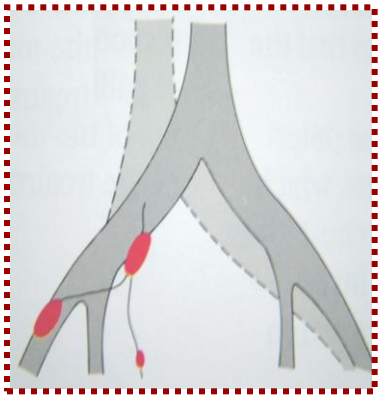
M1 - detectable distant metastasis

TNM classification

T1



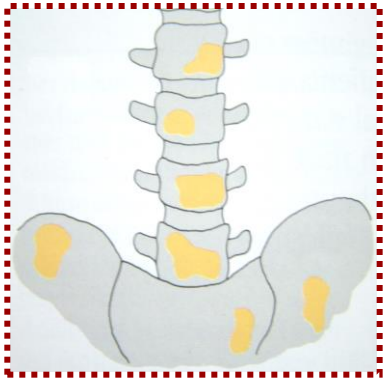
T2



Nx-1

T3

T4



Mx-1

Grading
(histological differenciation)

	Gleason
Well differenciated	1 - 3
Medium differenciated	4 - 7
Not differenciated	8 - 10

The histological differenciation of different particulars of the tumour is characterized by 5 patterns. (1-5)

Gleason-score ☞ summation of the two frequent pattern numbers

Symptoms

- **Localized (T1 - T2)**
  prostate cancer → usually no symptoms

- **Locally advanced (T3 - T4)**
  prostate cancer symptoms
  → pollakisuria
  → dysuria
  → stranguria
  → haematuria
  → partial or total retention
  → pyuria
  → haematosperm

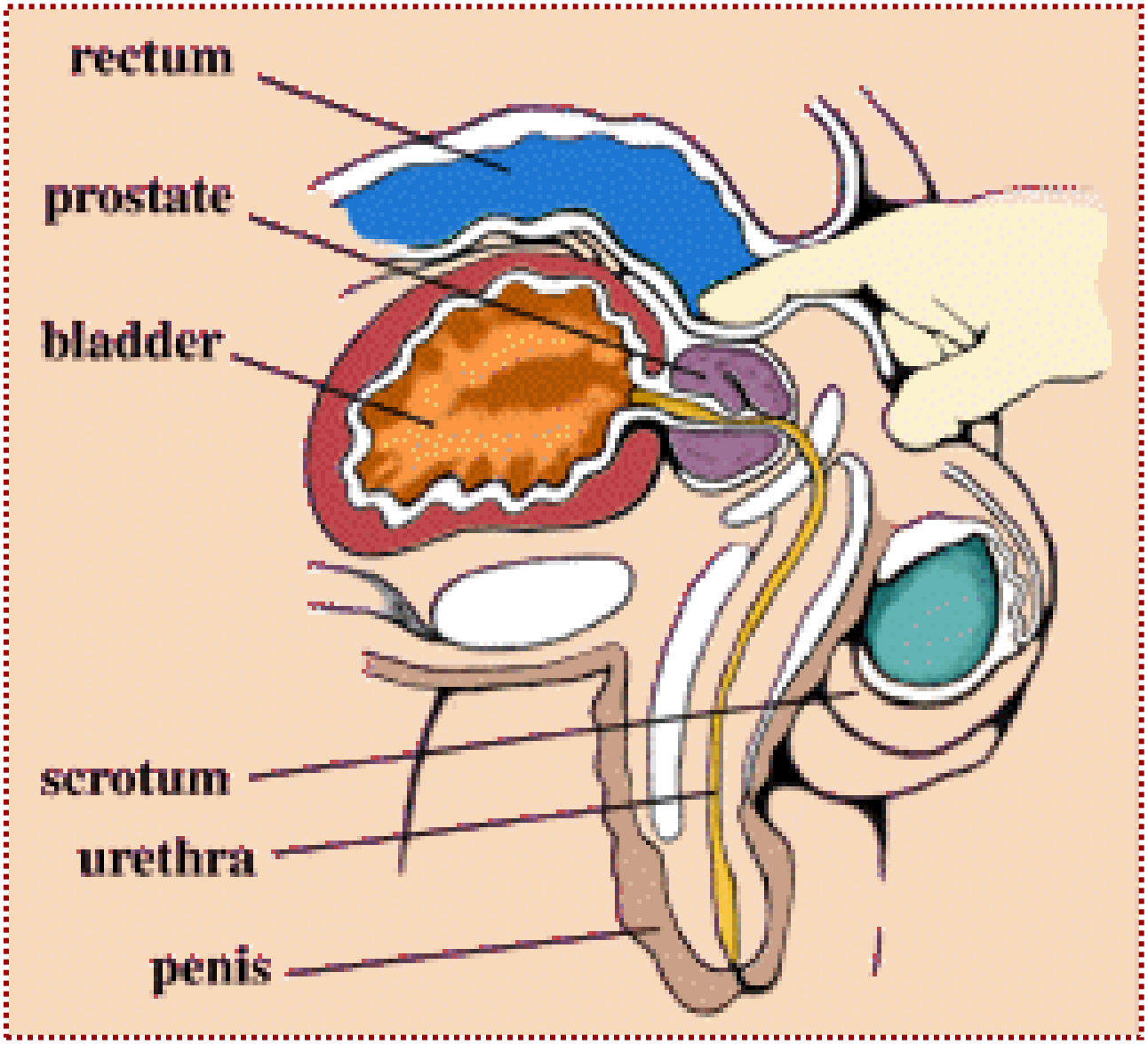
Symptoms of prostate cancer with metastasis

- **Pain in the bones (it can be the first symptom)**
  - **lumbal pain**
  - **sacral pain**
  - **pain in the legs**
- **T4 tumors with pelvical lymp node metastasis may cause obstruction of the ureters (pyelectasia, hydronephrosis, renal insuff.)**
- **M1 symtoms of lung, liver or brain metastasis**

Diagnosis

- RDE (stony hard palpation of the prostate)
- tumour marker
  - PSA
- transrectal ultrasound
- biopsy
  - perineal biopsy
  - Ultrasound guided transrectal biopsy (5-6 biopsies from both lobes of the prostate)

Rectal digital examination



- total PSA
- free PSA
- free/total PSA ratio
- age-specific PSA
- PSA velocity
- PSA density

Indication of the biopsy

PSA	RDE
< 4	+
4 - 10	+, (-)
>10	every case

PCA 3

- **determination/urinalysis after prostate massage**

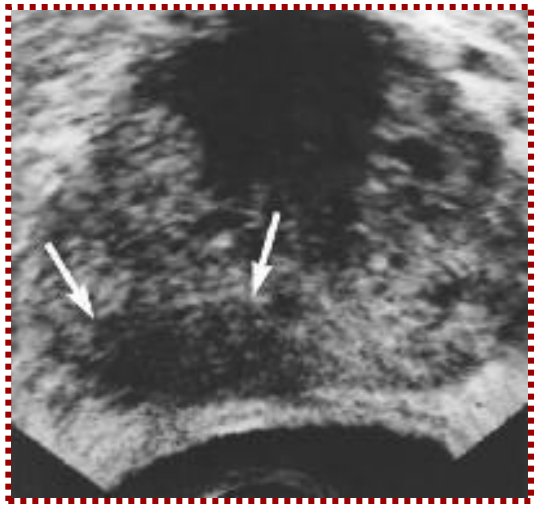
- **its rate does not depend on inflammation or volume of prostate**

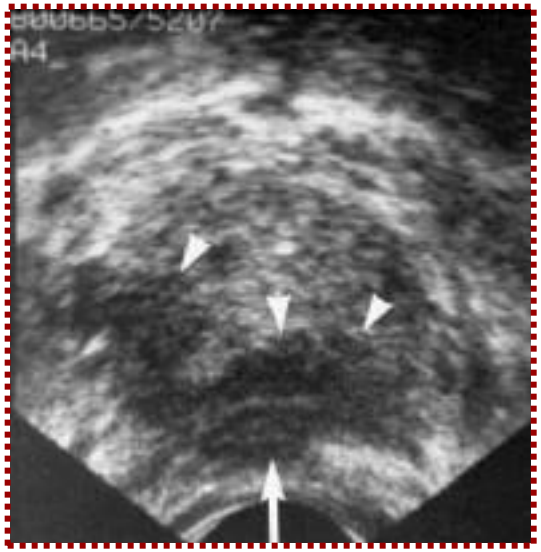
Screening of prostate cancer

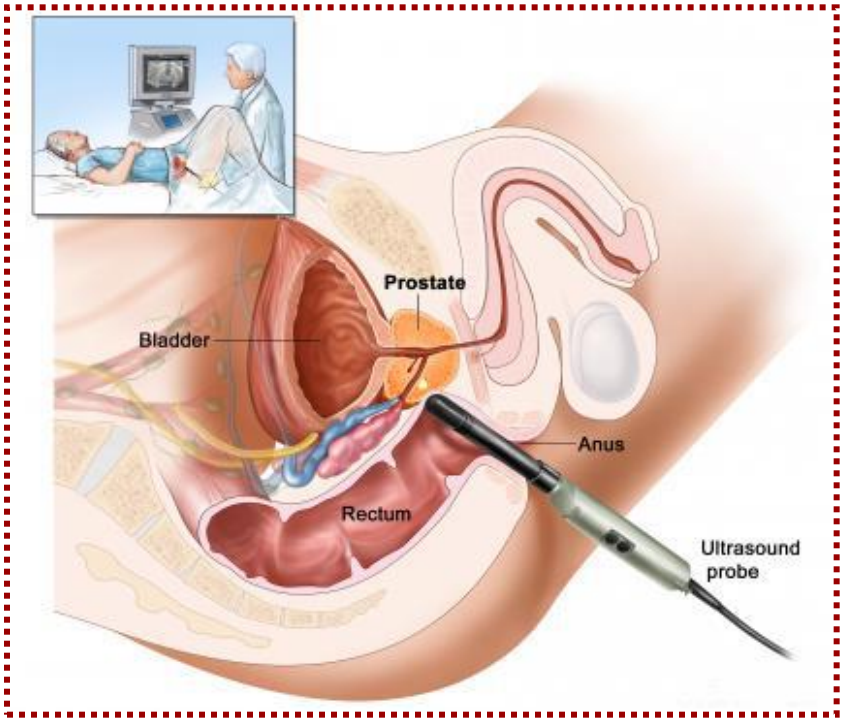
- Over the age of 50 RDE and PSA examination annually
- In case of tumour suspicion transrectal utrasound (TRUS)

- RDE mean sensitivity 40 - 55%
  (depends on the doctor's routine)
- PSA
  - specificity 89.6%
  - sensitivity 80.7%
- TRUS
  - sensitivity 60 - 91%

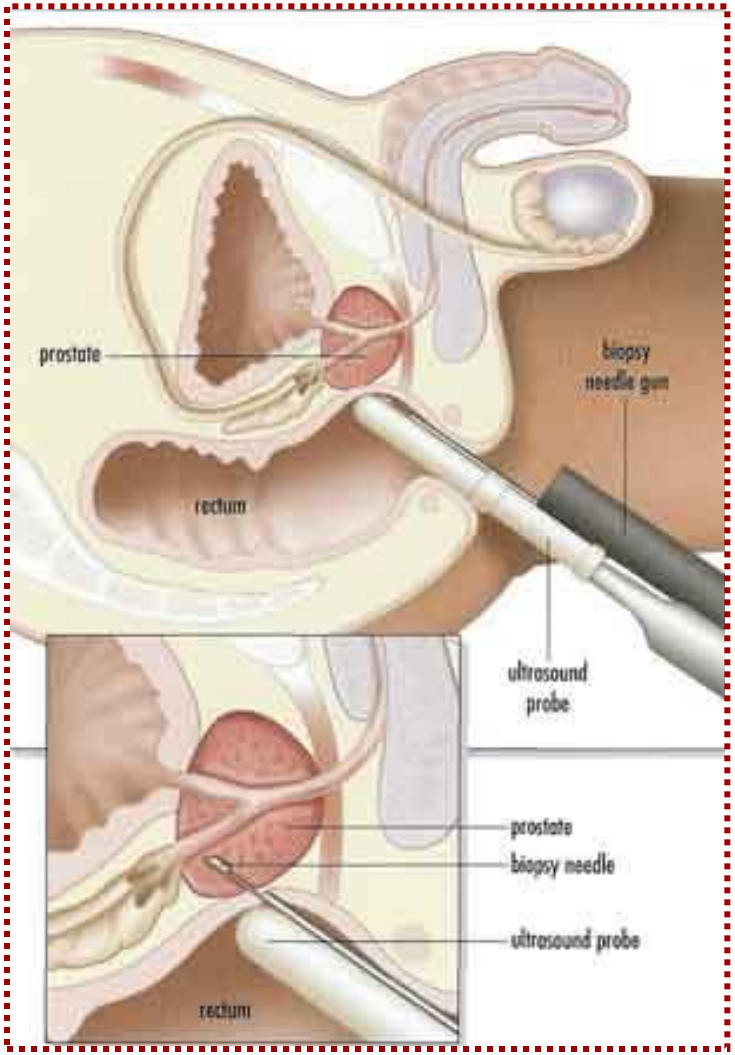
Transrectal ultrasound in prostate cancer

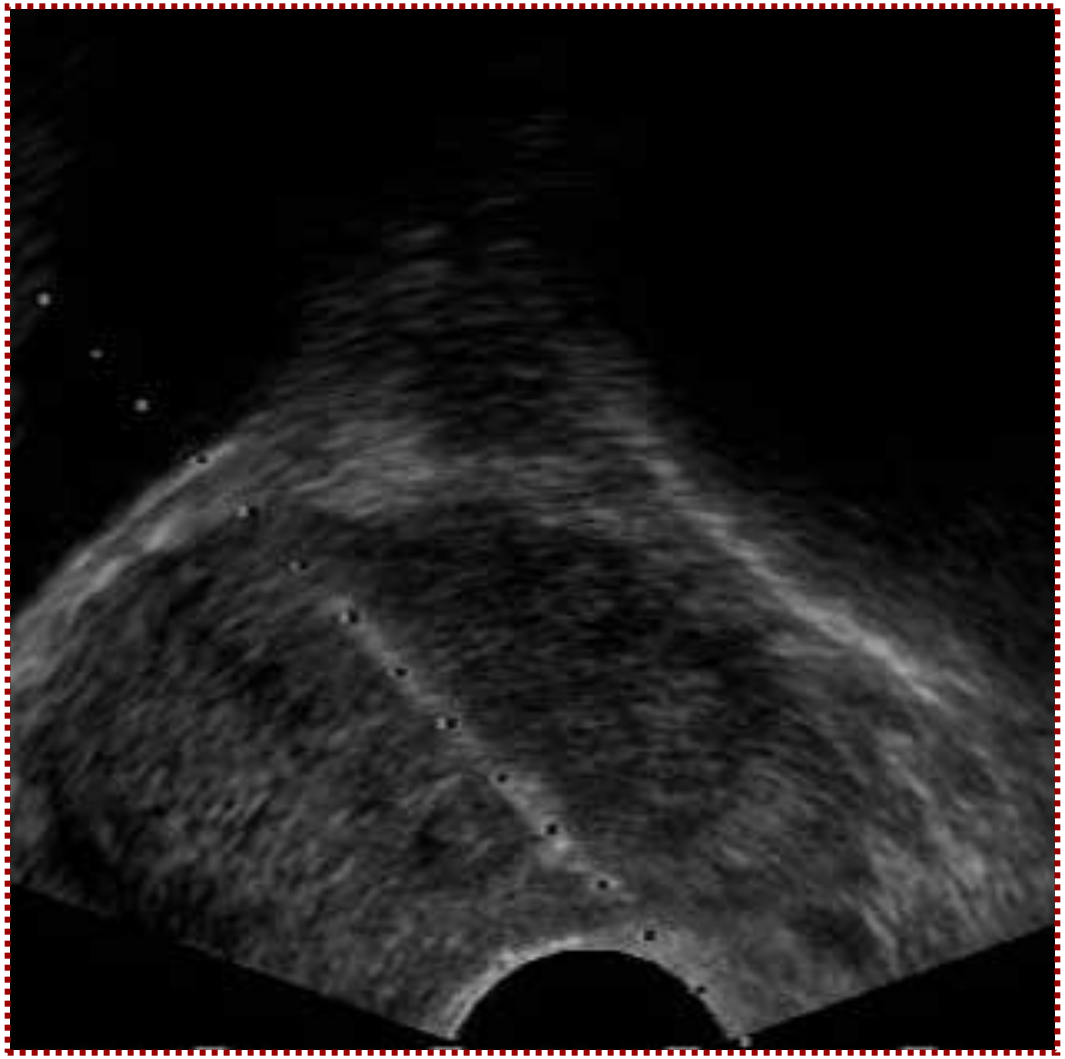




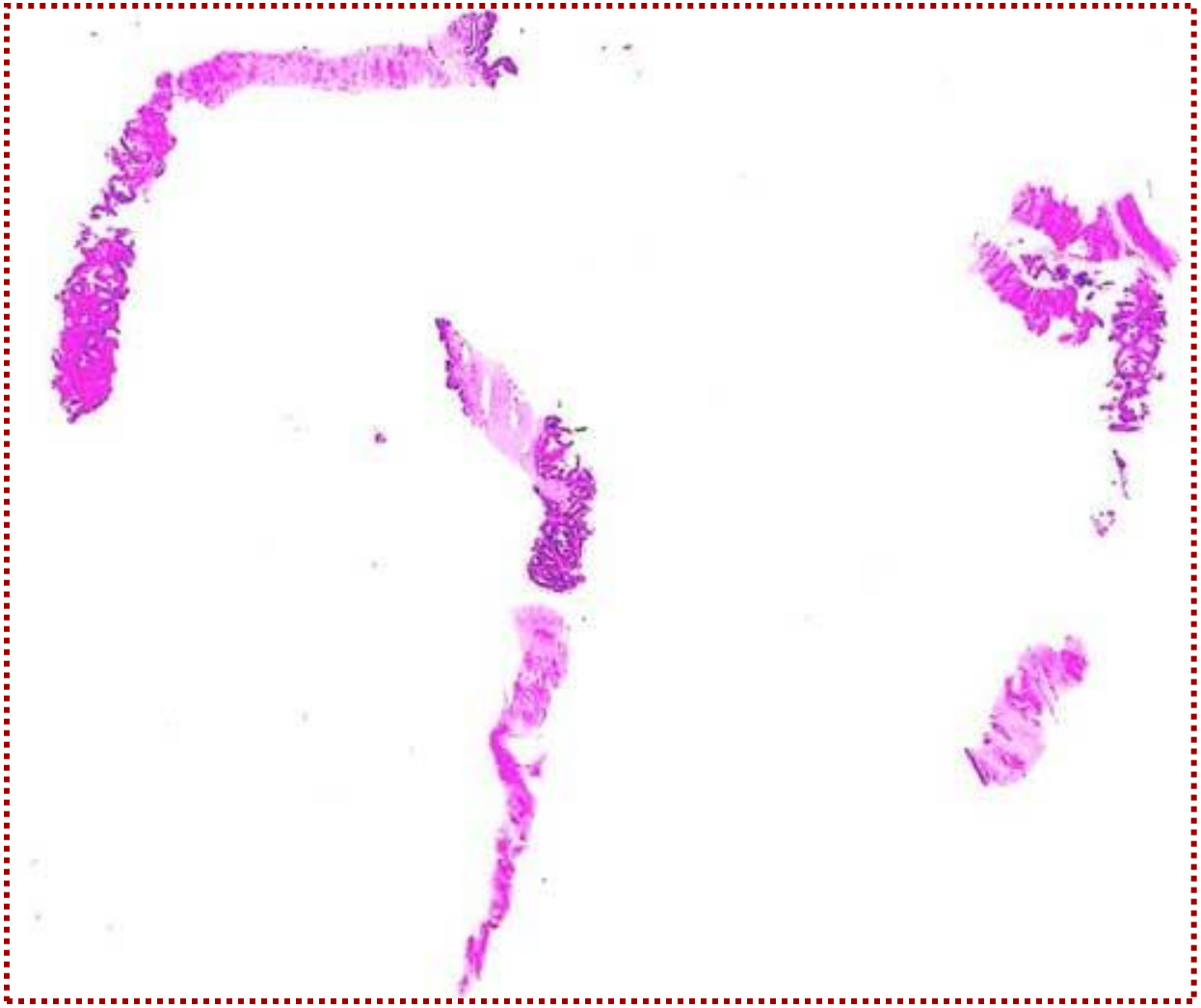


US-guided transrectal prostate biopsy





Biopsy

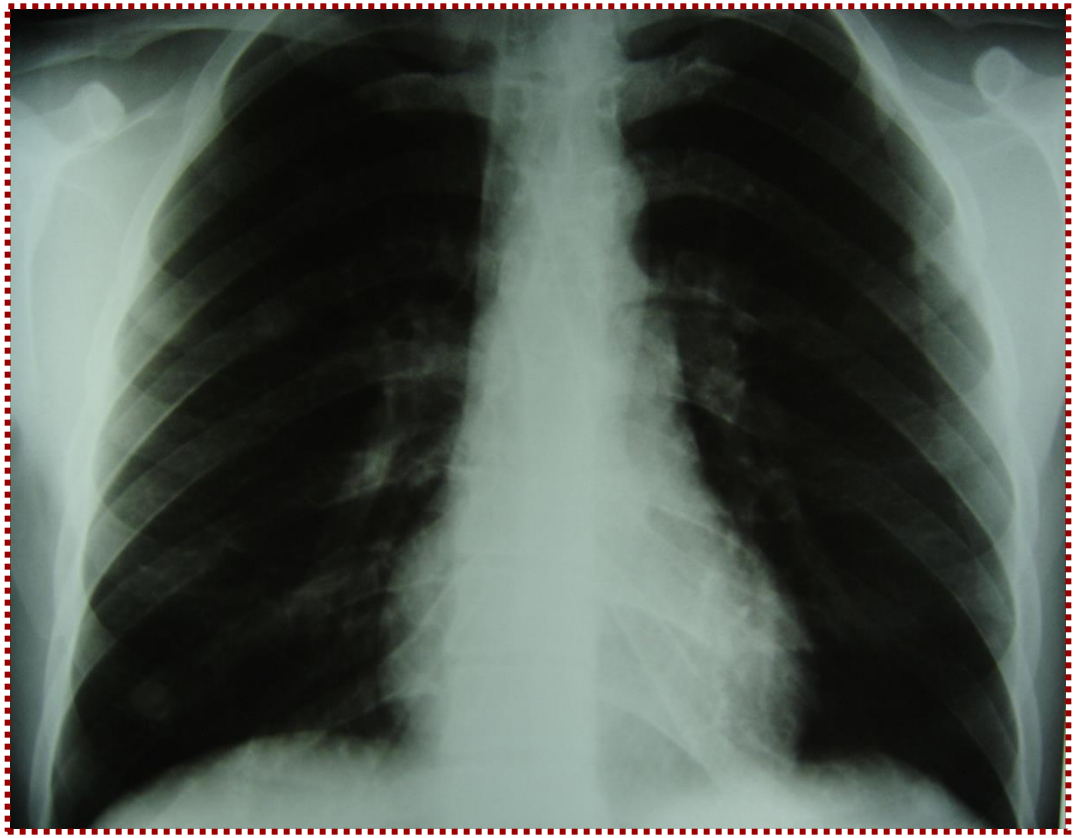


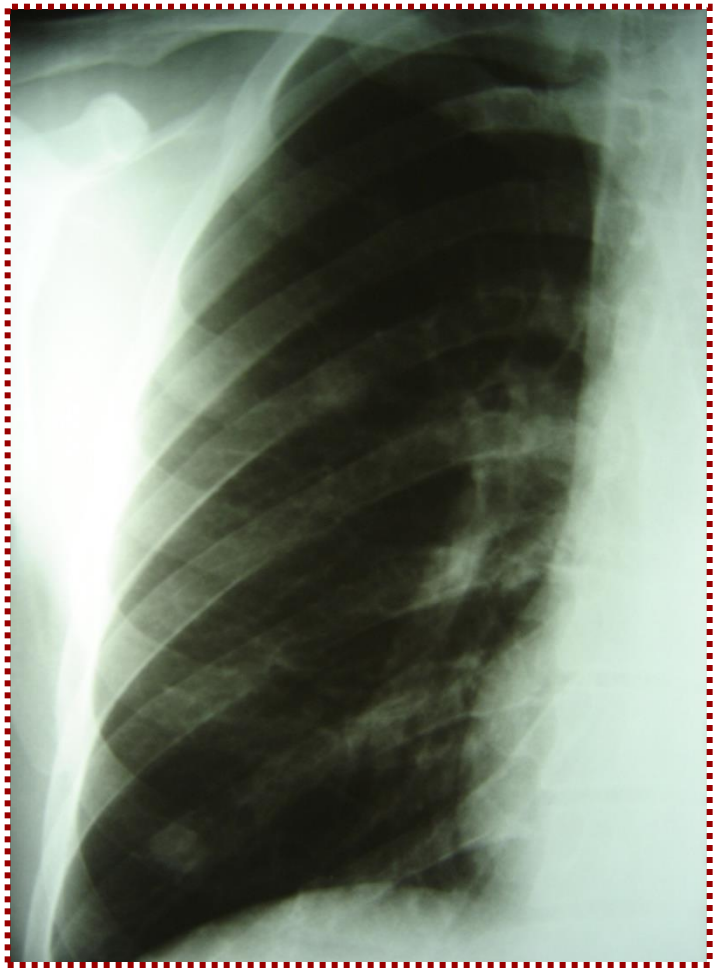
Side-effects of biopsy

- **Urethrorhagia**
- **Haematuria**
- **Infection**
  (antibiotic profilaxis)

Screening of distant metastasis

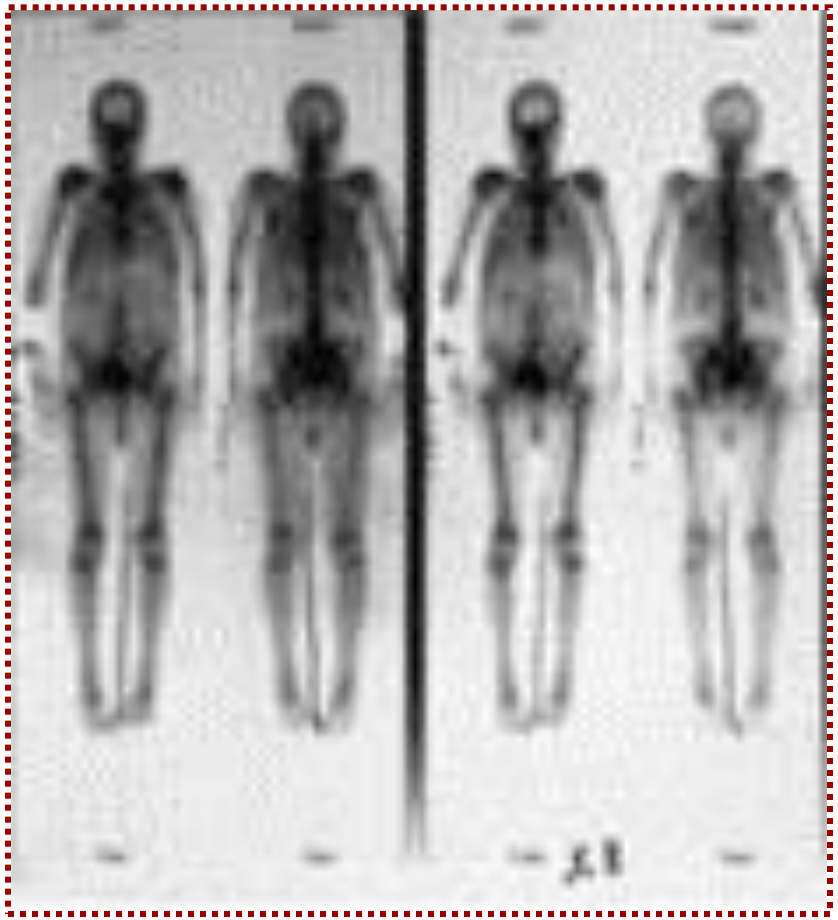
Chest X-ray or CT ☞ **to examine pulmonar metastatis**

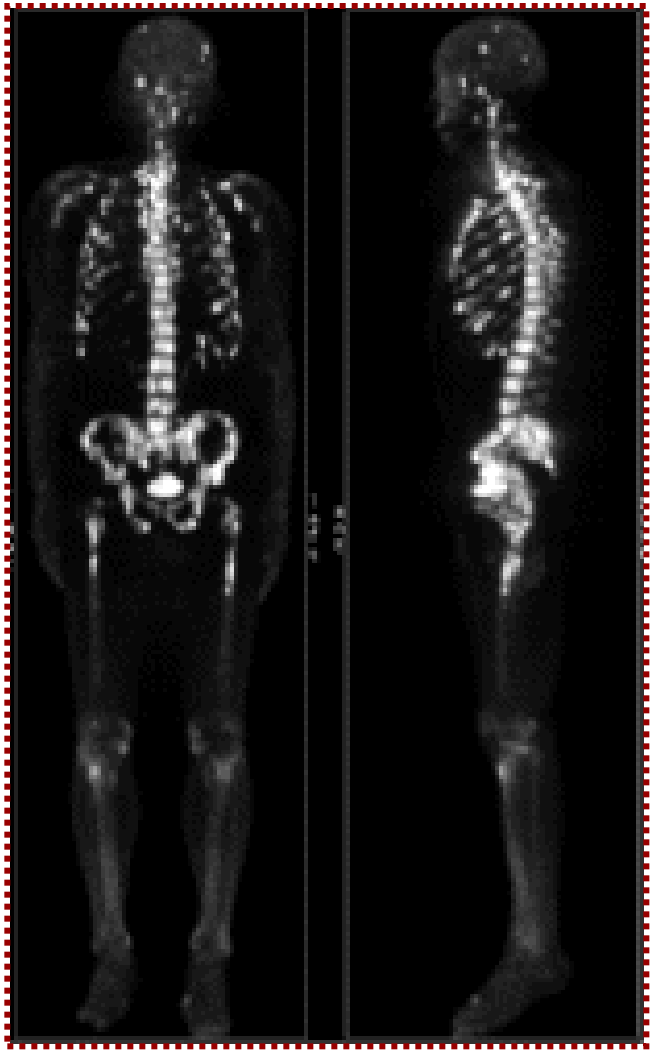




Screening of distant metastasis

Bone scan ☞ to examine bone metastasis

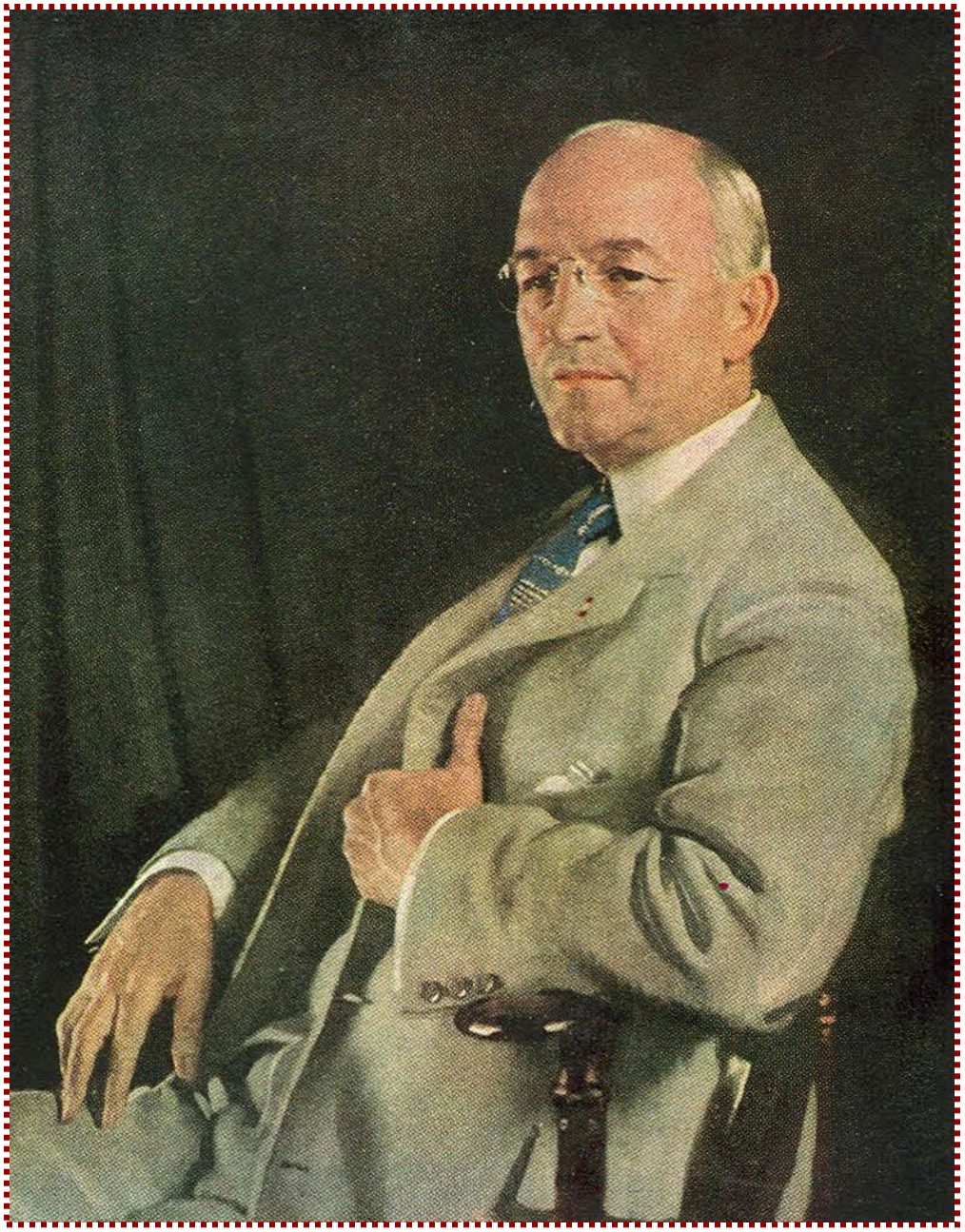




Therapy of T1-T2 tumours

- **Radical prostatectomy**
  - **Perineal radical prostatectomy**
  - **Retropubic radical prostatectomy**
  - **Laparoscopic radical prostatectomy**

- **Extracted tissues**
  - **Pelvical lymph nodes**
  - **Prostate**
  - **Seminal vesicles**



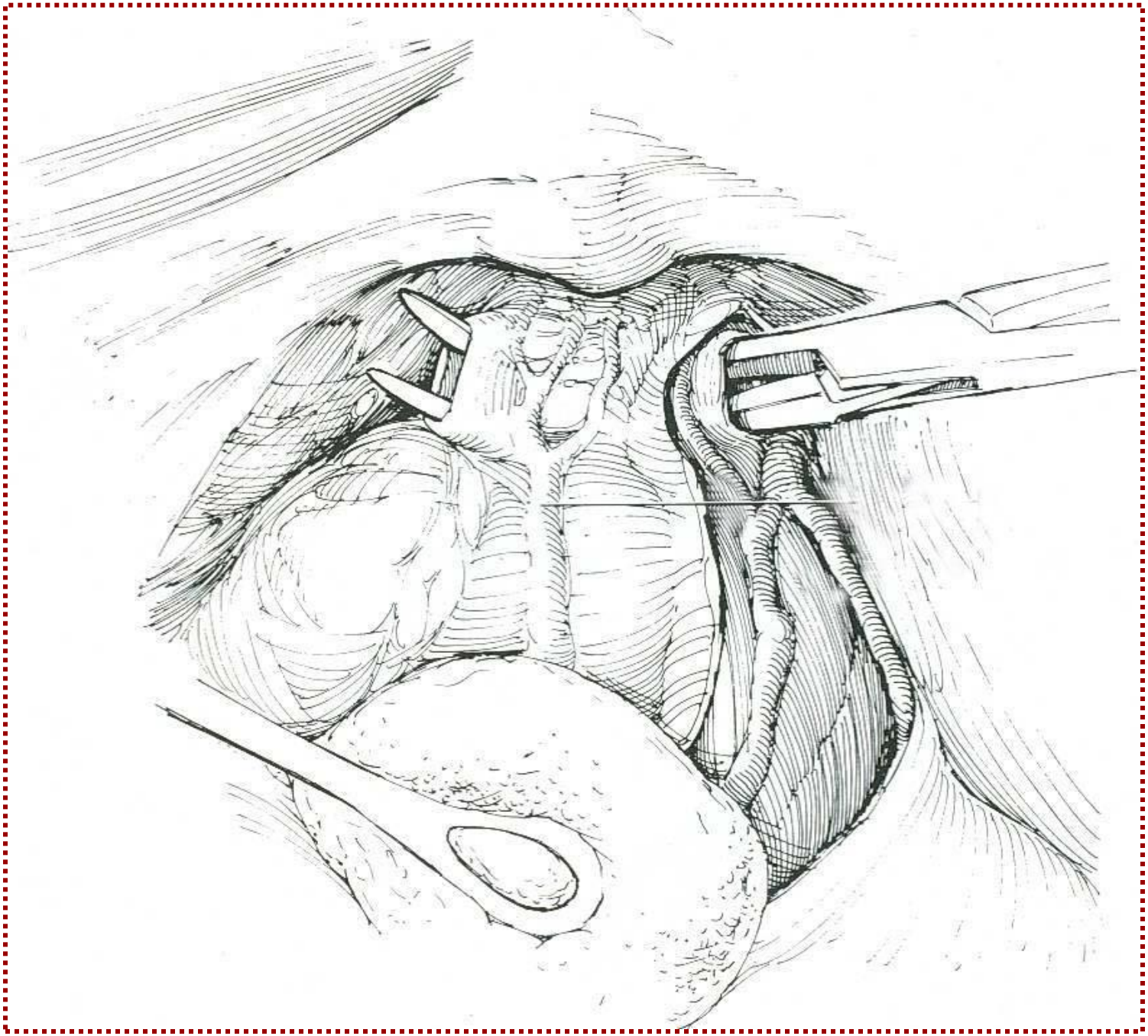
Hugh Hampton Young

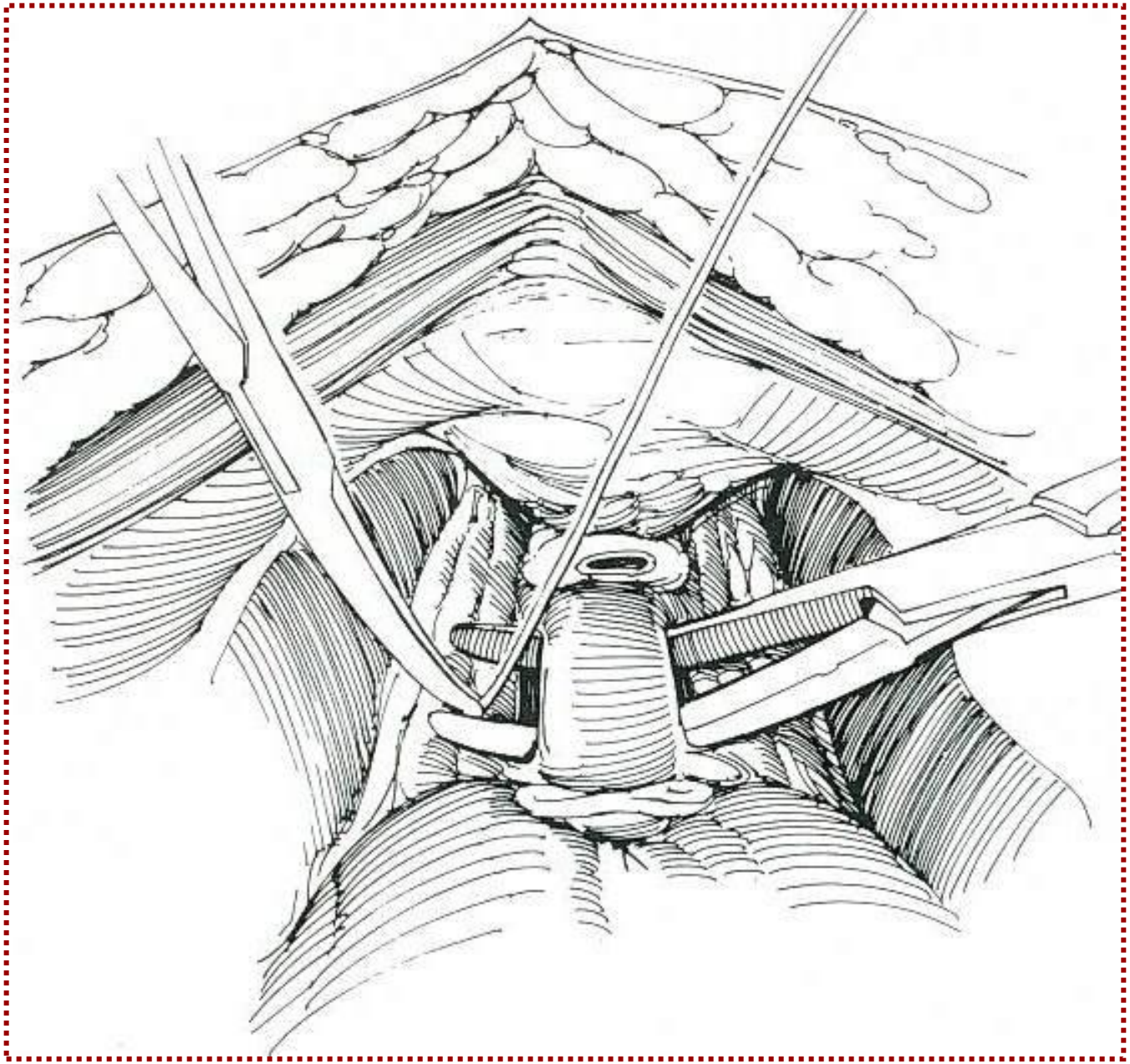
Indication of radical prostatectomy in our clinic

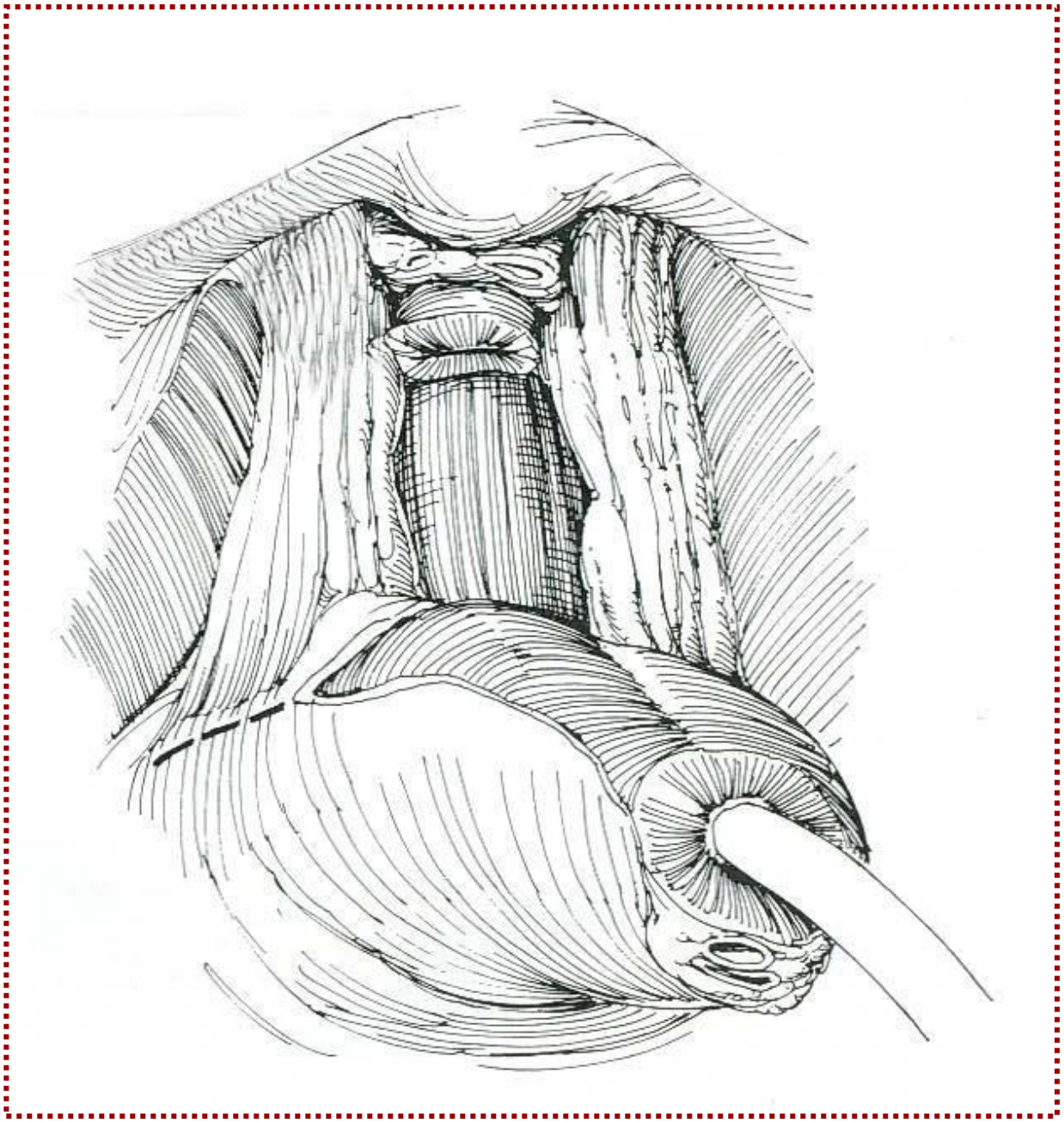
localised prostate cancer

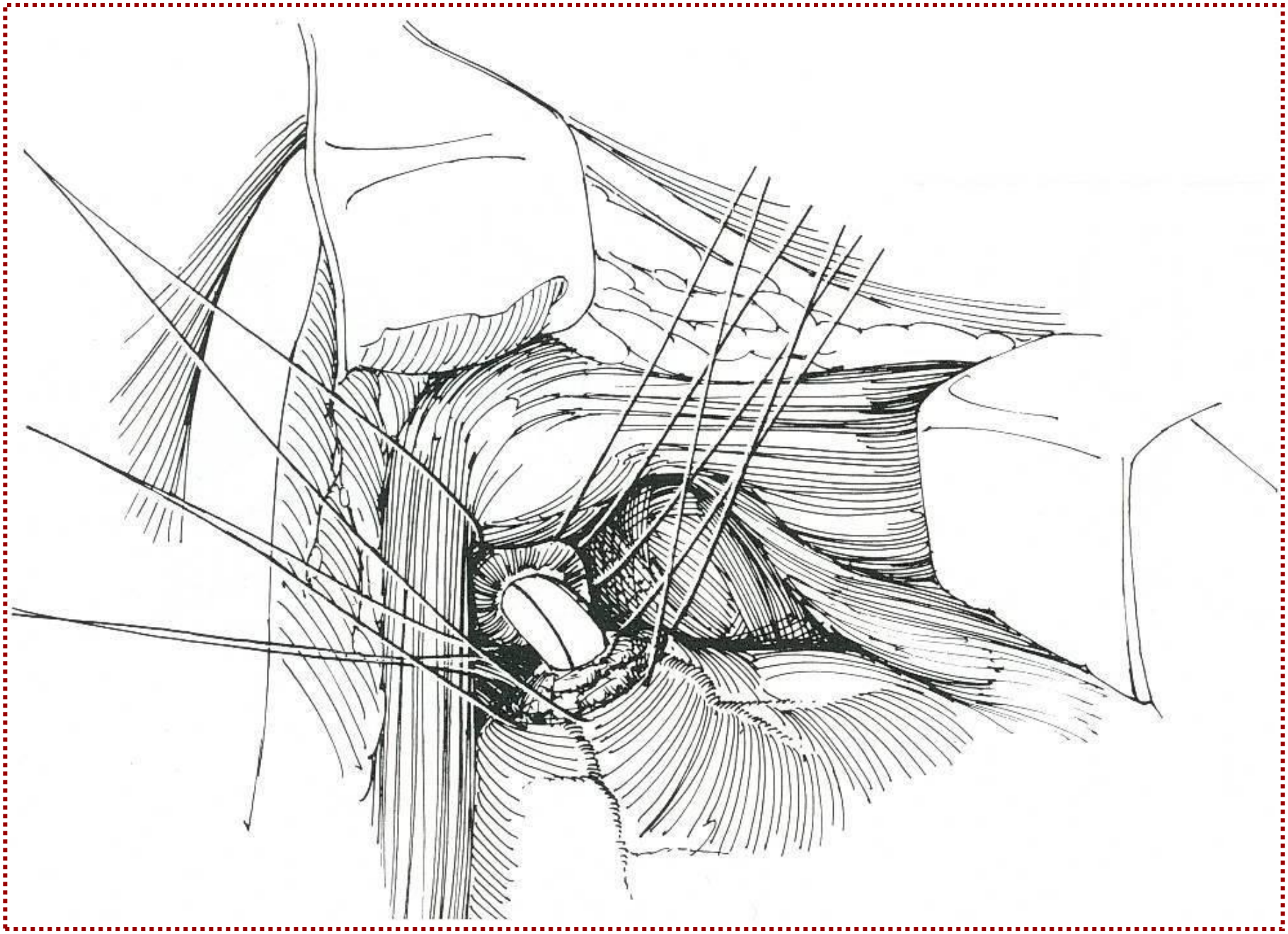
conditions

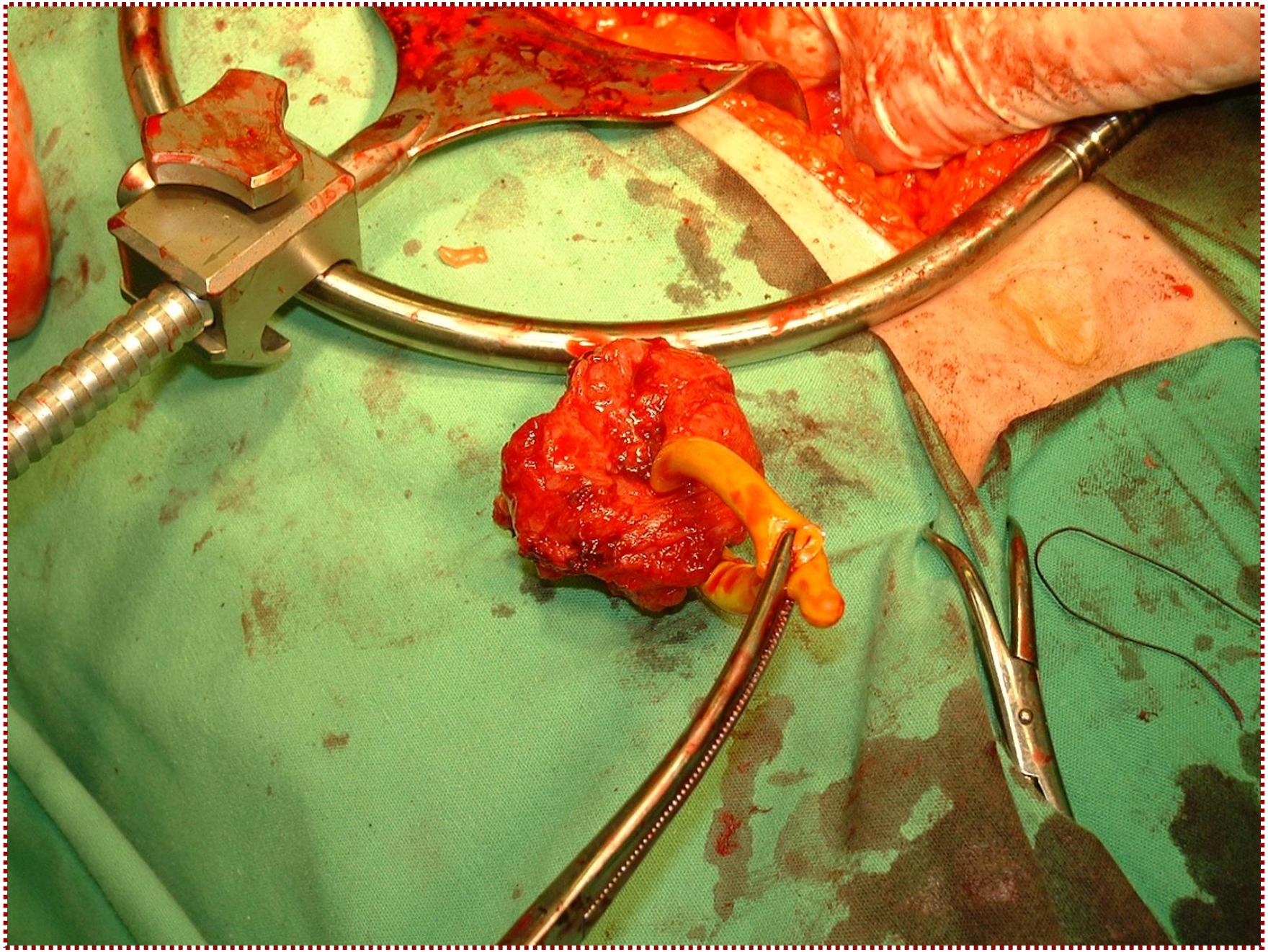
max. age	70
good general satus	
TRUS	no capsule penetration
PSA	< 25 ng/ml
bone scan	negative
chest X-ray	negative











T h e r a p y

Side effects of radical prostatectomy

- **Impotence** — **25-95%**
- **Incontinence**
  - **total** — **1 - 5%**
  - **stress incontinence** — **5-20%**
- **Stricture of the anastomosis** — **5-10%**
- **Rectal injury** — **1 - 5%**
- **Infection of the wound** — **2-10%**

Hormonal therapy

- **Antiandrogens**
  - **flutamid**
  - **bicalutamid**
  - **cyproteron acetate**
- **LHRH agonists**
  - **triptorelin**
  - **goserelin**
  - **buserelin**
  - **leuprolide**
- **Oestrogens**
  - **estramustin**

Hormonal therapy

- Antiandrogen monotherapy
- LHRH analog
- Total Androgen Blockade = TAB
  - Antiandrogen + LHRH analog (chemical castration)
  - Antiandrogen + surgical castration (orchiectomy)

- Hormon resistent prostate cancer
  - Estracyt therapy
  - Other chemotherapic drugs (Mitoxanthron, Taxans)

Supplemental therapy

In case of bone metastasis

- bisphosphonates
- palliative irradiation

I r r a d i a t i o n

Types

- **Extracorporal irradiation – 3 dimension conformal radiotherapy**
- **Brachytherapy**
  - **Interstitial irradiation**
  - **Intracavital irradiation**

Supportive therapy

- **Anaemia** ⇒ transfusion
- **Occlusio renis** ⇒ percutan nephrostomy
- **Cross laesion of the spinal cord**
  - ↙ steroids
  - ↘ neurological treatment
- **Total retention** ⇒ TUR
- **Pain** ⇒ analgetical drugs

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Thank you for your attention!