

# **Bladder-prostate rhabdomyosarcoma Conservative surgery with brachytherapy**

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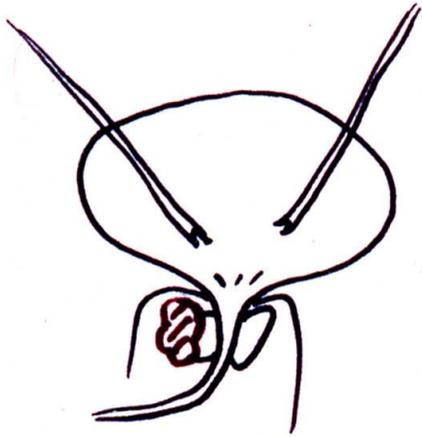
# BP RMS

- **Bladder preservation** has increased in the past years from 23% in IRS I study to **83%** in IRS IV study and **76%** in MMT 95 study
- But bladder preservation does not mean **normal bladder function** especially after external beam radiotherapy

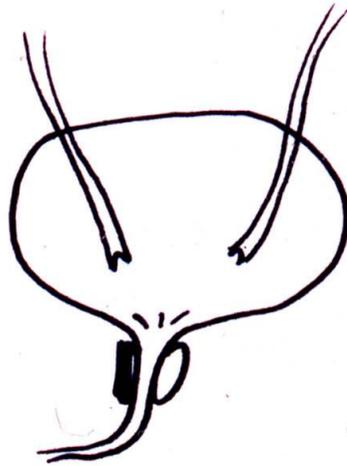
# Burden of local treatment

- **Significant**
  - Total cystectomy/prostatectomy/both
  - External beam radiotherapy
- **Not significant**
  - No surgery (only biopsy)
  - Conservative surgery (partial cystectomy or partial prostatectomy with urethra preservation)
  - brachytherapy

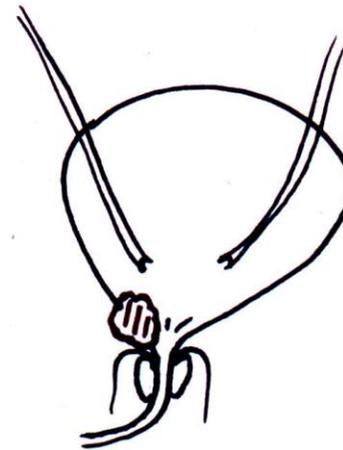
# Not significant surgery



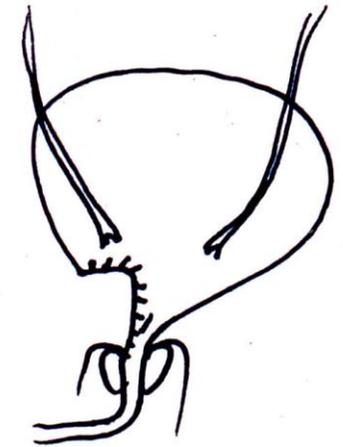
**Partial prostatectomy**



**+ Brachytherapy**



**Partial cystectomy**



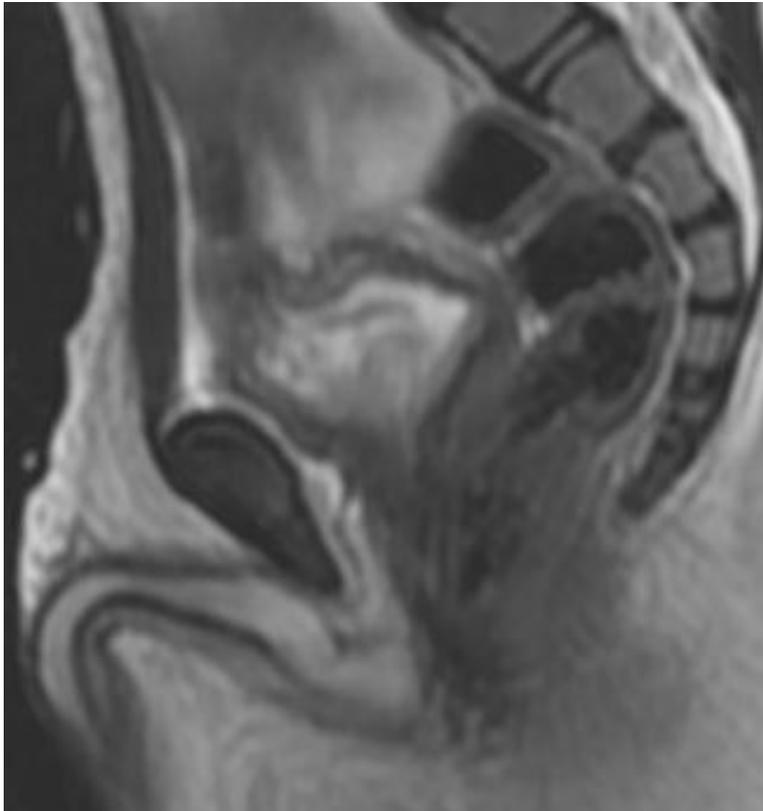
# Indications for the conservative treatment

- **Prostatic tumour and/or**
- **Bladder tumour at the level of the bladder neck**
- **no involvement above the level of the trigona**

# Indications for the conservative treatment

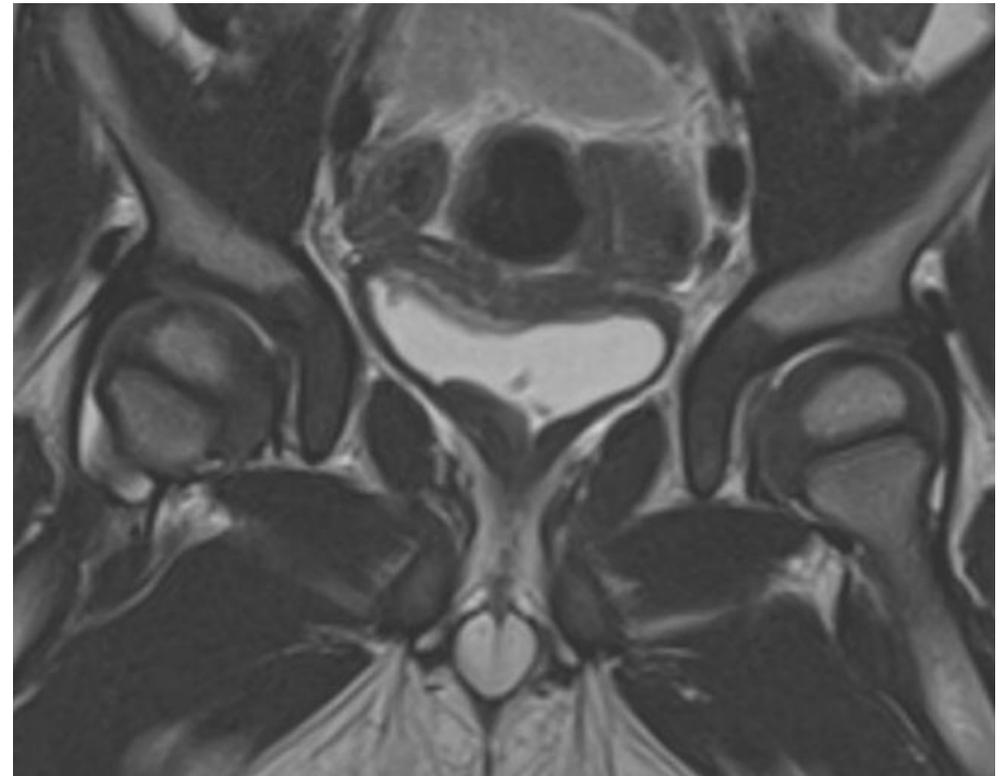
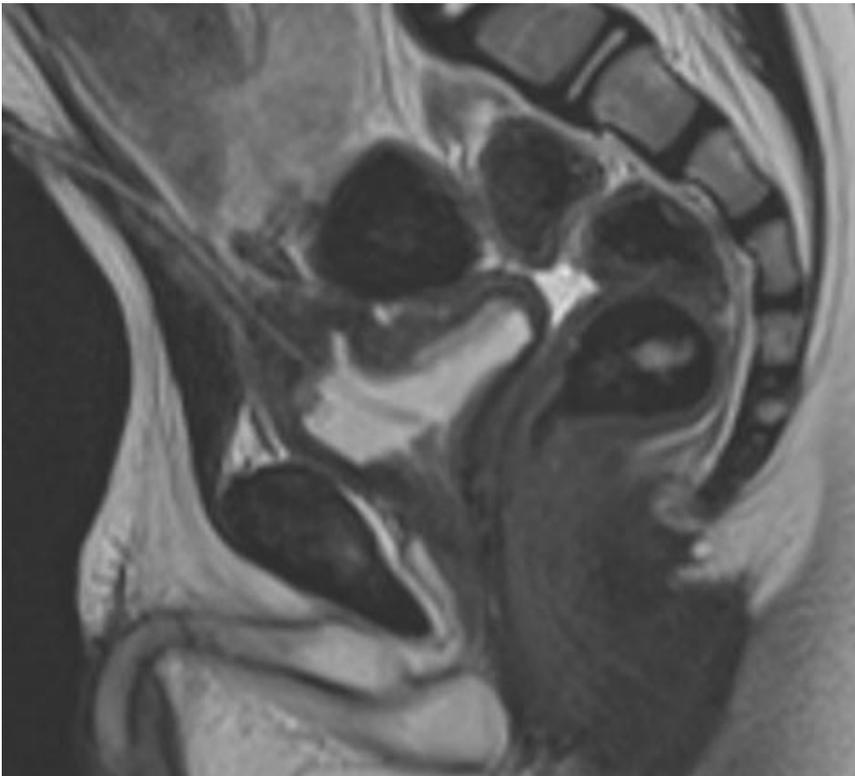
- **Very difficult at diagnosis**
- **Depends on the response to CT**
- **More than 4 courses usually necessary**
- **MRI with full bladder +++**

## 2 year old boy – Bladder ERMS

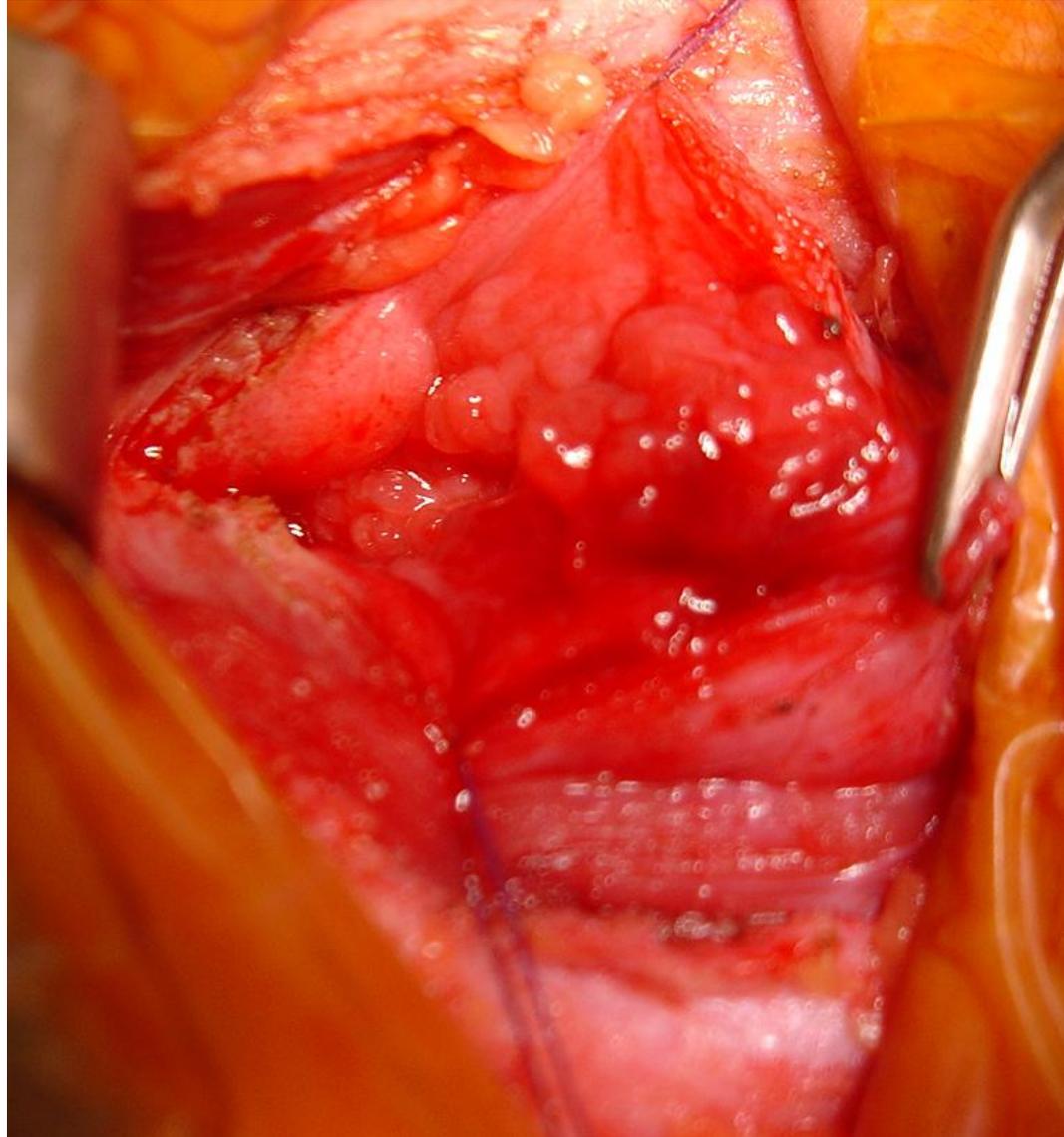


**At diagnosis**

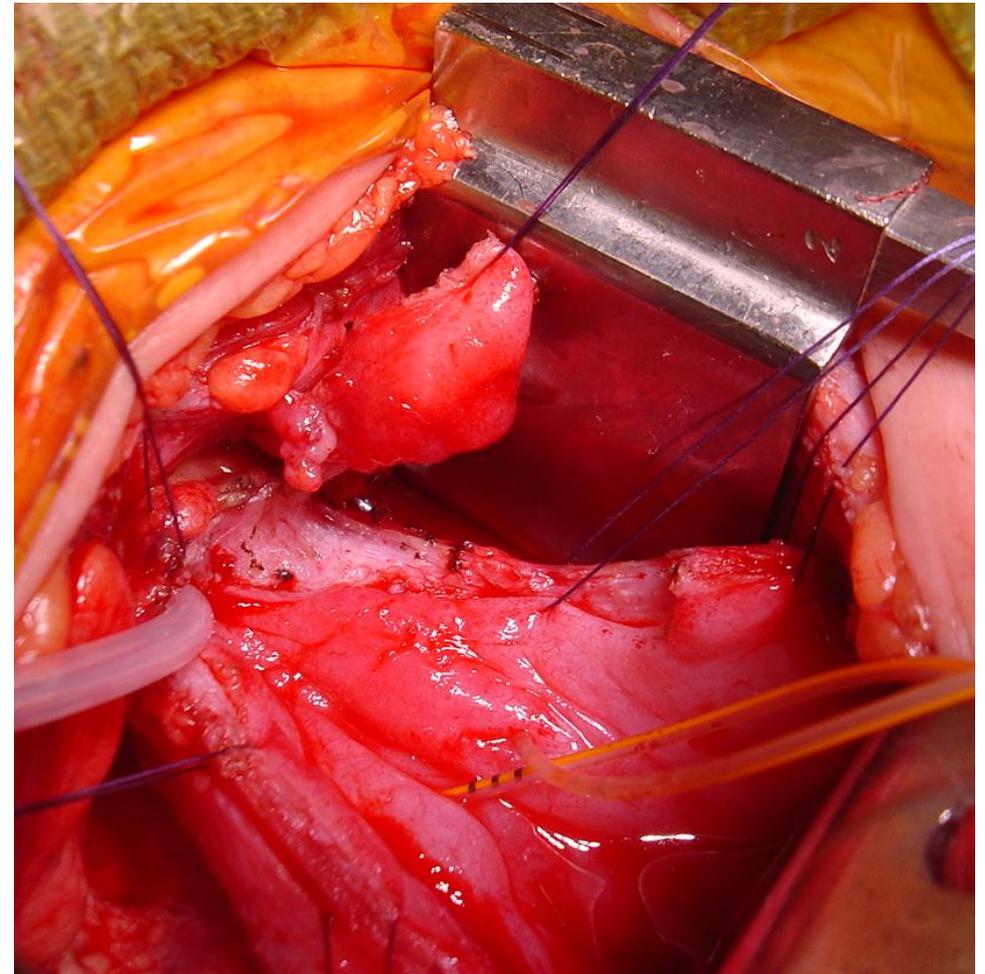
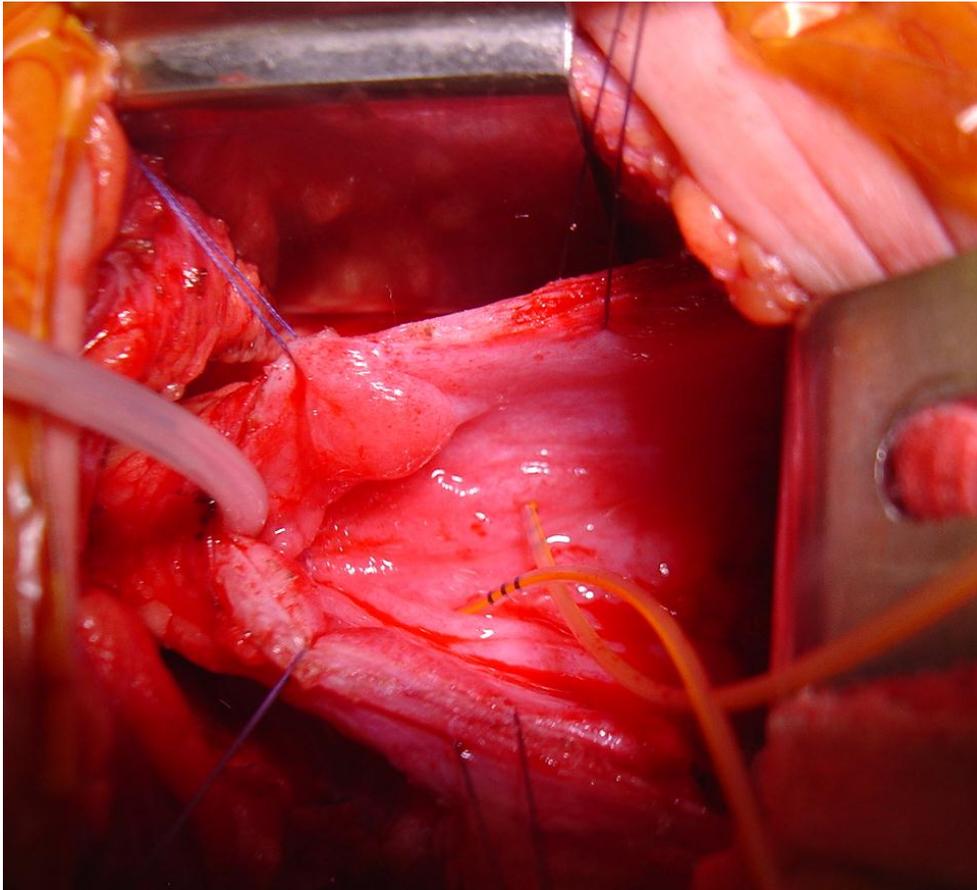
## After 6 IVA



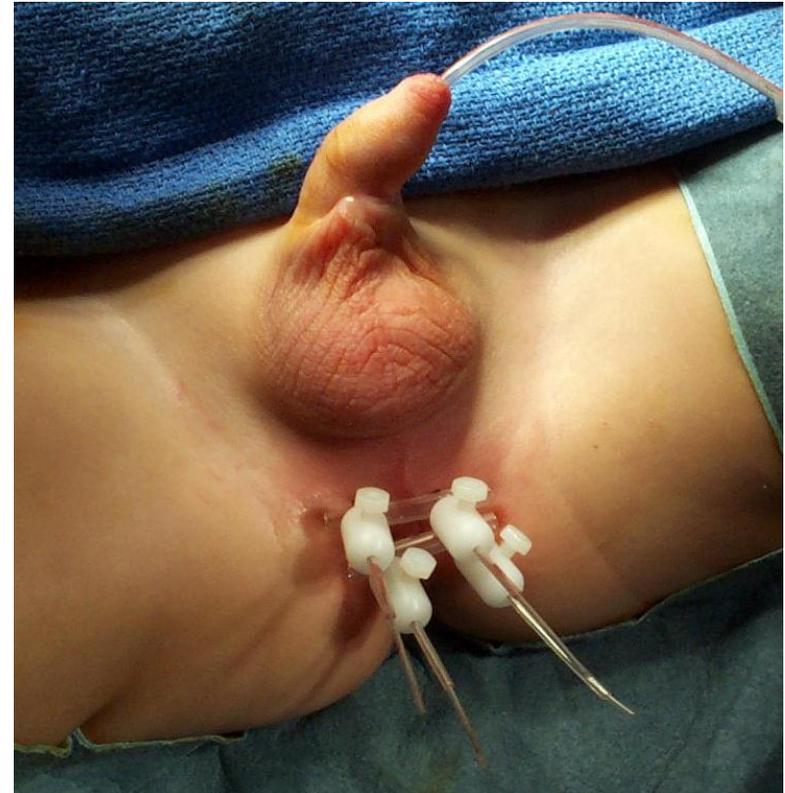
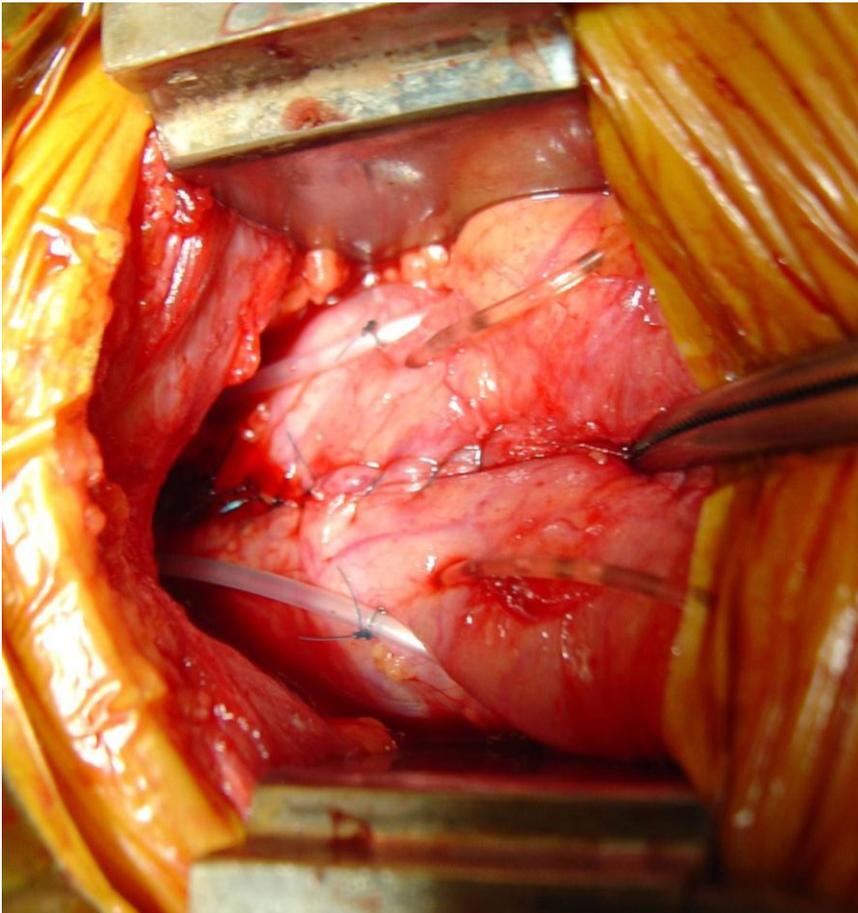
# Incision of the bladder



# Partial cystectomy

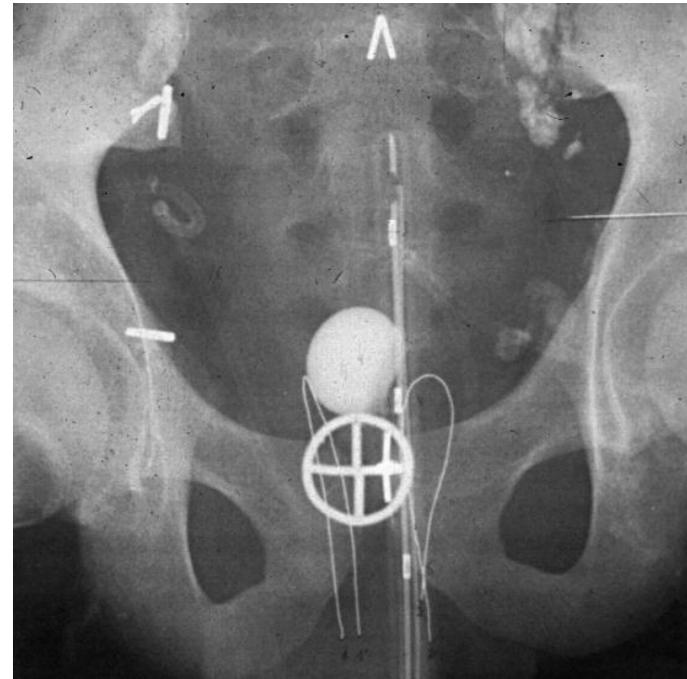


## 2 loops encompassing the bladder neck



# Brachytherapy (C Haie Meder)

- **Low dose rate**
- **Iridium 192**
- **60 Grays**
- **5 to 7 days**



# *J Pediatr Surg* 2009, 44, 190-96

## **26 boys**

Journal of Pediatric Surgery (2009) 44, 190–196



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**Conservative surgery plus brachytherapy treatment for boys with prostate and/or bladder neck rhabdomyosarcoma: a single team experience**

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Stéphanie Franchi-Abella<sup>c</sup>, Maria-Rosa Ghigna<sup>d</sup>, Isabelle Dumas<sup>e</sup>,  
Nathalie Bouvet<sup>f</sup>, Odile Oberlin<sup>g</sup>

**Until december 2011: 60 patients  
(54 boys-6 girls)**

**Median age : 24 months (5 months-14 years)**

- **Localized (IRS III): 52 pts**
- **Metastatic disease: 6 pts**
- **Relapsed RMS : 2 pts**

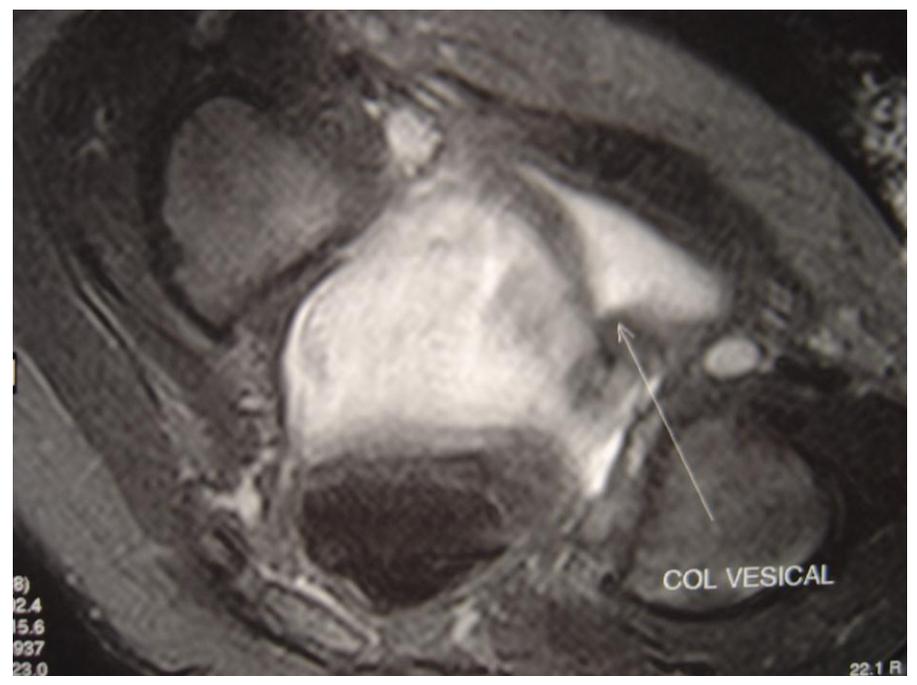
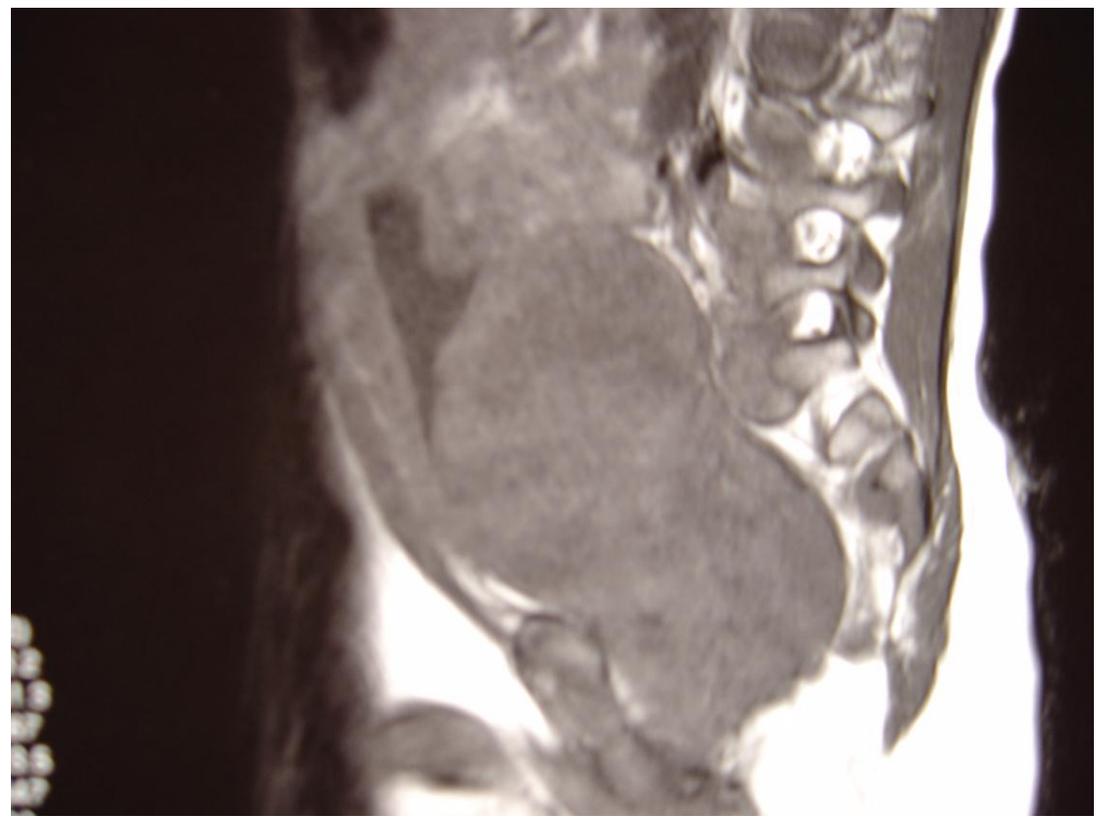
**T size > 5 cm : 35 pts (58%)**

# Preoperative ChemoT

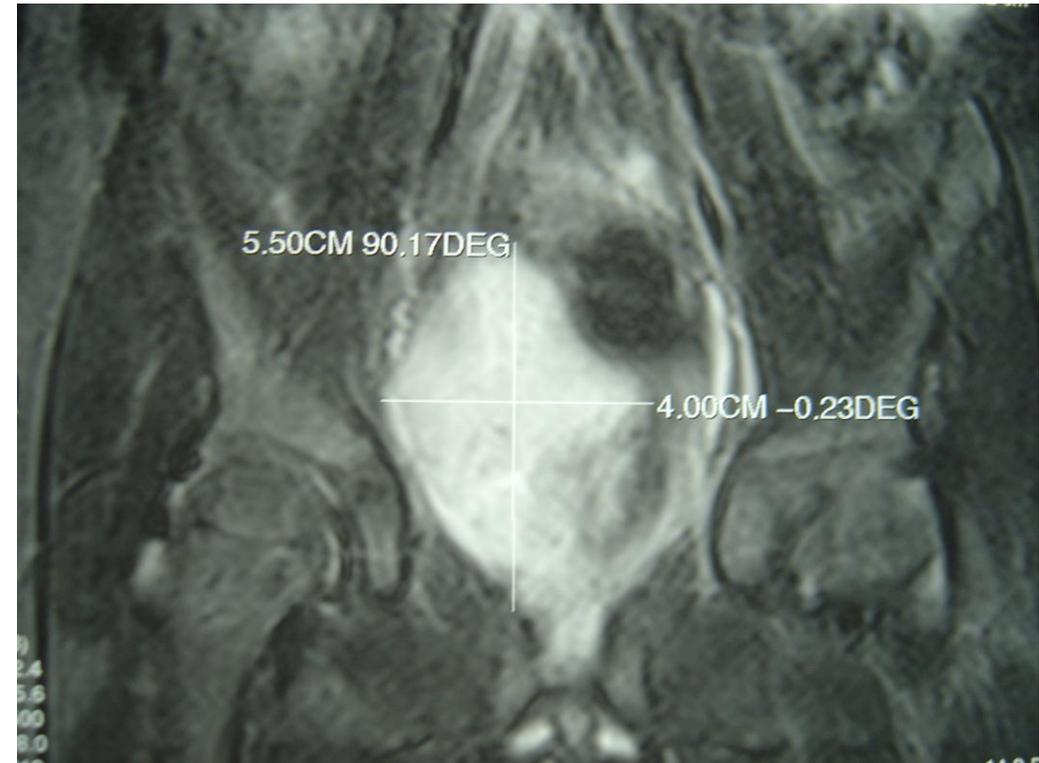
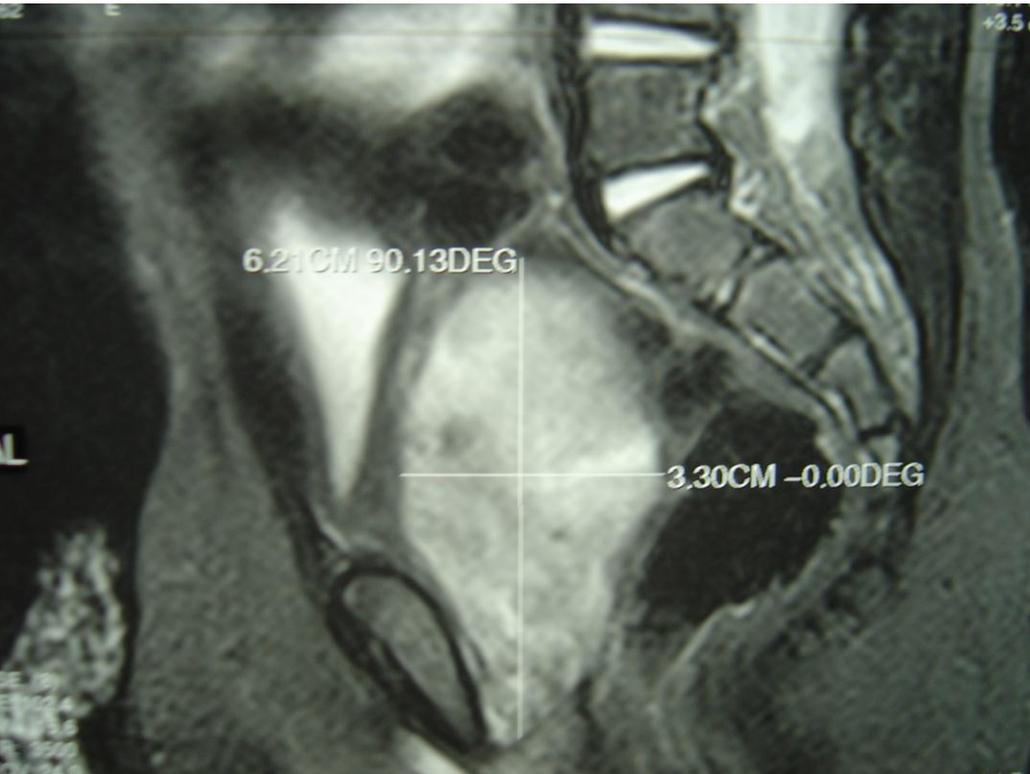
- Median number of CT courses : **7**  
(range: 4-13)
- Imaging : MRI +++
- Cystoscopy with biopsies

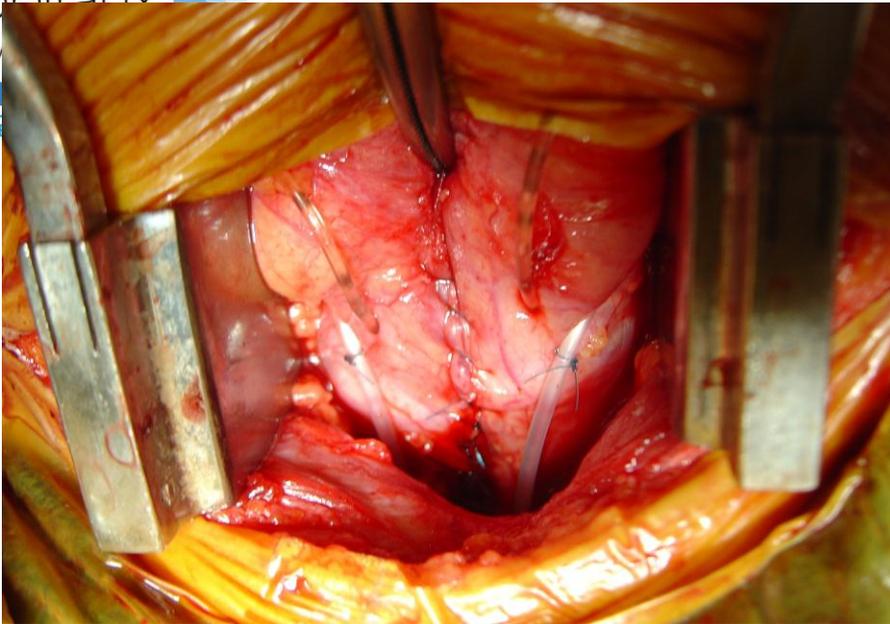
**Final decision : intra-operative (frozen sections)**

# 2 year-old boy with prostate RMS MRI at diagnosis



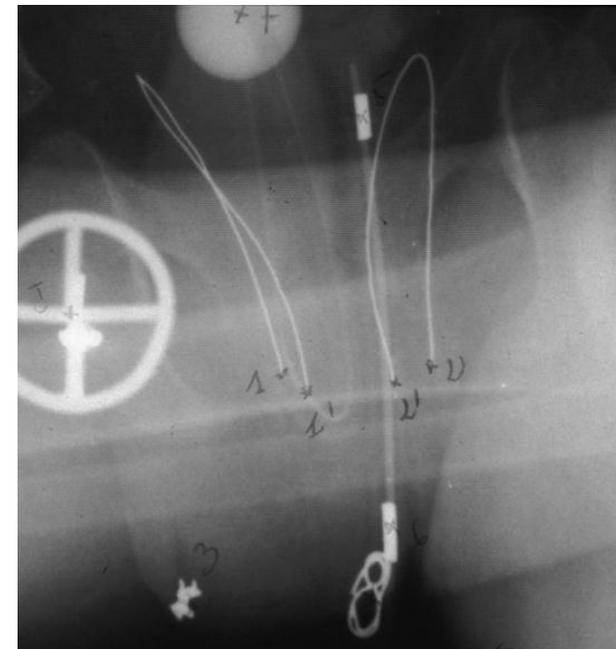
# After 7 courses of CT





## Left prostatectomy + brachytherapy

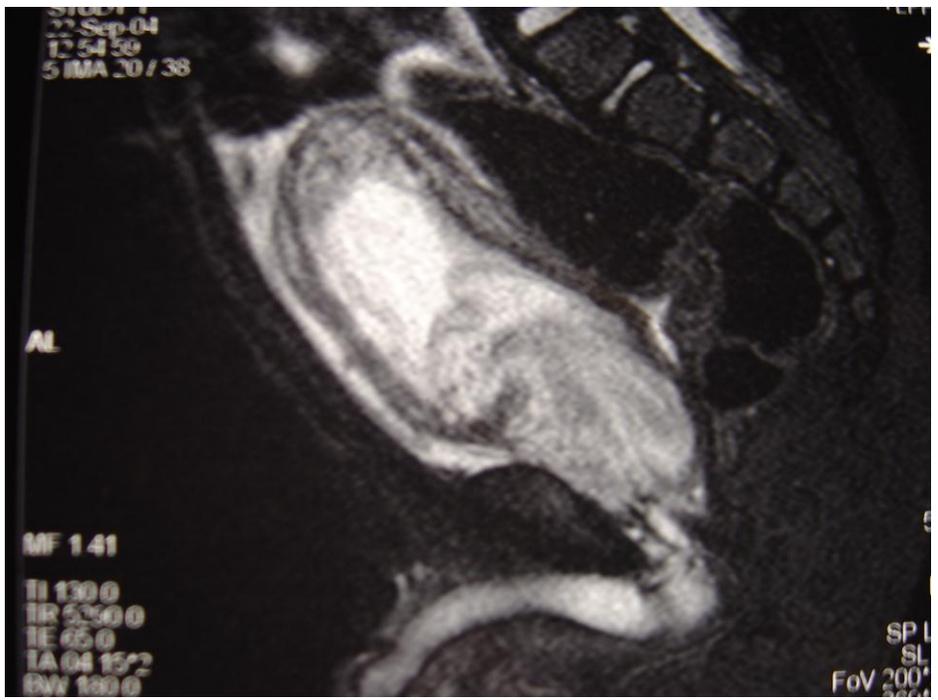
- Iridium 192
- 2 loops encompassing the prostate
- low dose rate (5-7 days)
- 60 Gy



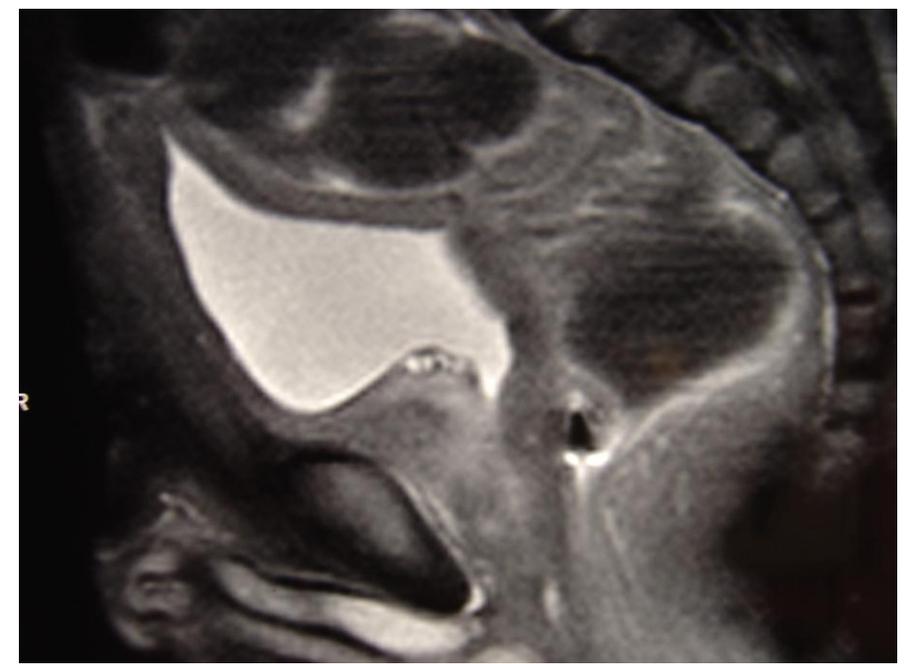
# 2 year-old boy - Bladder neck RMS

At diagnosis

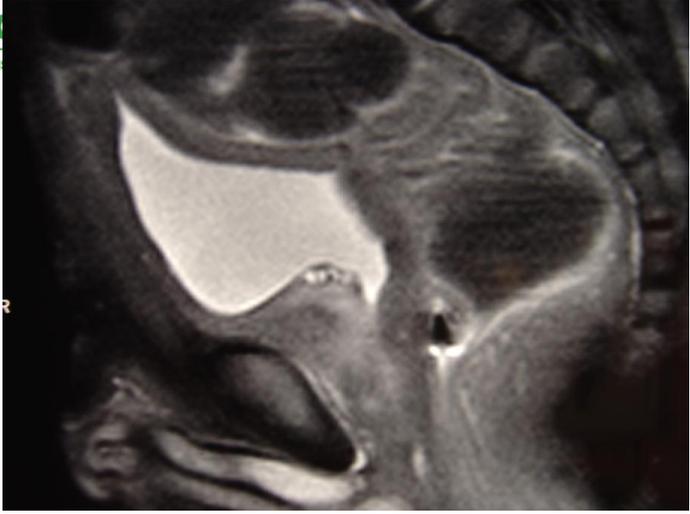
After 5 courses of IVA



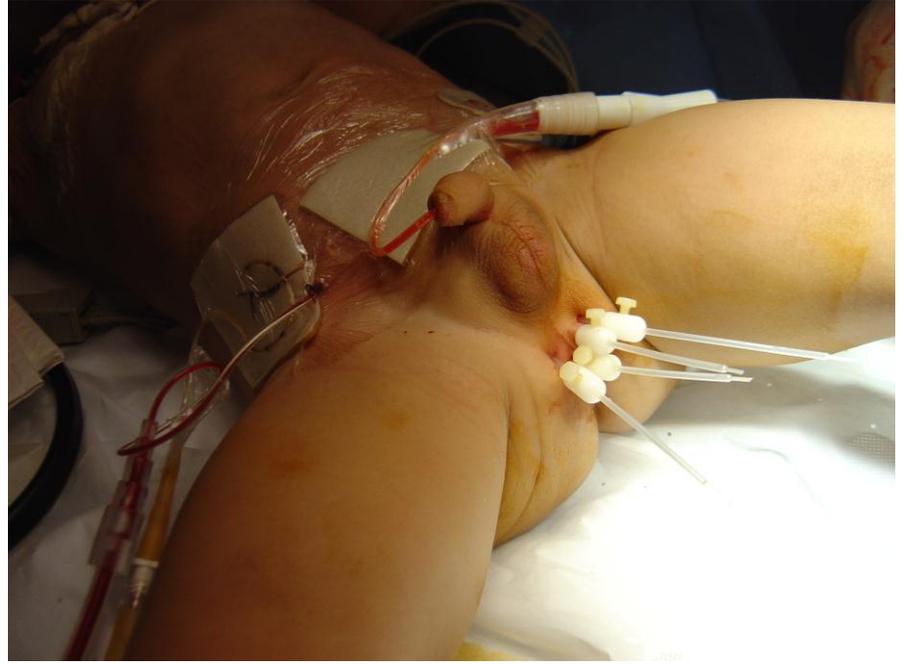
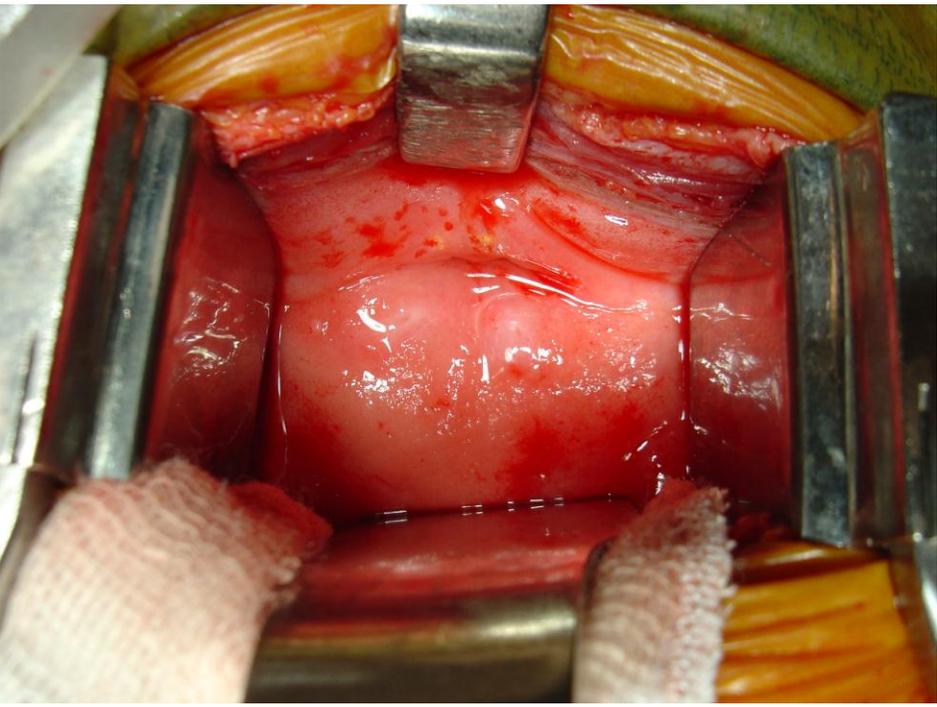
Tumour volume: 40 ml

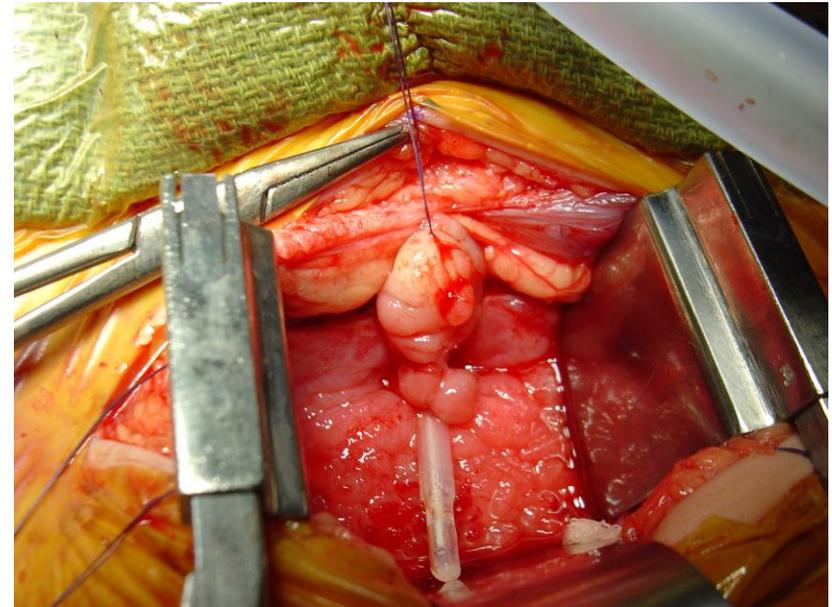
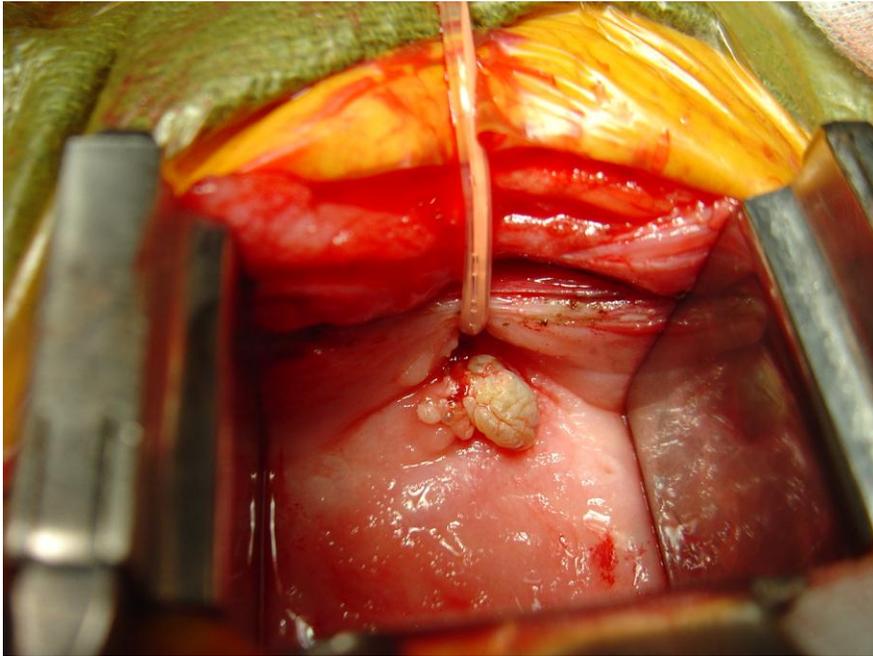
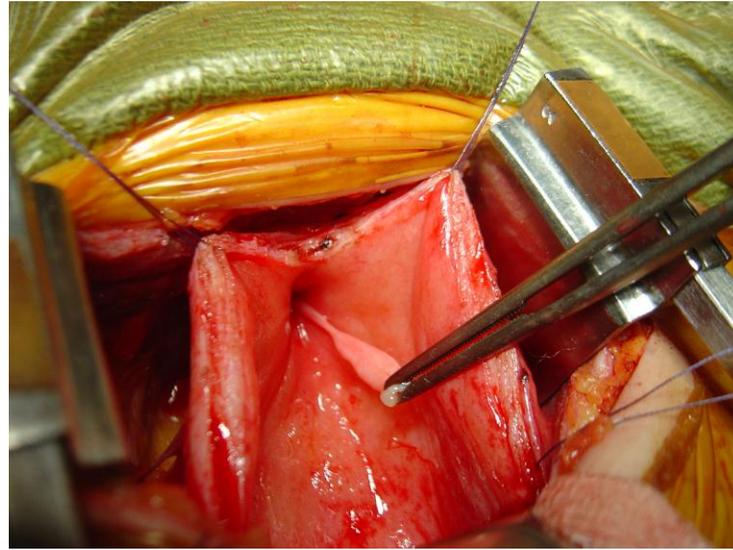


Tumour volume: 1.7 ml



# Bladder neck partial resection (viable T cells) + brachytherapy



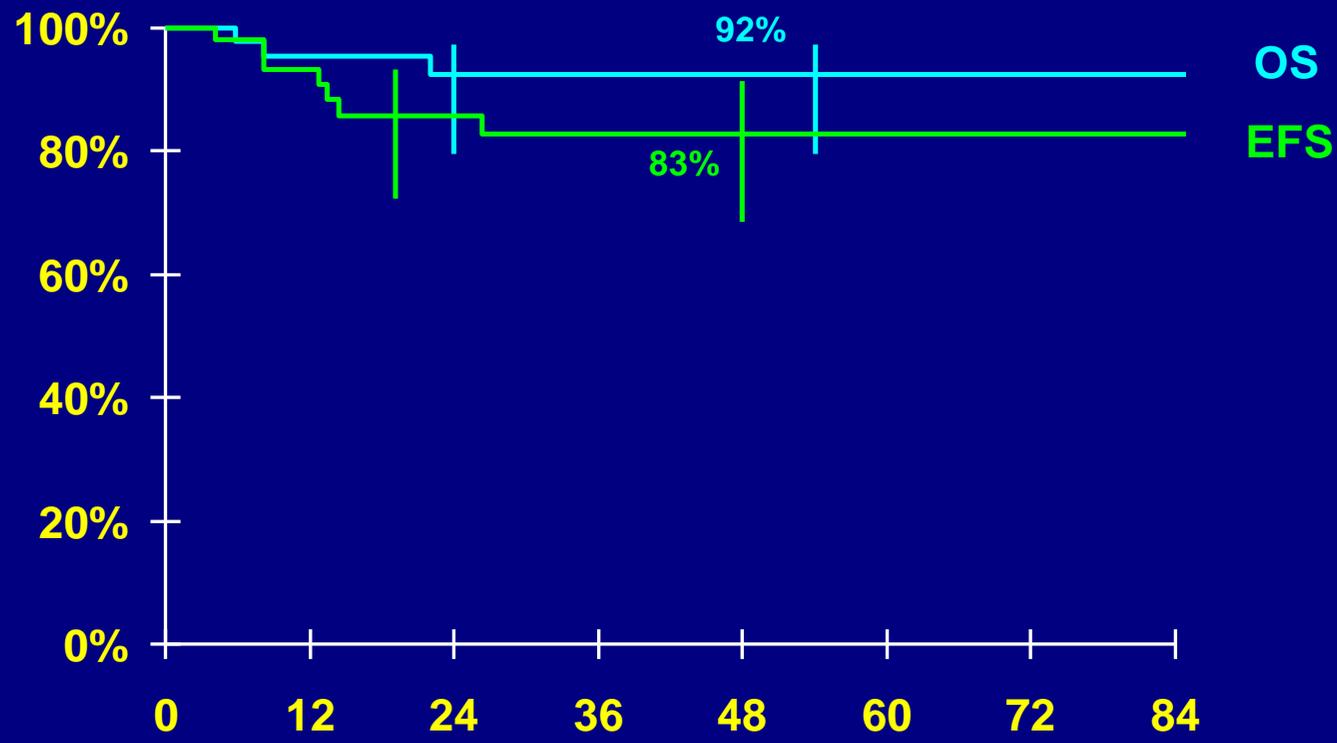


# Surgical procedure

- **Partial prostatectomy : 25 pts**
- **Partial cystectomy : 22 pts**
- **Partial prostatectomy + partial cystectomy : 8**
- **Tumorectomy: 3 pts**
- **Biopsy of the trigona : 2 pts**
- **Ureters reimplanted in 25 pts**

**39 pts (65%) : macro prostatic residuum**

**57 pts (85%): tumor cells in the resected specimen**



Months since surgery

At risk

—	61	39	29	21	18	17	13	11
—	61	38	29	21	18	17	13	11

# Results

- **Median follow-up : 6 years (1 - 17 yrs)**
- **56 pts are alive**
  - 53 pts are in first complete remission
  - 3 after local relapse (one within the BT field)
- **4 boys died**
  - 1 local (out of the BT field) + metastatic relapse
  - 3 metastatic relapse

# Functional results

- **80 % of children older than 6 have a normal continence**
- **20 % have some diurnal dribbling and/or nocturnal incontinence**
- **All boys have normal erections**

# Questionnaire of quality of life

- **19 patients between 1991 and July 2006**
- **15 patients completed the questionnaire of quality of life (QOL)**
- **Median age at operation: 24 months (14-132)**
- **Median age at time of the questionnaire: 12 years (6-24)**
- **Median follow-up: 107 months (65-247)**

# Incontinence

- **The principal QOL problems are concentrated in 4 patients**
  - 2 with day and night incontinence (10 and 12 years of age)
  - 2 with night incontinence (7 and 9 years)
- **Difficulties with social life and problems on holidays are significantly relieved with the need of day or night protections ( $p = 0.0125$ ).**

# Conclusion

**Even if very long term sequelae need further evaluation, this conservative surgery + brachytherapy treatment allows a normal continence in nearly all patients even after temporary diurnal incontinence**

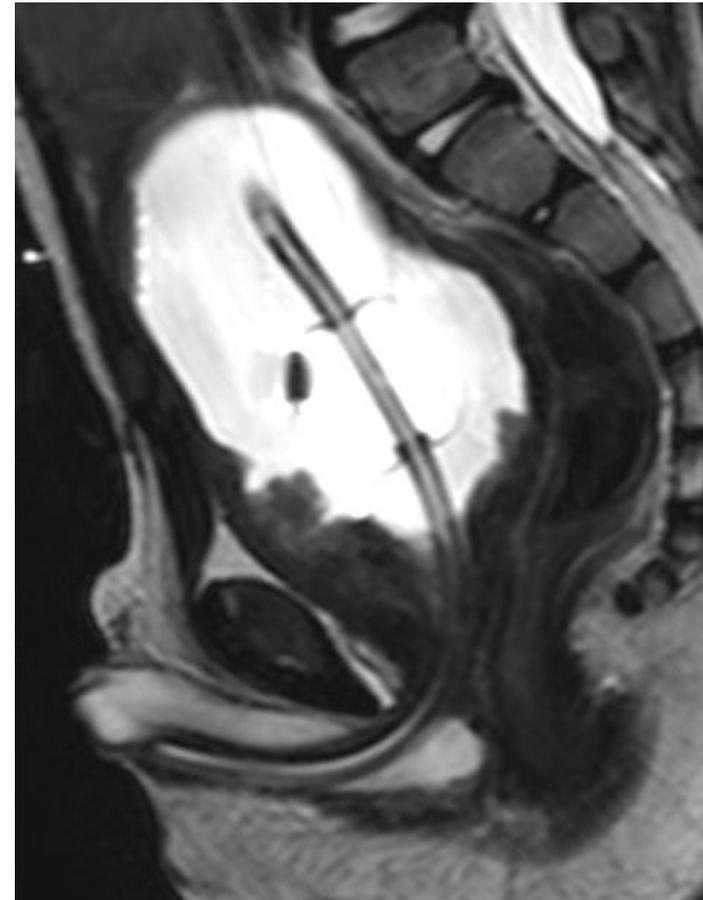
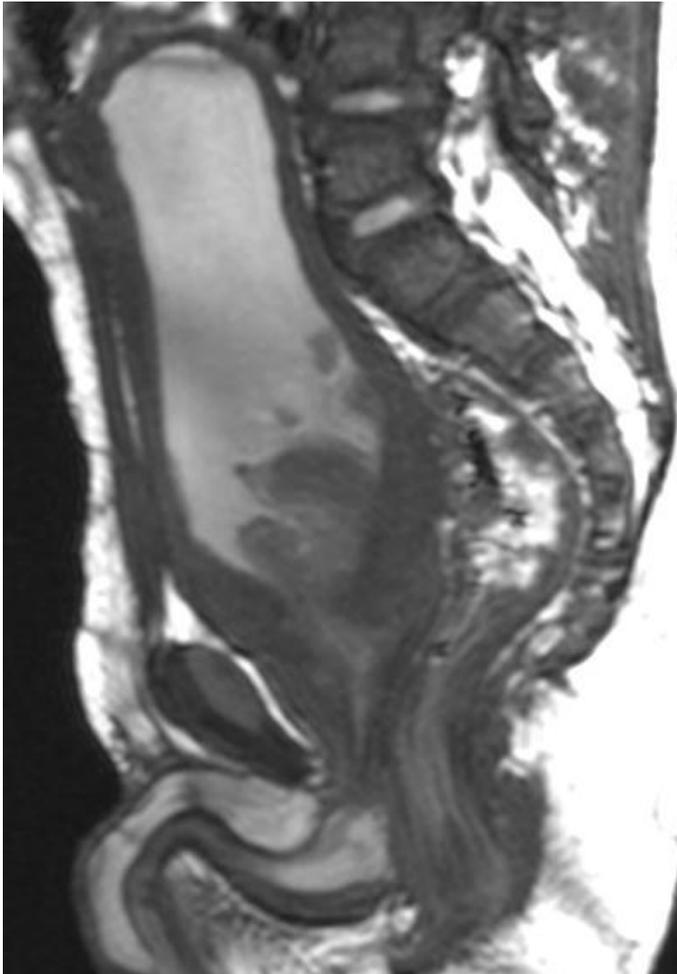
**Indications should be carefully discussed in a multidisciplinary team**

**Long term sequelae are being studied in this population**

# Consequences of total prostatectomy in young boys

- **No data about erections in the litterature**
- **Residual tumour left in place at the level of the urethra**
- **Brachytherapy of the prostate after cystectomy**

# 2 patients: total cystectomy keeping the prostate + brachytherapy



**Thank you**



**Bicêtre Hospital**