

Cancer du Vagin Cancer de la vulve

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Généralités

- Tumeur rare: 2-3% des cancers gynécologiques
- Incidence: 0,8-1 / 100 000 femmes
- Âge moyen: 60 ans
- HPV +++ (16-18)
- Sous-types histologiques
 - 85% épidermoïdes
 - 5-10% adénocarcinomes
 - 2-5% de sarcomes et 2-5% de mélanomes
 - < 1%: petites cellules, indifférenciés

Evidence based

- Tumeur rare
- Petites cohortes
- Rétrospectives
- Période d'inclusion longue
 - Études hétérogènes
 - Techniques / doses hétérogènes

Classification FIGO

FIGO	Description	Fréquence
I	Limité au Vagin	26%
II	Invasion du paravagin	37%
III	Paroi pelvienne	24%
IVA	Vessie / Rectum	13%

Traitement

- **Chirurgie: rôle (limité) dans les tumeurs de stade I**
 - 1/3 inférieur
 - Taille > 2-3 cm
- **Radiothérapie +++**
 - EBRT + curiethérapie
 - Chimiothérapie concom
■ Analogie au cancer du col

Radiothérapie

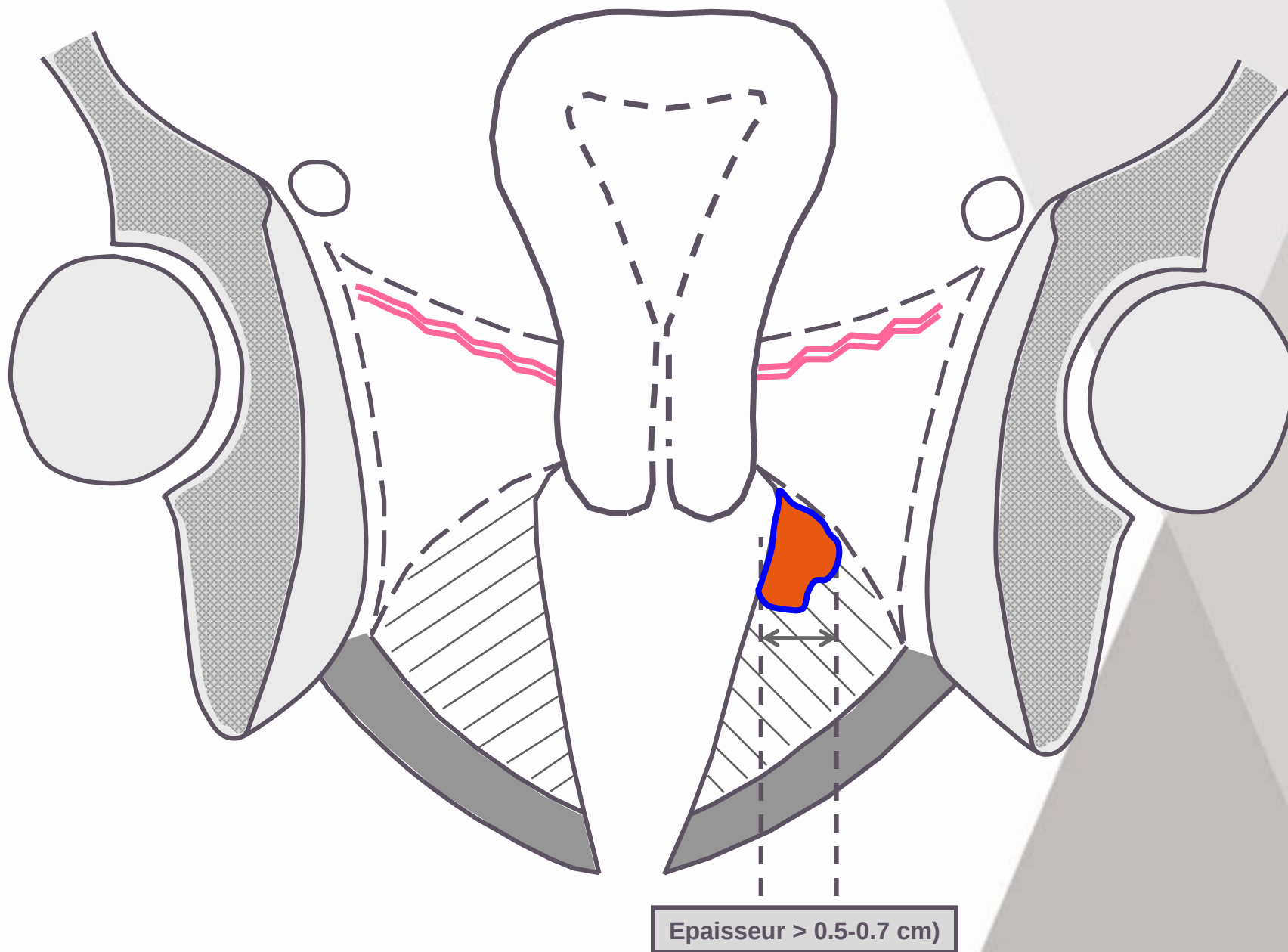
- **Volume**
 - Vagin
 - Para-vagin
 - Paramètre
 - Aires ganglionnaires pelviennes
 - Inguinaux si 1/3 inférieur
 - Utérus ?
- **Chimiothérapie concomitante**
- **Curiethérapie**
 - Dose totale 70-80 Gy
 - Lésion résiduelle d'épaisseur > 5mm: interstitielle

Stock, IJROBP 1992; Hacker, In J Gynaecol Obstet 2012; Hiniker Gynecol Oncol 2013; Tran, Gynecol Oncol 2007; Rajagopalan, Gynecol Oncol 2014; Lee, ACR Cancer Network 2013

Curiethérapie 2D

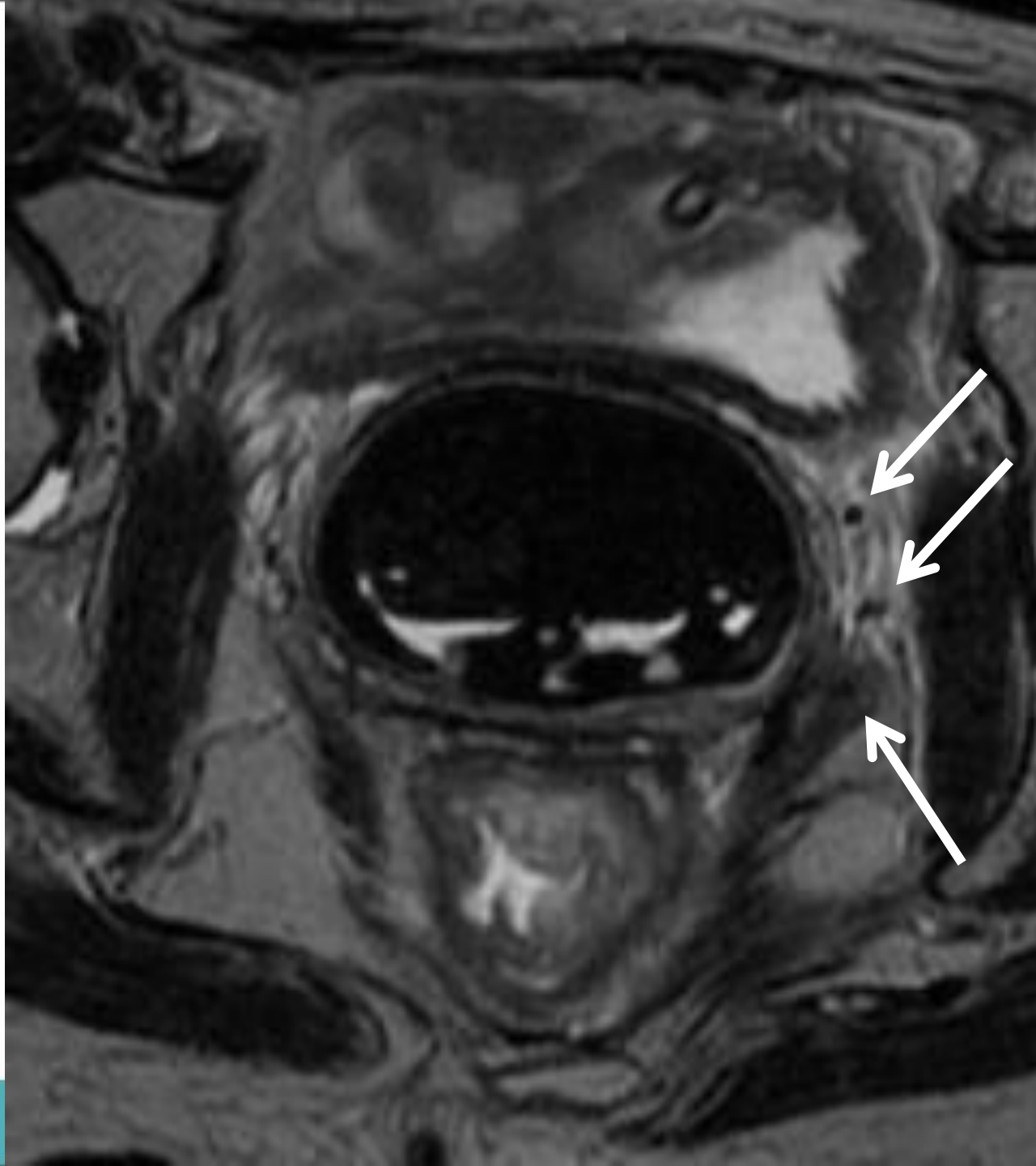
Auteur	Technique	N	C Local / pelv	Tox Vag	Tox U	Tox dig
Stock (1988)	RT / Curie	49	44% 2-y	8%	4%	14%
Chyle (1996)	RT / Curie	301	77% 5-y	6%	4%	6%
Fine (1996)	RT / Curie	55	78% 5-y	0	0	15%
Mock (2013)	RT / Curie	86	80% 5-y	4%	1%	2%
Lieskovsky (2004)	RT / Curie	54	87% 4-y	7%	2%	6%
Frank (2005)	RT / Curie	193	81% 5-y	Nr	3%	10%
De Crevoisier (2007)	RT / Curie	91	≈ 82% 5-y	14%	10%	9%
Samant (2007)	RT / Curie	12	92% 5-y	17%	Nr	17%

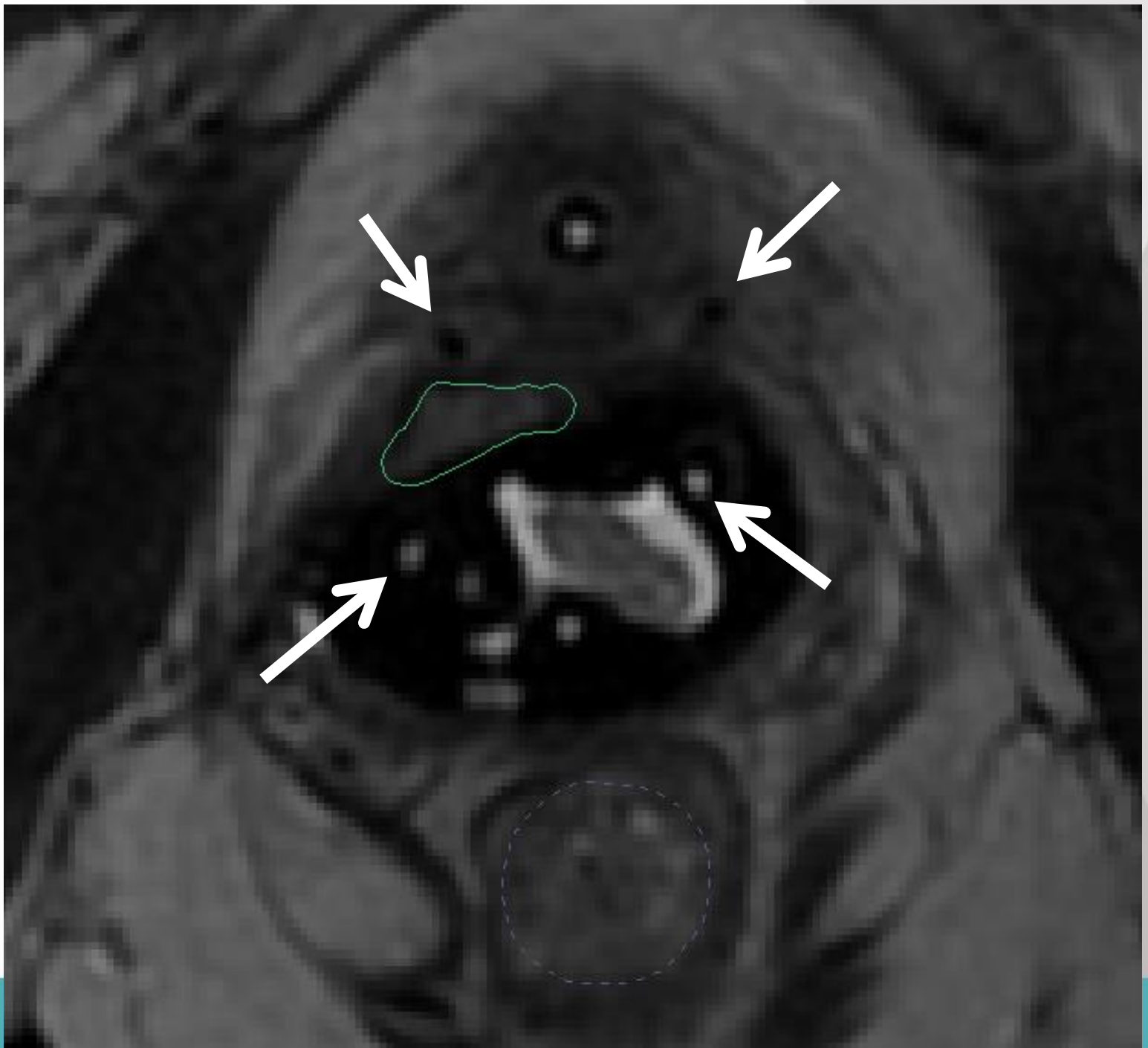
Taux de contrôle local moyen ≈ 78-80%



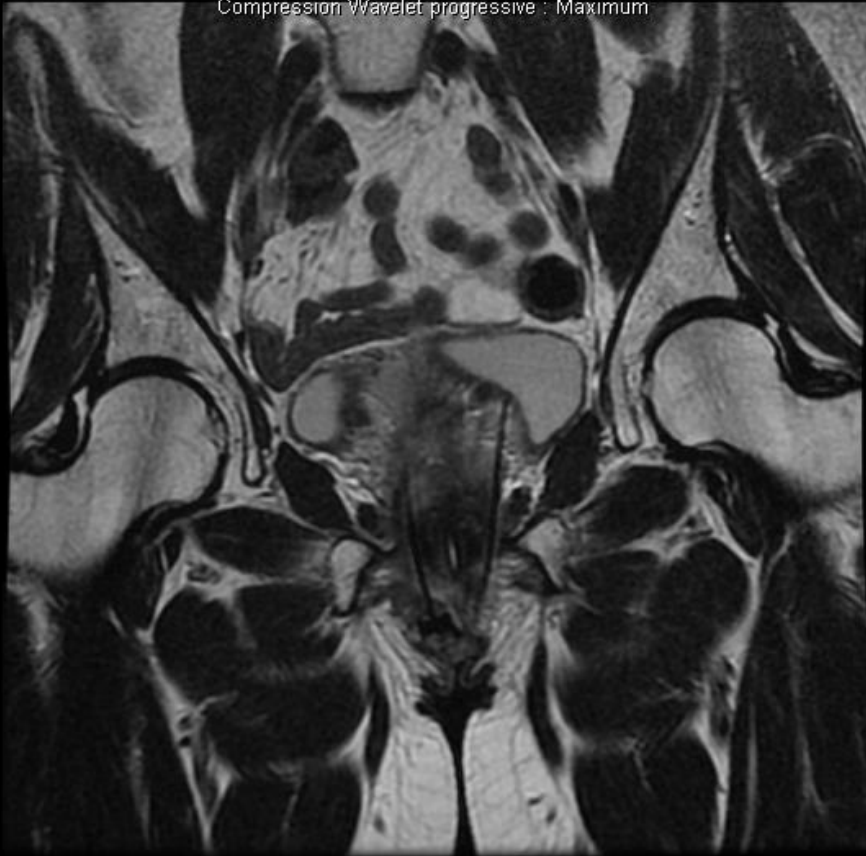
Echographie transvaginale



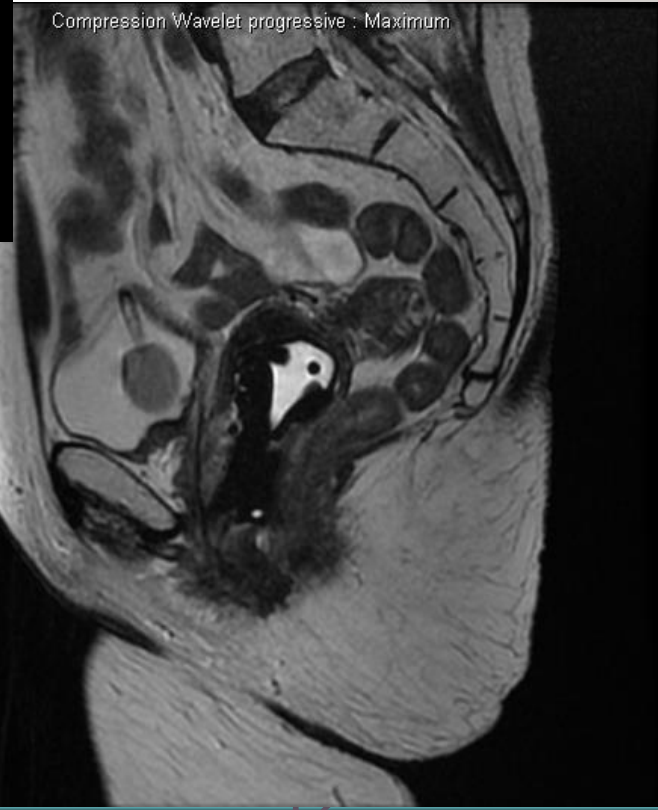




Compression Wavelet progressive : Maximum

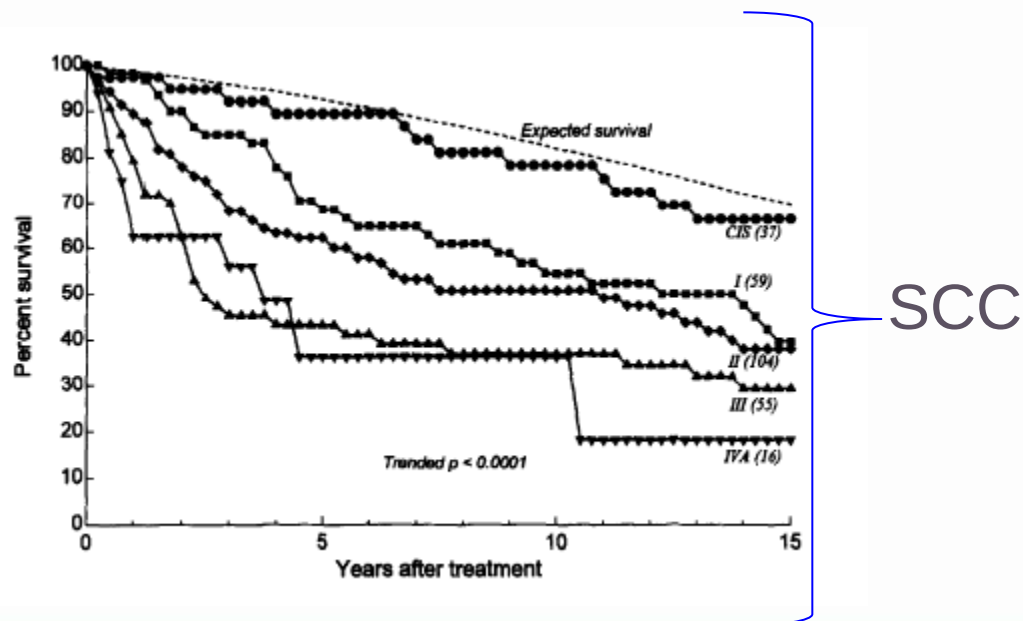


Compression Wavelet progressive : Maximum

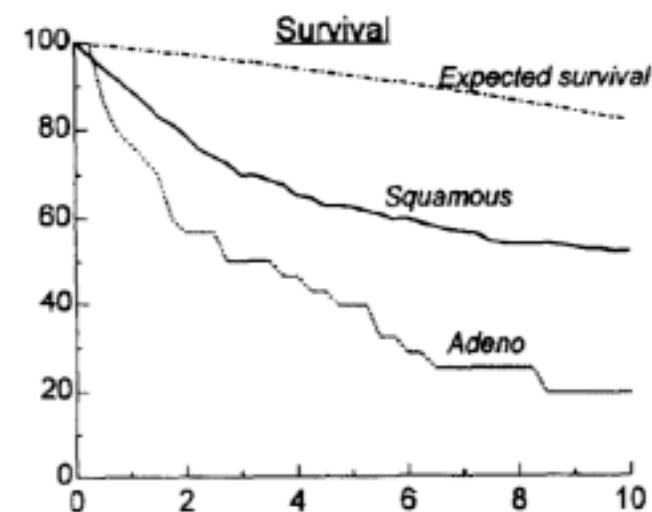
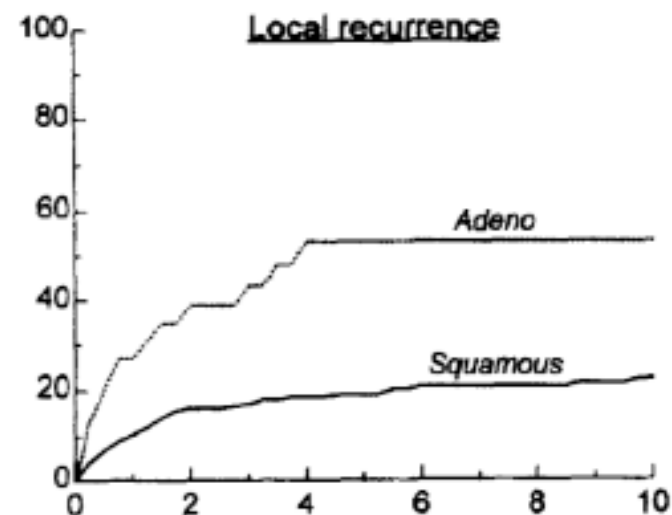


Facteurs pronostiques

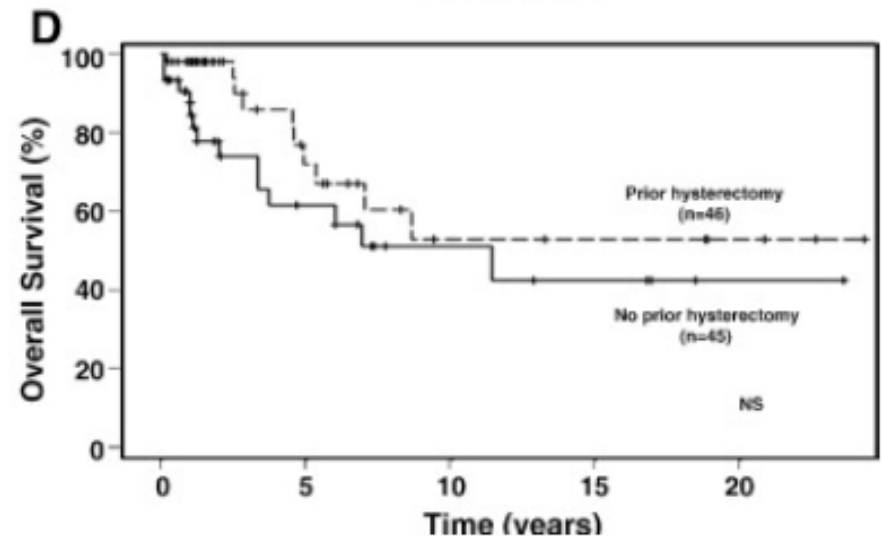
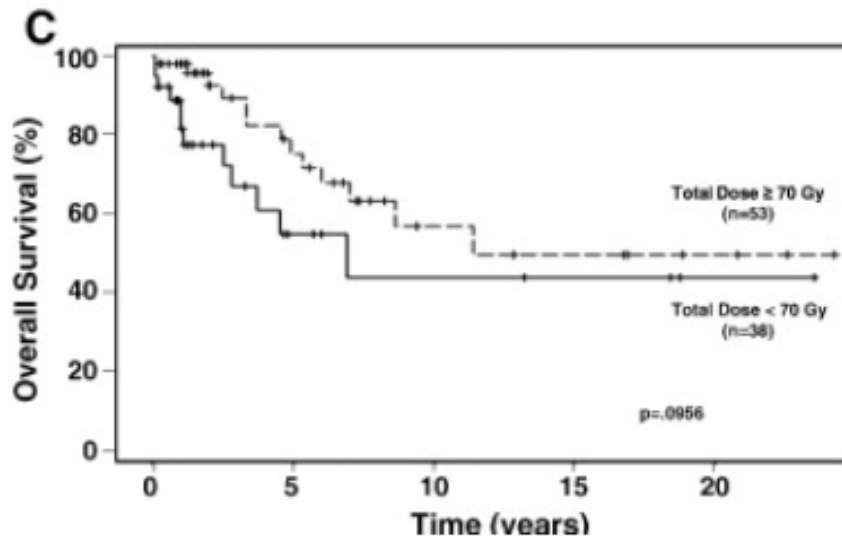
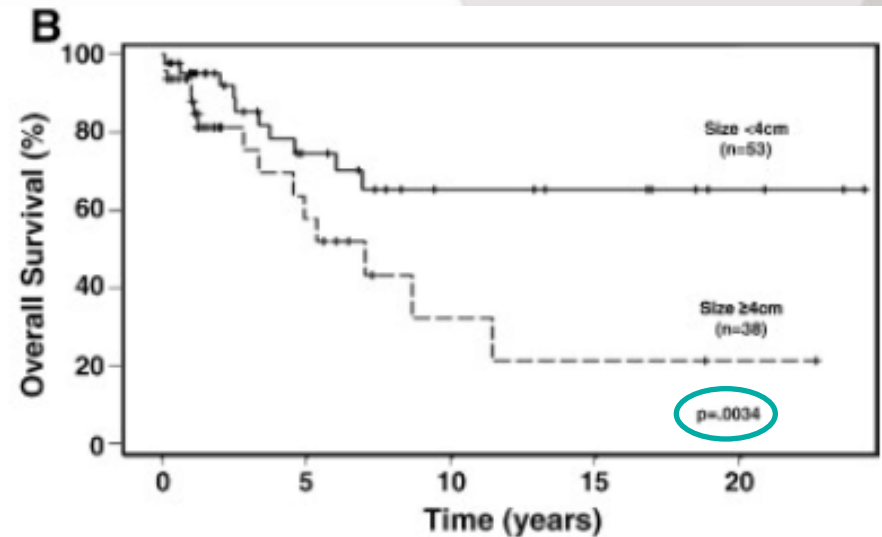
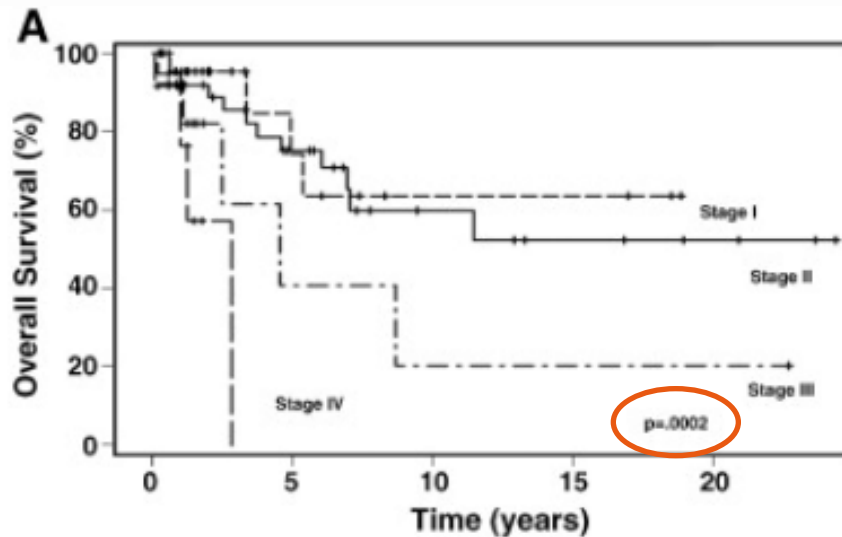
- MDACC
- 301 patientes
- 1953-1991
- Stade FIGO, site, taille, type histologique



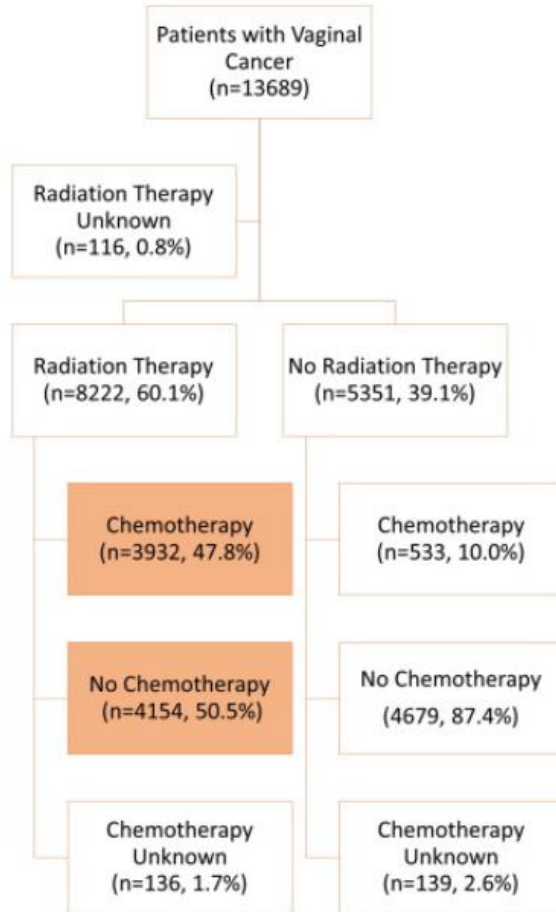
All patients



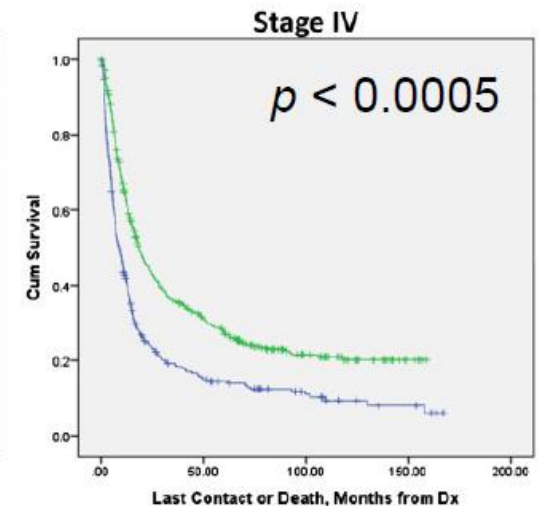
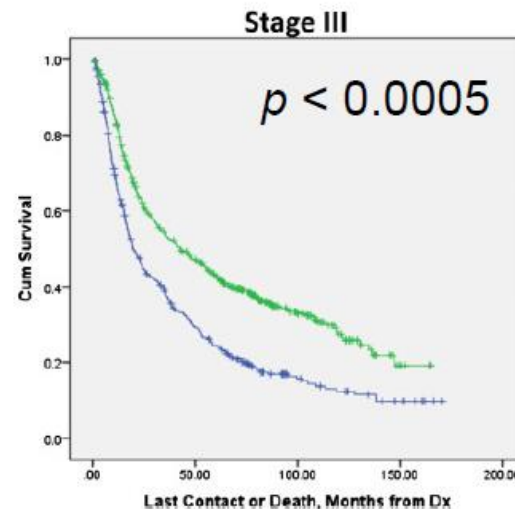
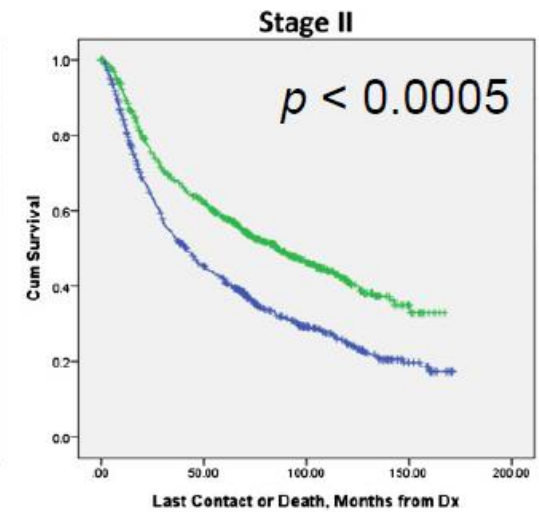
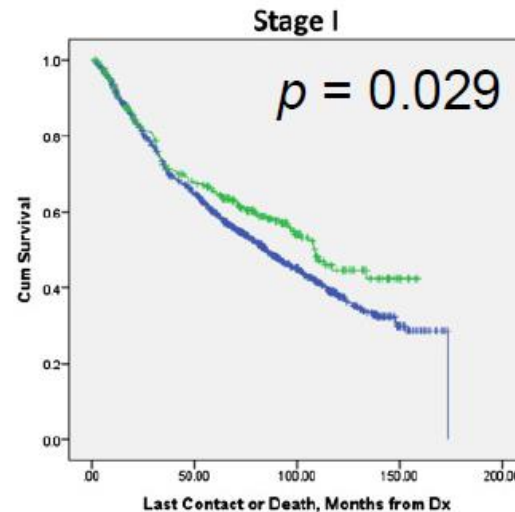
91 patientes / 1959-2011



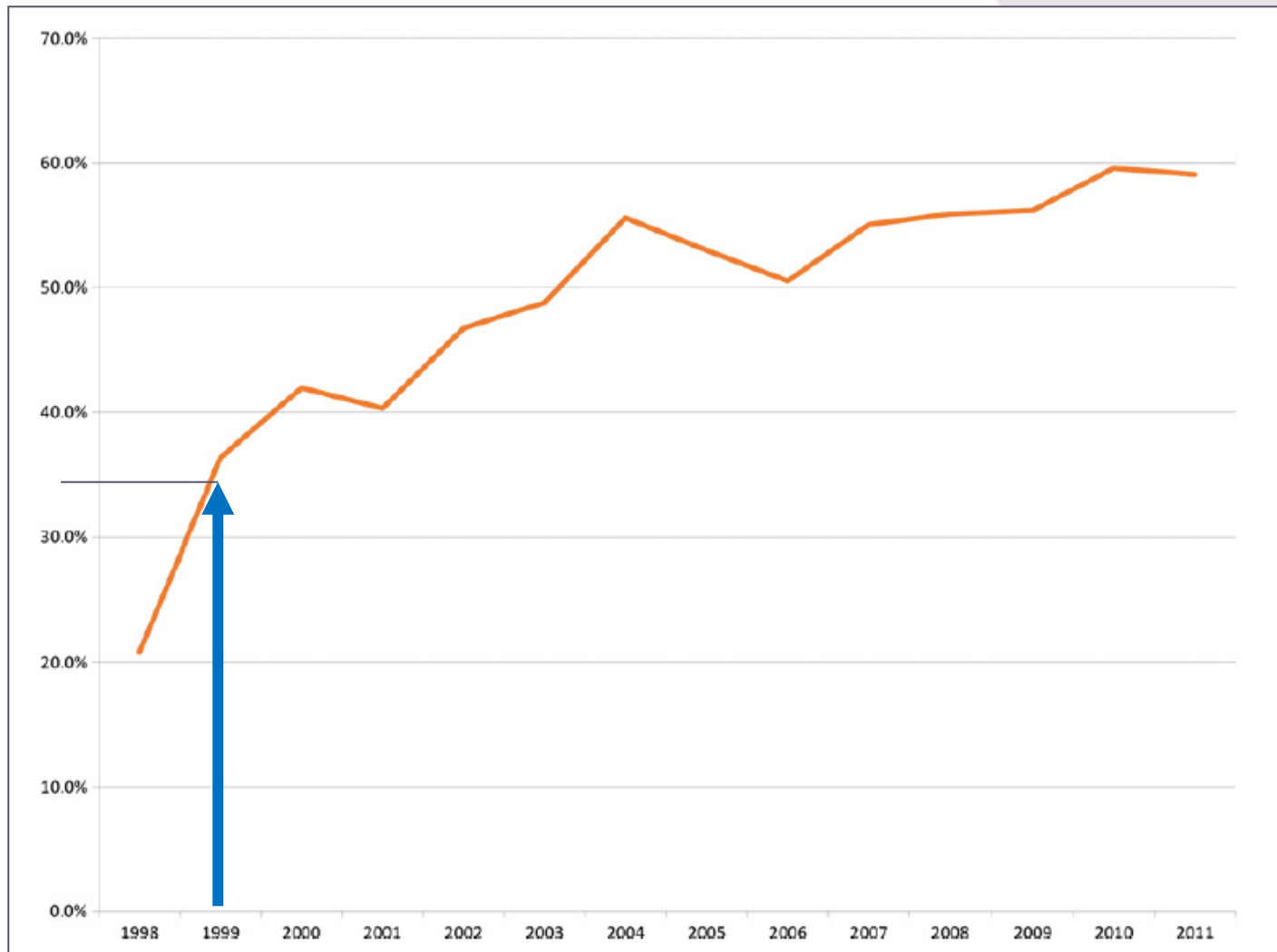
Radiothérapie ± chimiothérapie



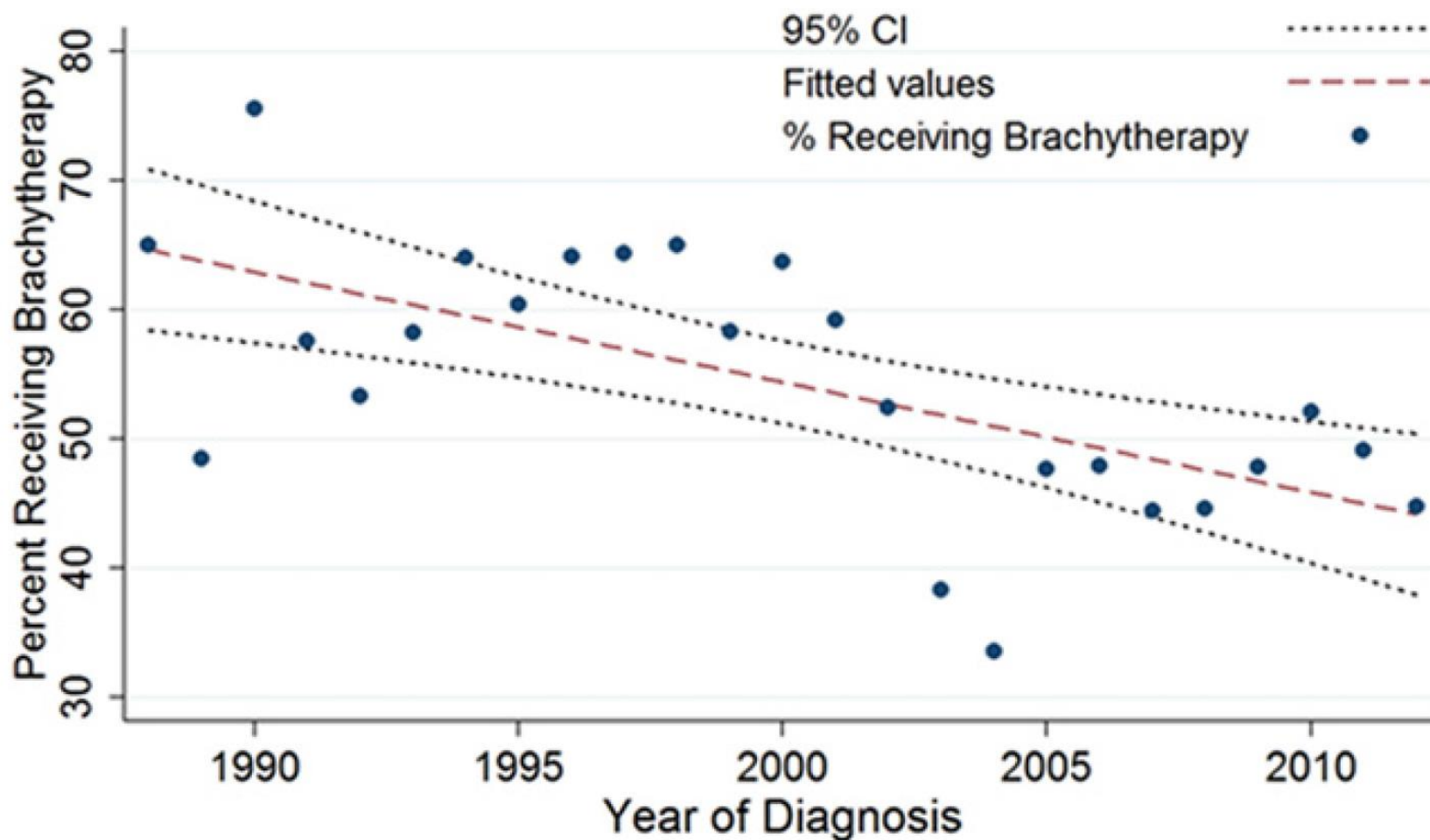
SG-5 ans: +7%



Utilisation de la chimiothérapie



Curiethérapie en complément de la RT



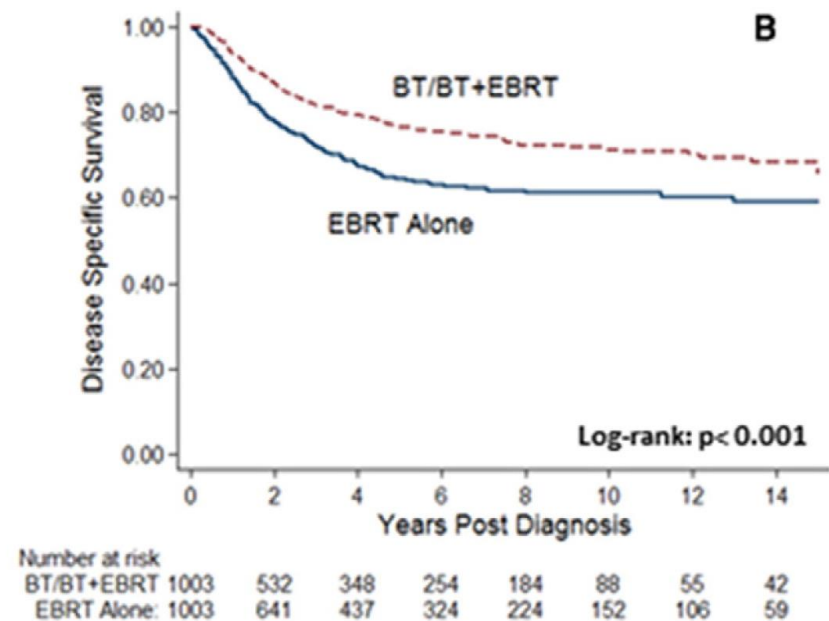
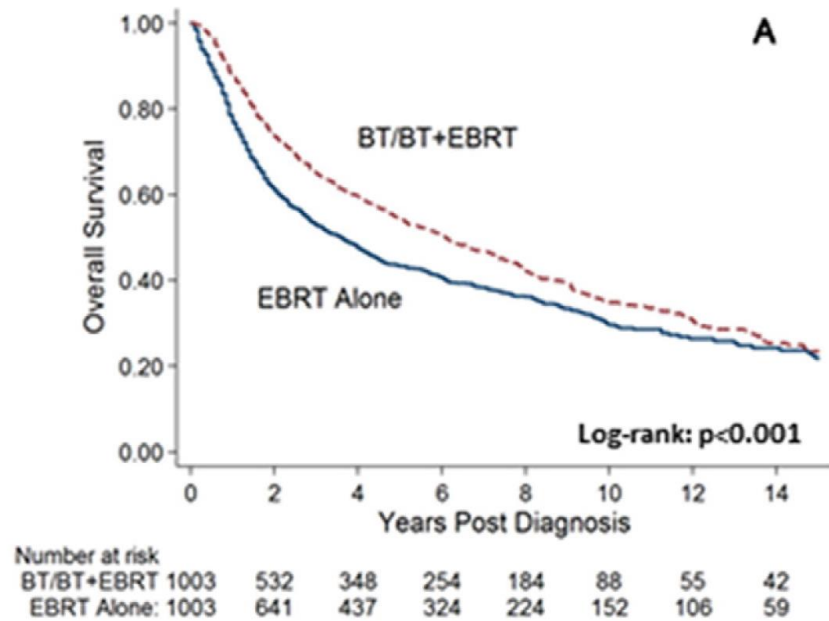


Table 2

Univariate and multivariate logistic regression of factors predicting for receipt of brachytherapy.

Factor	Univariate		Multivariate	
	aOR (95% CI)	P-value	aOR (95% CI)	P-value
<i>Age Group</i>				
<55	1		1	
55 to 65	0.81 (0.64–1.03)		0.81 (0.64–1.03)	
Older Than 65	0.67 (0.55–0.83)	<0.001	0.67 (0.55–0.83)	<0.001
<i>Race</i>				
White	1		1	
Black	0.78 (0.63–0.98)	0.03	0.81 (0.65–1.02)	
Other	1.14 (0.84–1.56)		1.14 (0.83–1.57)	
<i>Insurance</i>				
Insured	1		1	
Medicaid	0.81 (0.57–1.17)		0.83 (0.57–1.20)	
Uninsured	1.16 (0.50–2.66)		0.91 (0.38–2.15)	
Unknown	1.21 (1.02–1.45)	0.031	1.19 (0.99–1.42)	
<i>Grade</i>				
Grade I	1		1	
Grade II	1.00 (0.73–1.38)		1.01 (0.73–1.41)	
Grade III	0.97 (0.70–1.33)		1.03 (0.74–1.43)	
Grade IV	0.70 (0.40–1.22)		0.78 (0.44–1.40)	
Unknown	0.93 (0.67–1.28)		0.95 (0.68–1.34)	
<i>Histology</i>				
SCC	1		1	
Adenocarcinoma	0.94 (0.75–1.19)		0.90 (0.71–1.15)	
Melanoma	0.67 (0.33–1.33)		0.61 (0.30–1.27)	
Other	0.74 (0.57–0.96)	0.02	0.73 (0.55–0.96)	0.022
<i>Tumor Size</i>				
≤2 cm	1		1	
2.1 cm and <5 cm	0.71 (0.55–0.91)	0.007	0.84 (0.64–1.09)	
>5 cm	0.42 (0.31–0.57)	<0.001	0.63 (0.45–0.87)	0.005
Unknown	0.63 (0.49–0.80)	<0.001	0.72 (0.56–0.94)	0.015
<i>FIGO Stage</i>				
I	1		1	
II	0.81 (0.68–0.98)	0.027	0.82 (0.68–0.99)	0.040
III	0.46 (0.37–0.58)	<0.001	0.51 (0.40–0.65)	<0.001
IVA	0.27 (0.19–0.38)	<0.001	0.30 (0.21–0.43)	<0.001

Abbreviations: aOR – adjusted odds ratio; CI – confidence interval; SCC – squamous cell carcinoma; FIGO – International Federation of Gynecology and Obstetrics.

Multivariate analysis: Survival

Impact on survival	HR death (95% CI)
Stage	1.53 (1.43-1.63)
No Brachytherapy	1.35 (1.18-1.54)
No Chemotherapy	1.29 (1.13-1.47)
Comorbidity	1.28 (1.13-1.45)
Non-SQCC	1.26 (1.1.0-1.46)
Facility volume	1.06 (1.00-1.12)
Age	1.02 81.02-1.03)

Apport de l'imagerie

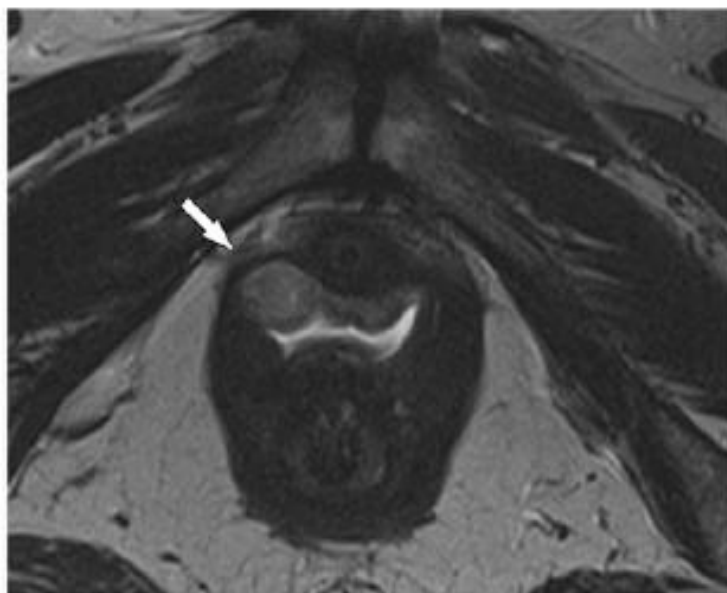
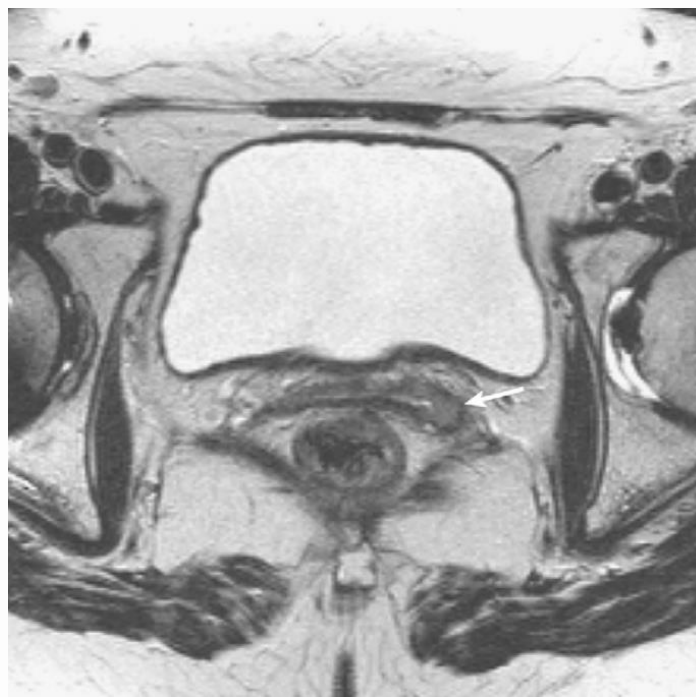


Vagina Task Force

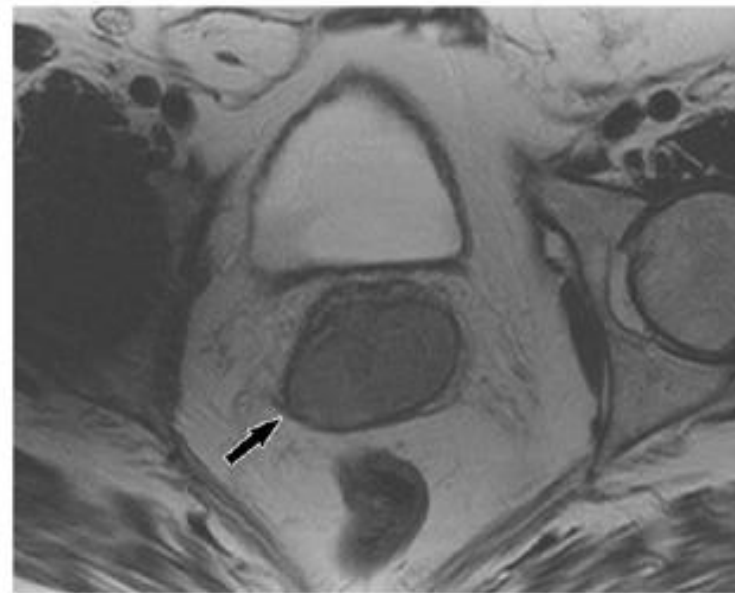




Stade I

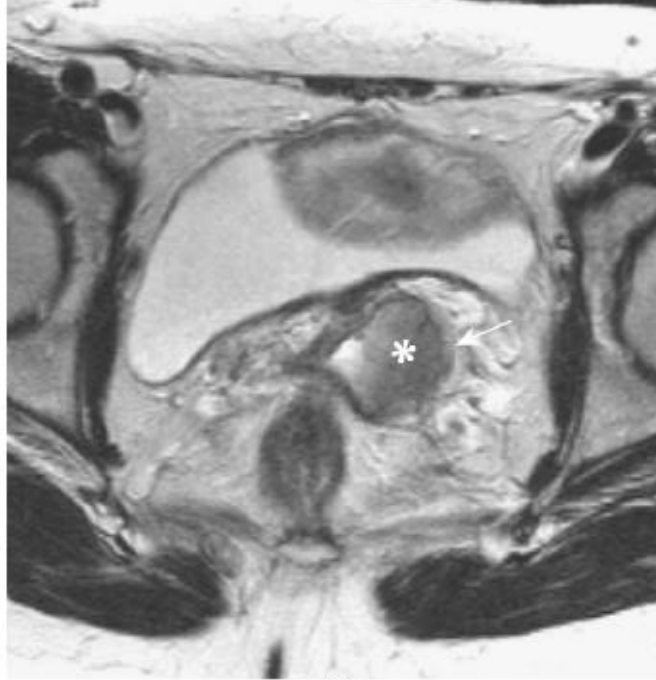


(a)

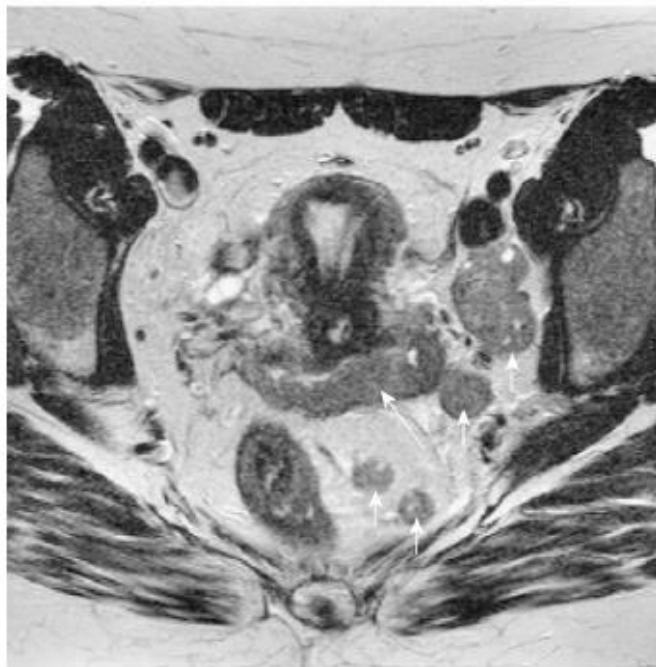


(b)

Stade II



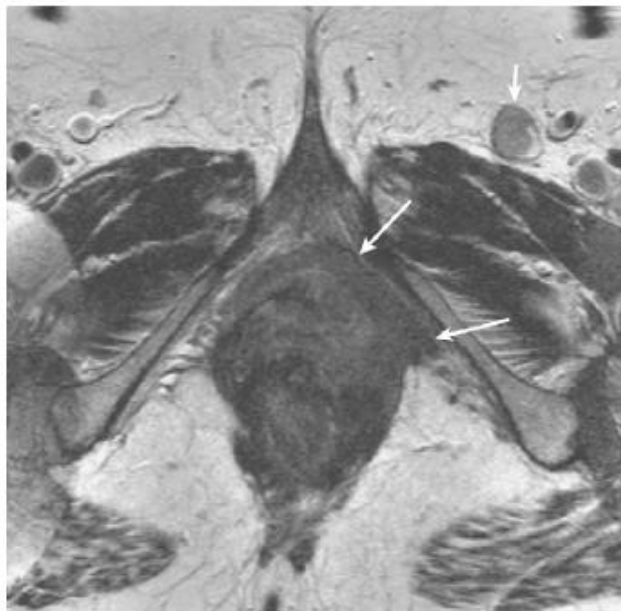
(a)



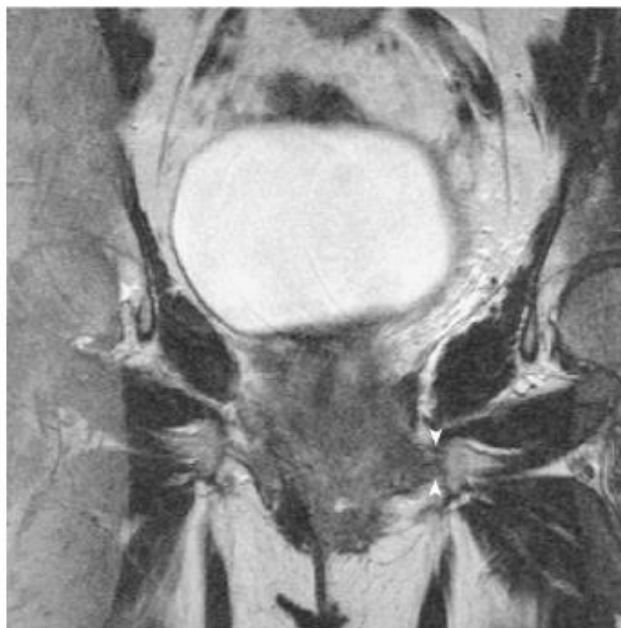
(b)

Stage	Description
Stage I	Preservation of low-signal vaginal wall on T_2 weighted images (axial ^a)
Stage II	Disruption of low-signal vaginal wall on T_2 weighted images (axial ^a); extension into the parametrial fat on T_1 or T_2 weighted images (axial ^a)
Stage III	Extension to pelvic sidewall; abnormally high signal of the musculature on T_2 weighted images
Stage IV	Extension beyond the true pelvis or bladder and/or rectal involvement
IVA	–Extension beyond the pelvis or bladder or rectal invasion; disruption of the low-signal bladder or rectal wall on T_2 weighted images or abnormal enhancement on contrast-enhanced T_1 weighted images with fat suppression
IVB	–Distant organ metastases (lungs and liver)

Stade III



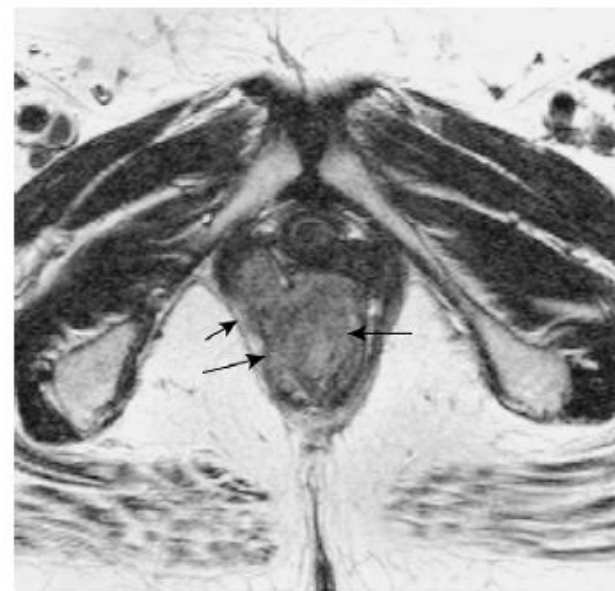
(a)



Stade IV



(a)



(a)

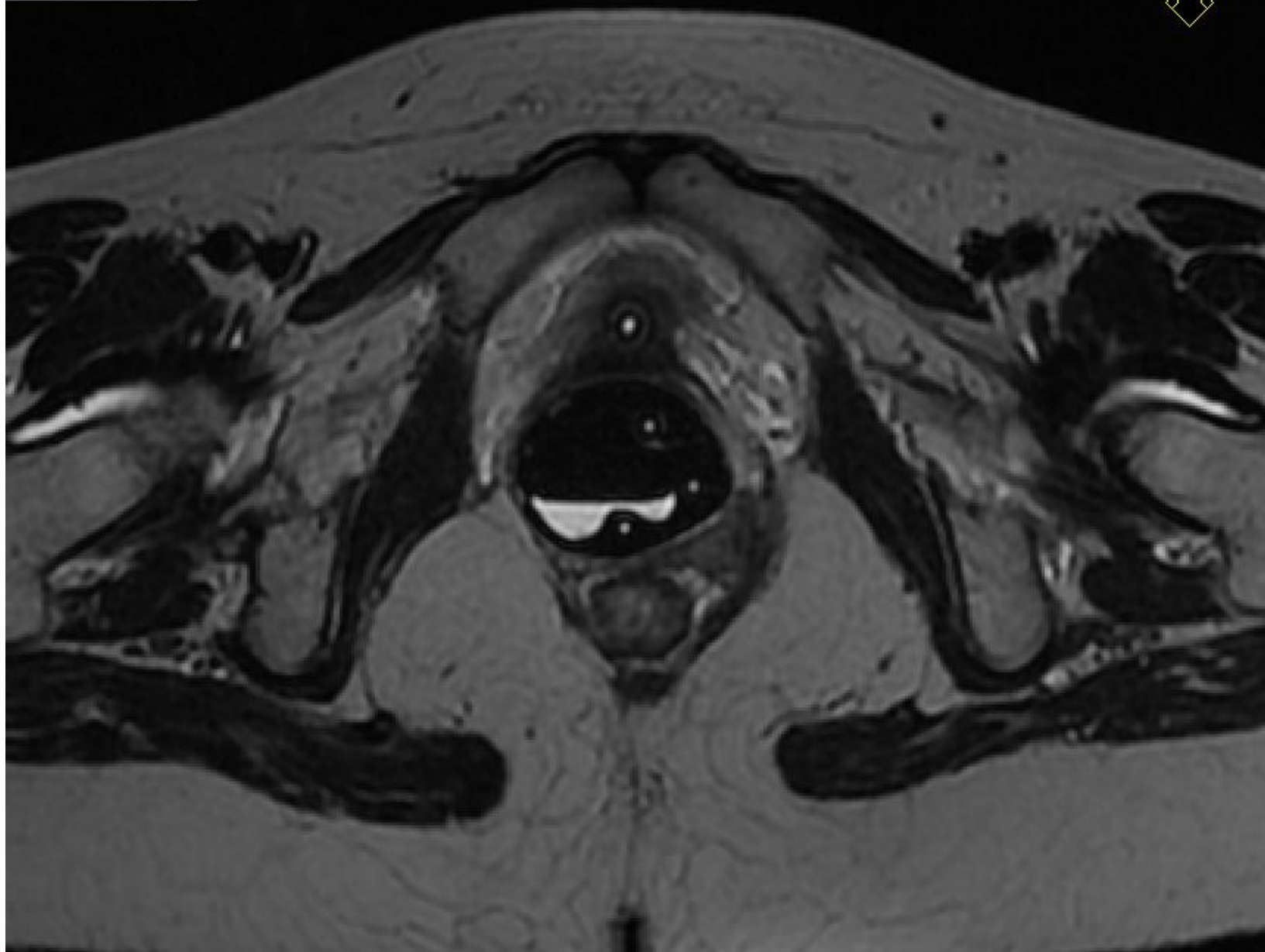


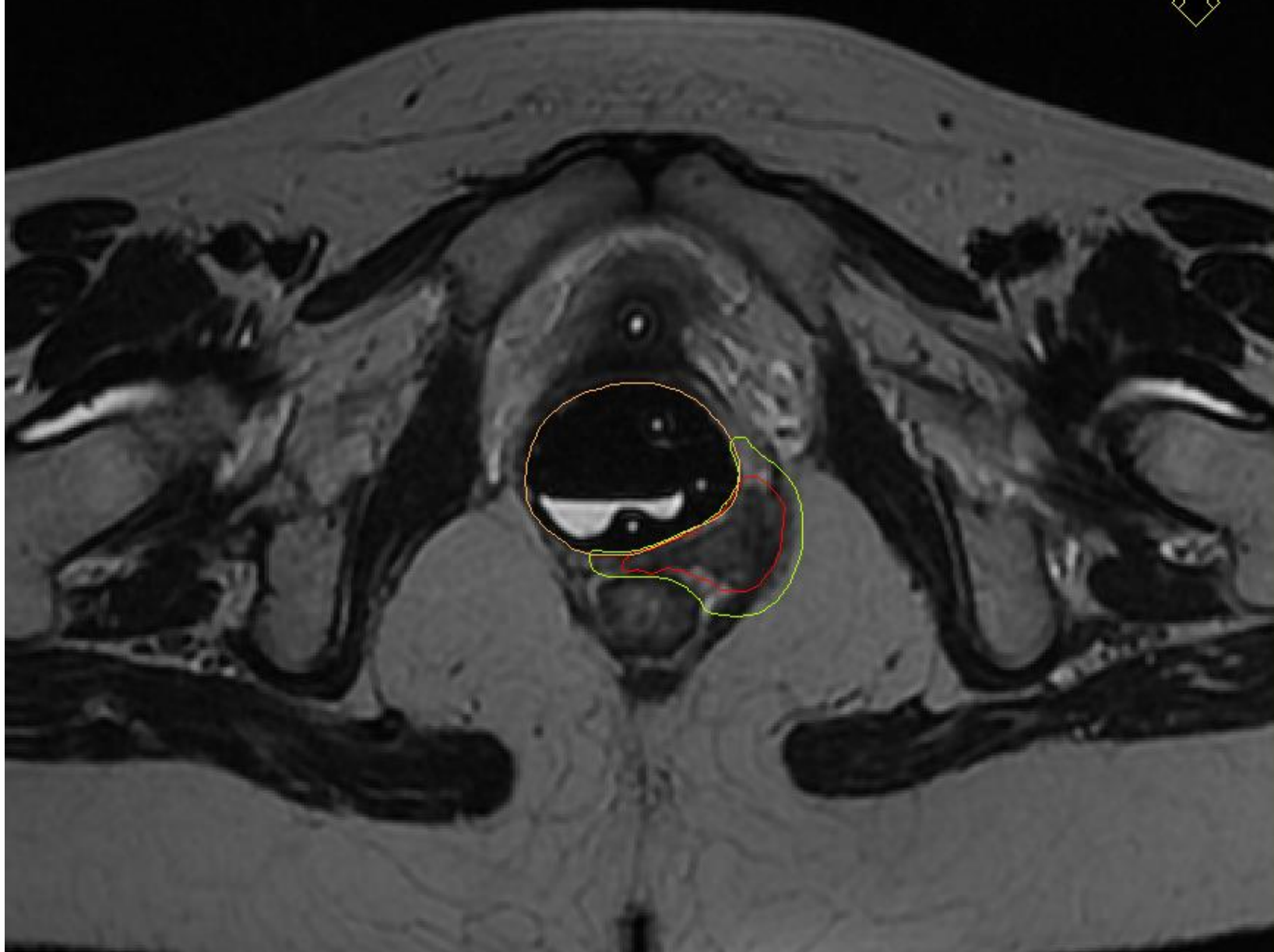
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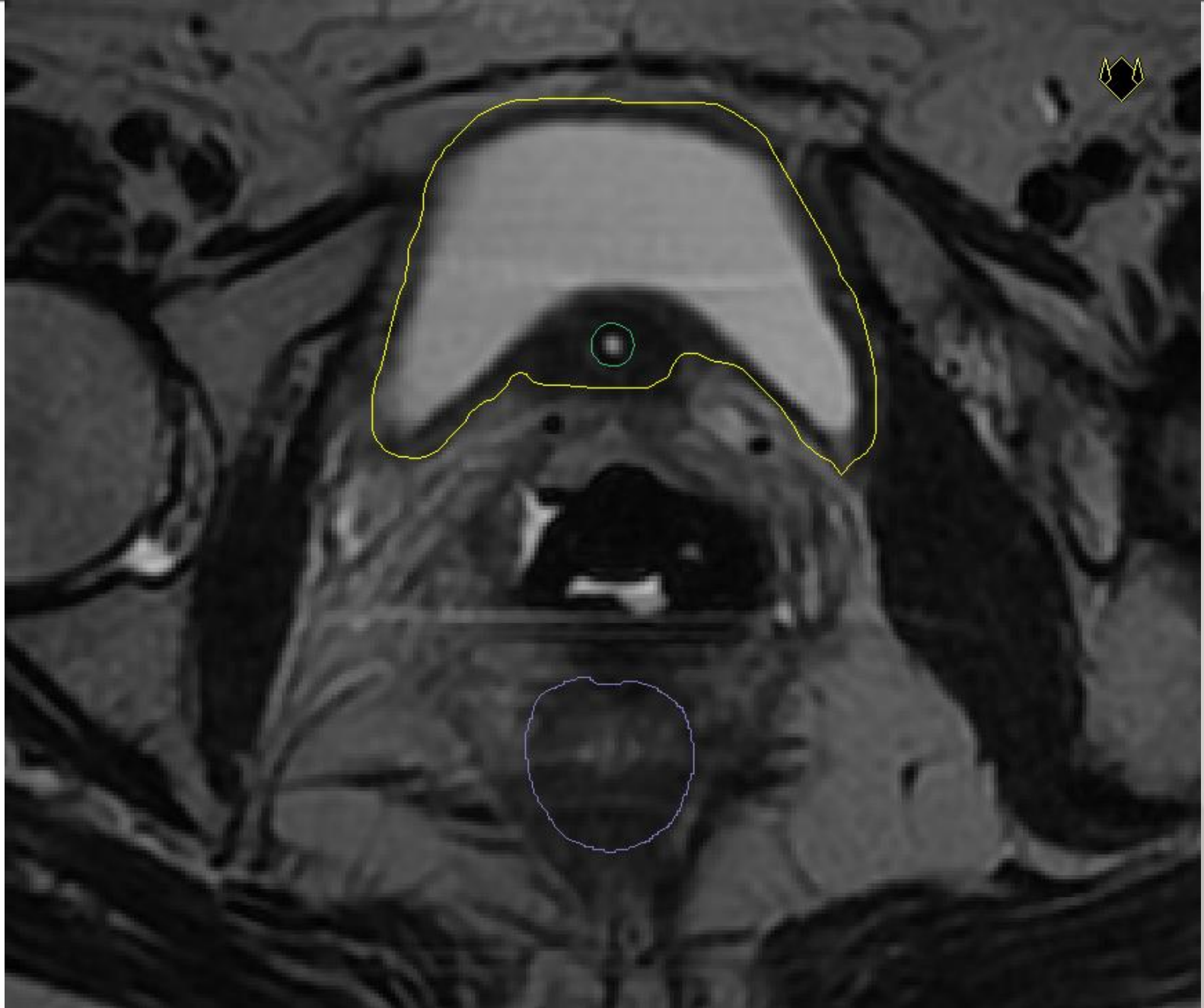


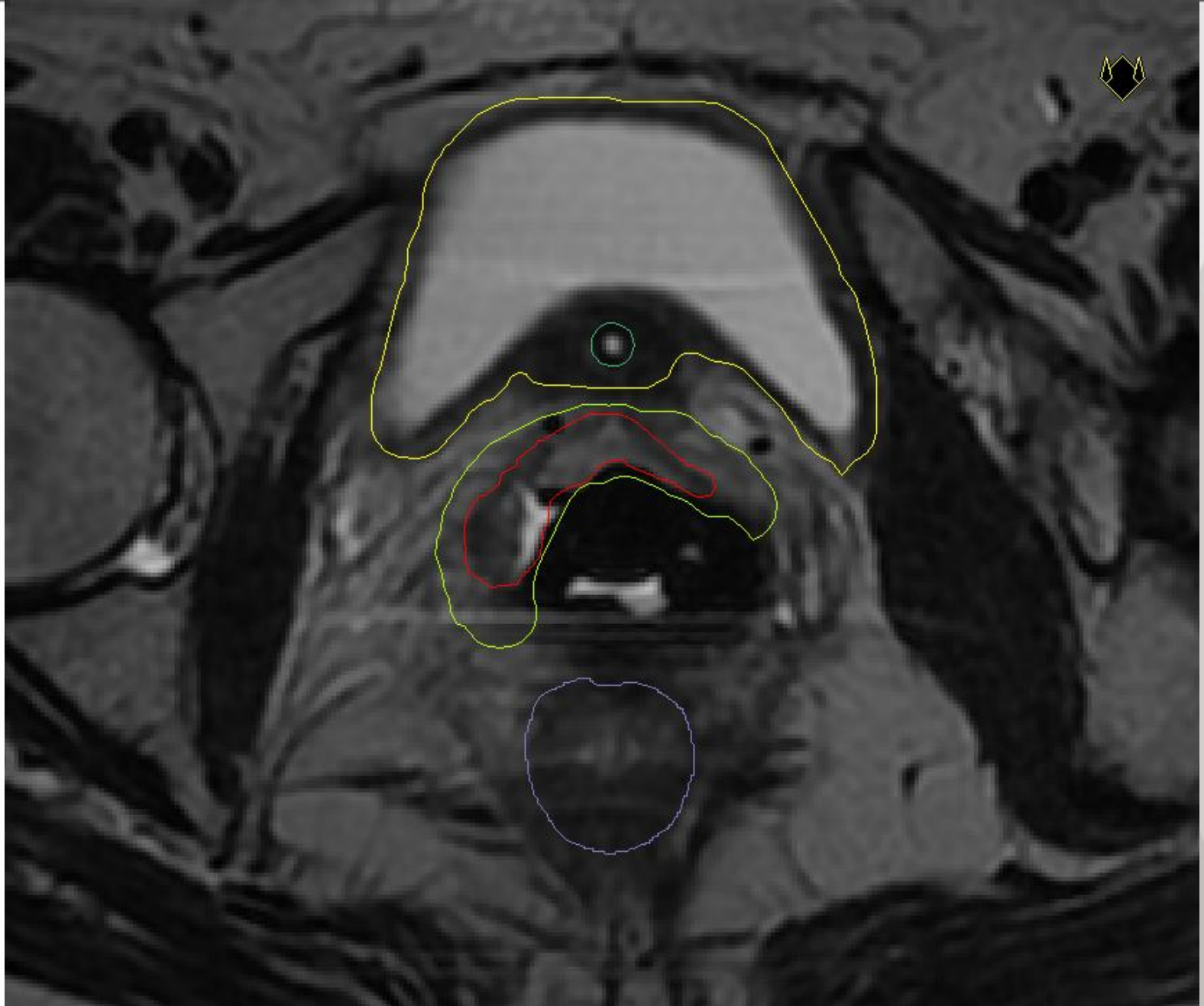
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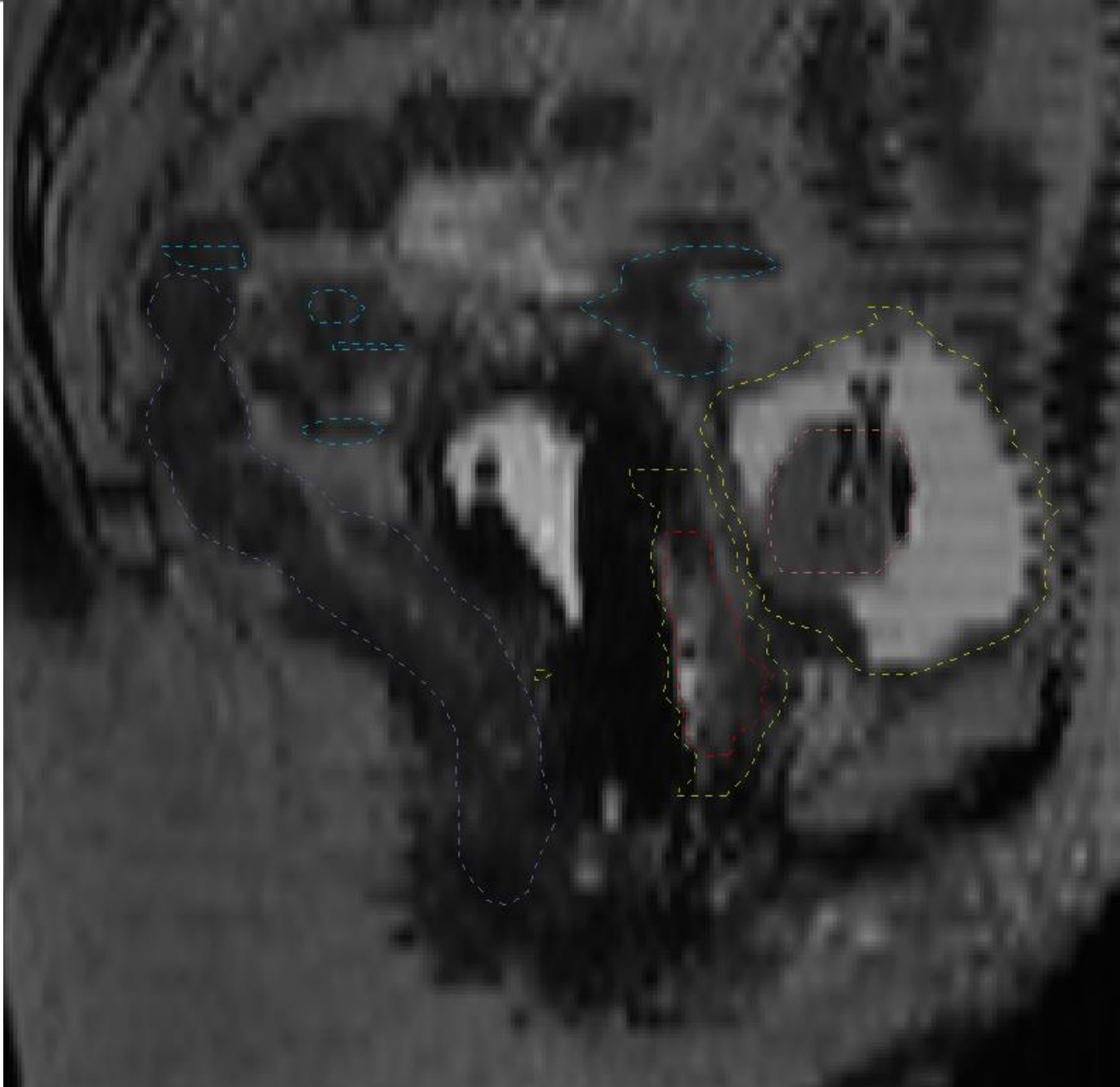
Délimitation de cibles ?

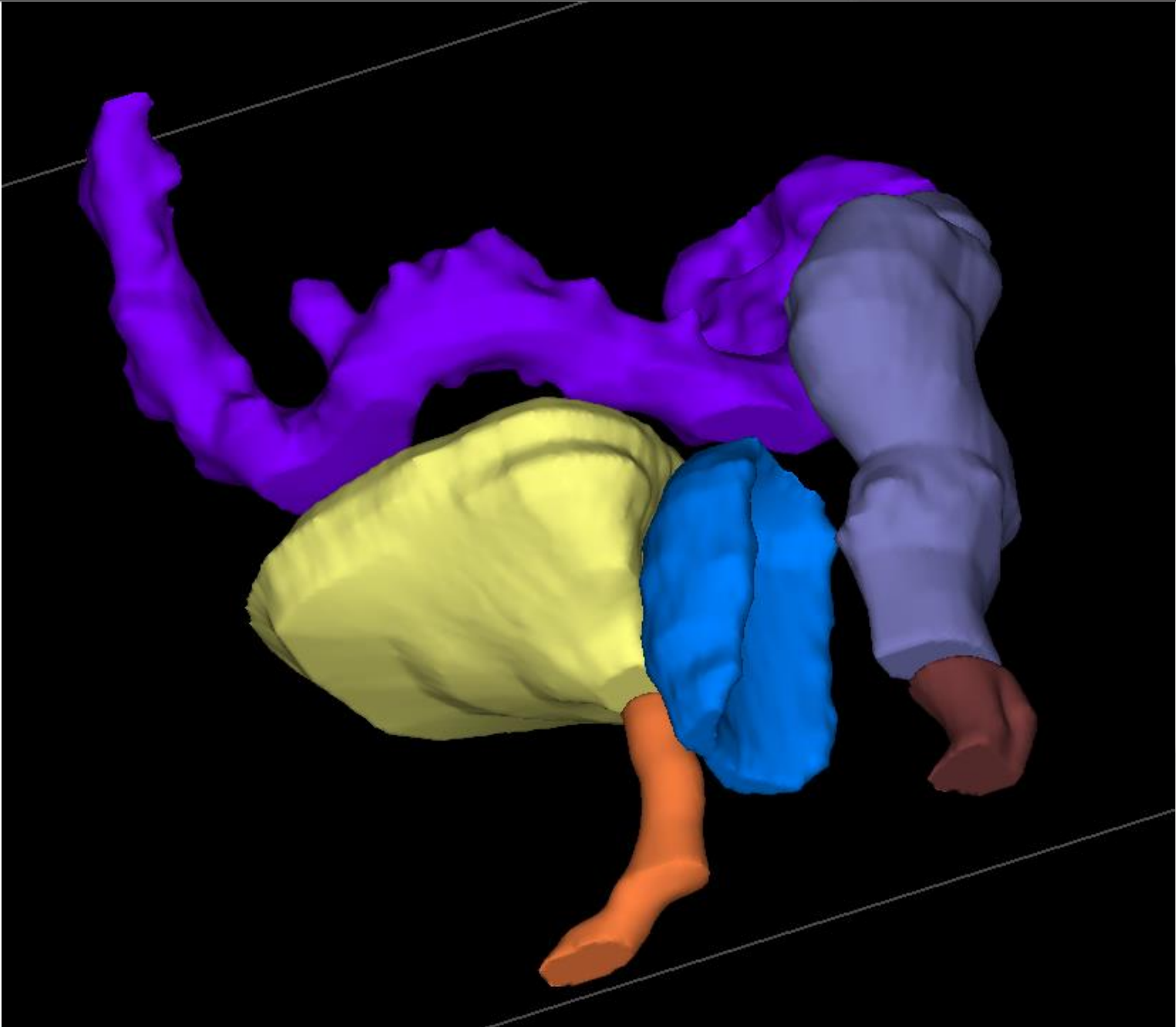












Curiethérapie guidée par l'image

Auteur	Année	Débit	App	n	D90 CTVHR	Local / pelv	Tox Vag	Tox U	Tox Dig
Dimopoulos	2012	PDR/ HDR	IS	13	86 Gy	92%-3y	15%	8%	0%
Beriwal	2012	HDR	IS	17	74 Gy	76%	7%	0%	0%
Fokdal	2013	PDR	IS / IC	22	82 Gy	86%-2y	14%	5%	0%
Vargo	2015	HDR	IS	10	77 Gy	75%-2y	0%	0%	4%

Moy: 85% (75-92%)

Etude Multicentrique IGABT

Centre	Nbre (%)
Aarhus	22 (27%)
Vienne	31 (38%)
IGR	14 (17%)
Amsterdam (AMC)	7 (8%)
Leiden	8 (10%)

Total: 82

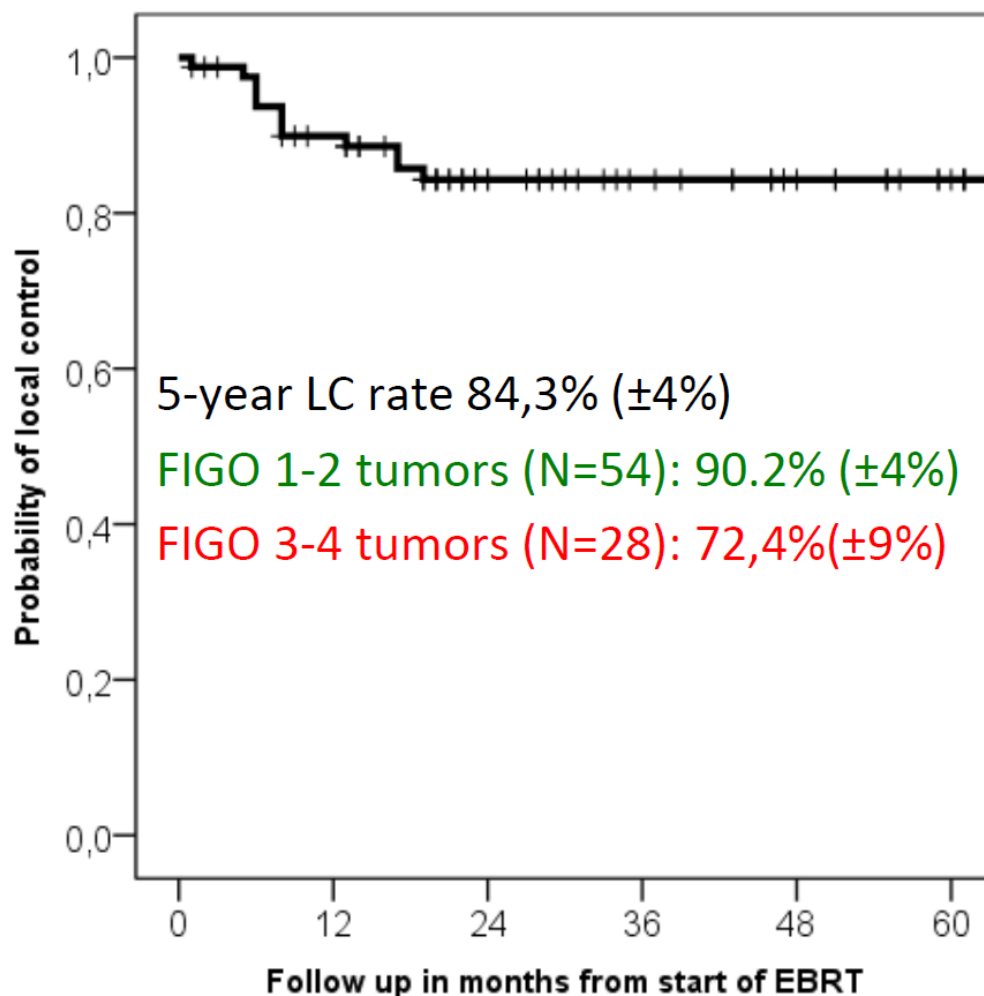
Median age (years)		67 (23-87)
Previous surgery (%)		68
Chronical disease (%)		43
PS	0-1 (%)	98
	2 (%)	2
SQ carcinoma (%)		95
LN metastases (%)		31
FIGO 1	T1,N0,M0	15%
2	T2,N0,M0	52%
3	T3,anyN,M0 or	23%
4	T3-4,anyN,M0	10%
Follow up (months)		29 (1-143)

EBRT technique: IMRT (%)	29
3D conformal (%)	71
Dose EBRT (Gy)	45 (40-50)
Included LN: Pelvic (%)	70
Pelvic + inguinal (%)	30
Chemotherapy (%)	60
Dose rate: PDR (%)	77
HDR (%)	23
BT technique: IC (%)	36
IC/IS (%)	64
Imaging for BT: MRI (%)	23
CT (%)	52
CT + MRI preplan (%)	23

Doses (EQD2)

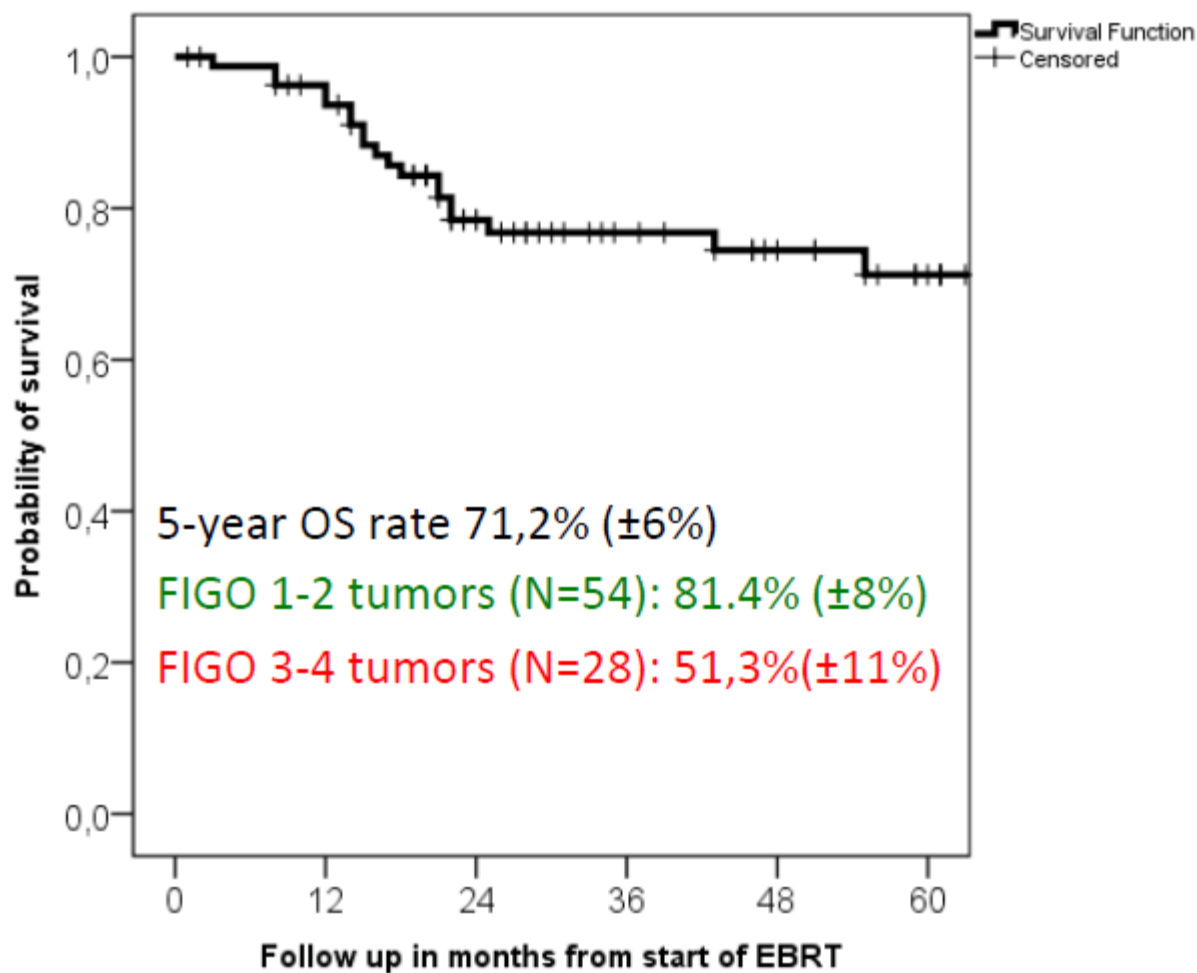
Volume	Dose EQD2 (Gy)
CTV volume (cm ³)	19,7 (0-64)
CTV	80,6 (54,2-109,8)
Vessie D _{2cm3}	67,7 (46,5-128,6)
Rectum D _{2cm3}	65,9 (43,2-83,2)
Sigmoïde D _{2cm3}	51,0 (43,2-74,2)

Résultats – 12 rechutes locales



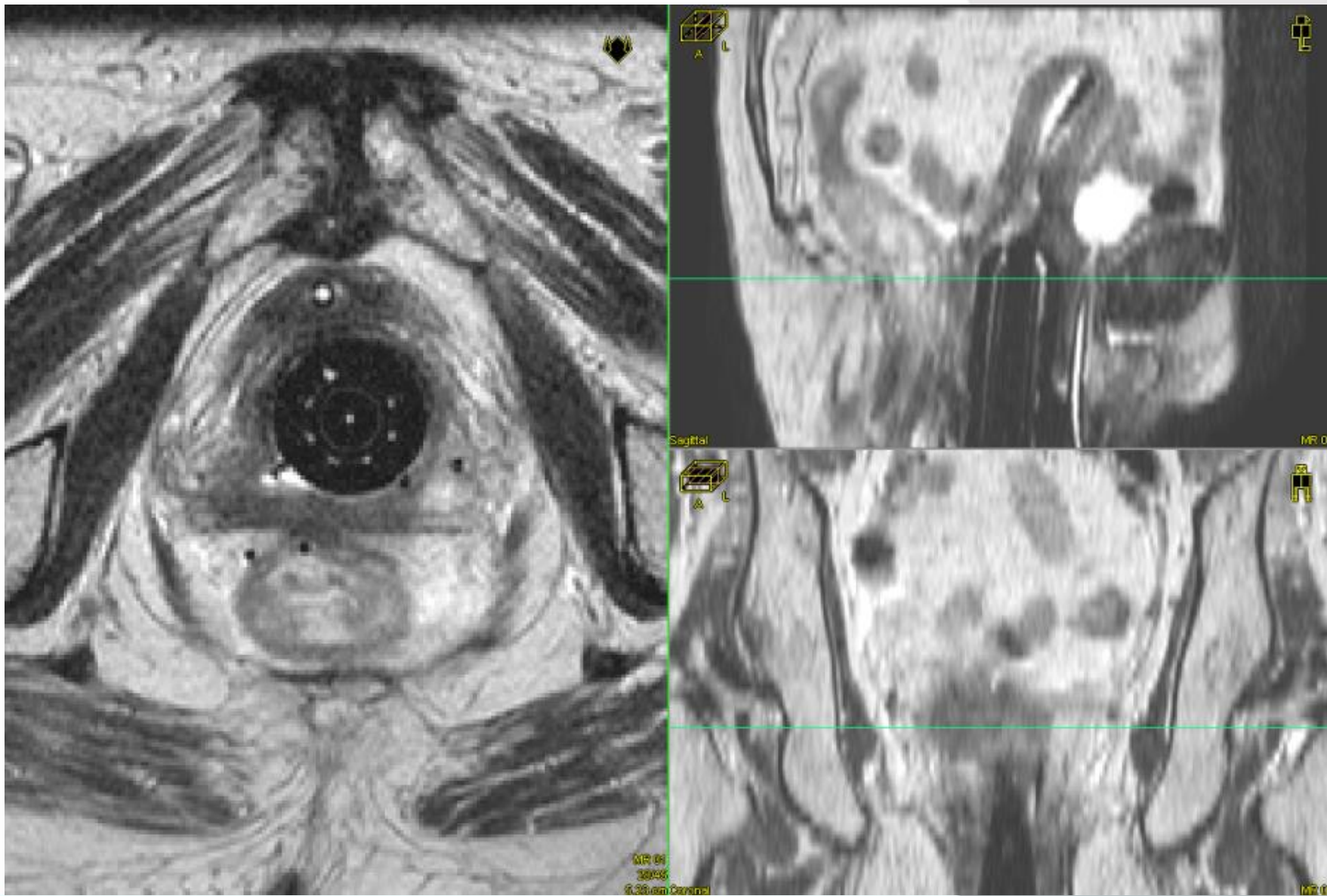
#	FIGO-stage	VOL HRCTV (ccm)	D90 HRCTV (GY)
1	4	49.5	87.6
2	3	28.0	89.5
3	3	42.5	84.9
4	3	64.0	83.1
5	3	17.2	85.6
6	3	NA	75.6
7	3	6.0	74.5
8	2	22.2	76.6
9	2	34.1	71.4
10	2	9.8	70.9
11	1	NA	71.1
12	1	9.2	82.4
Median values		19.7 ccm	80.6 Gy

Survie Globale – 19 décès

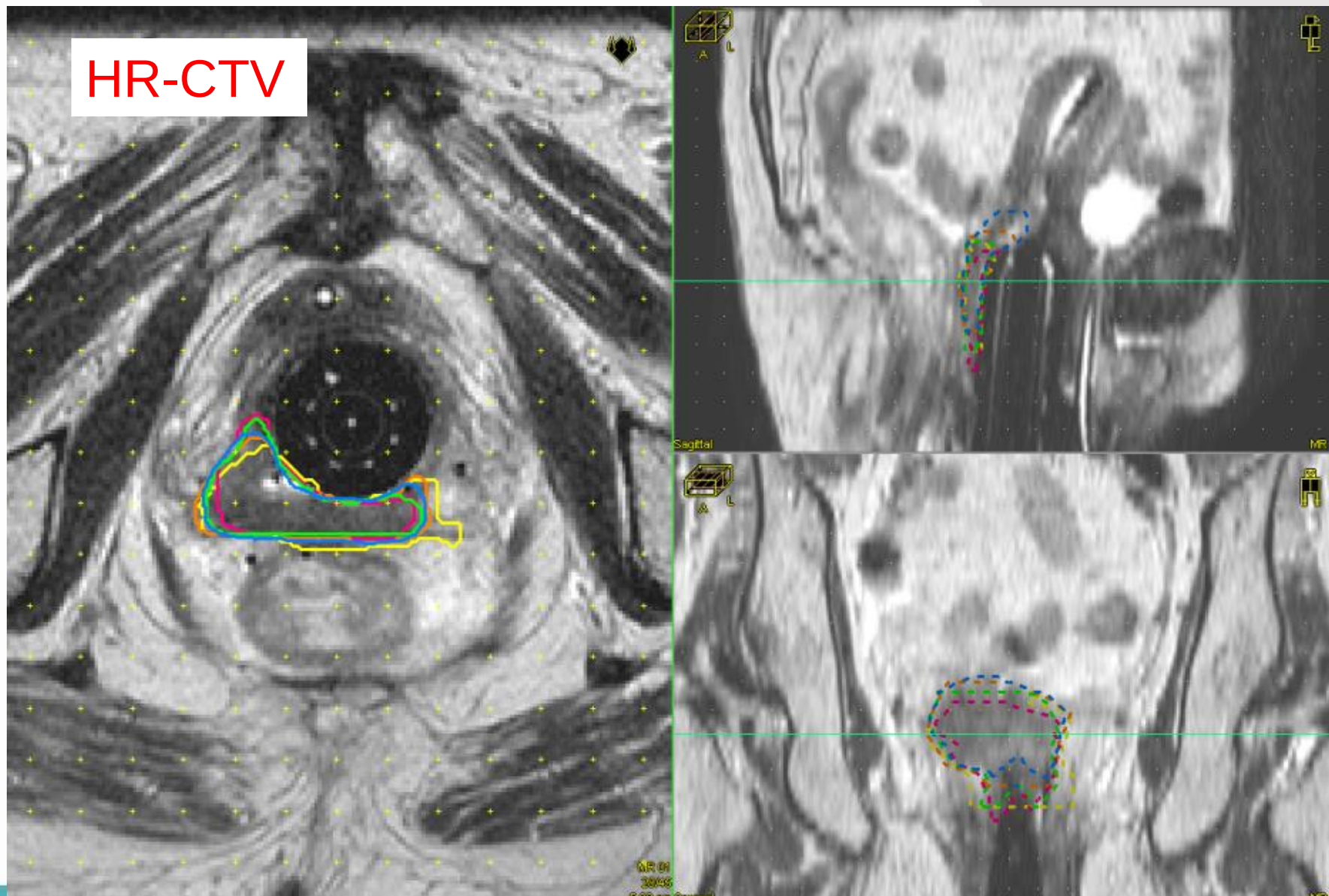


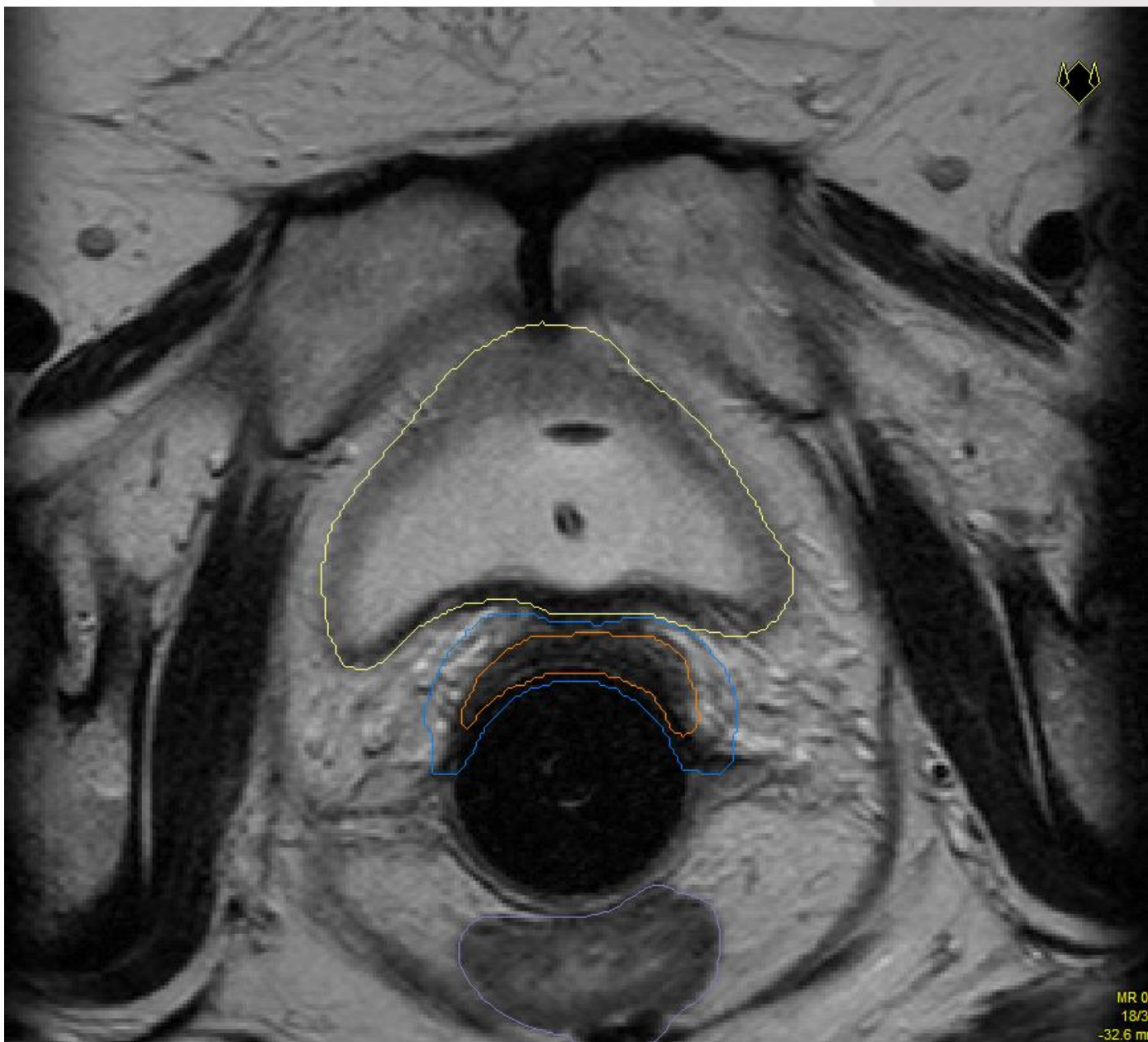
Morbidité – CTC 3.0

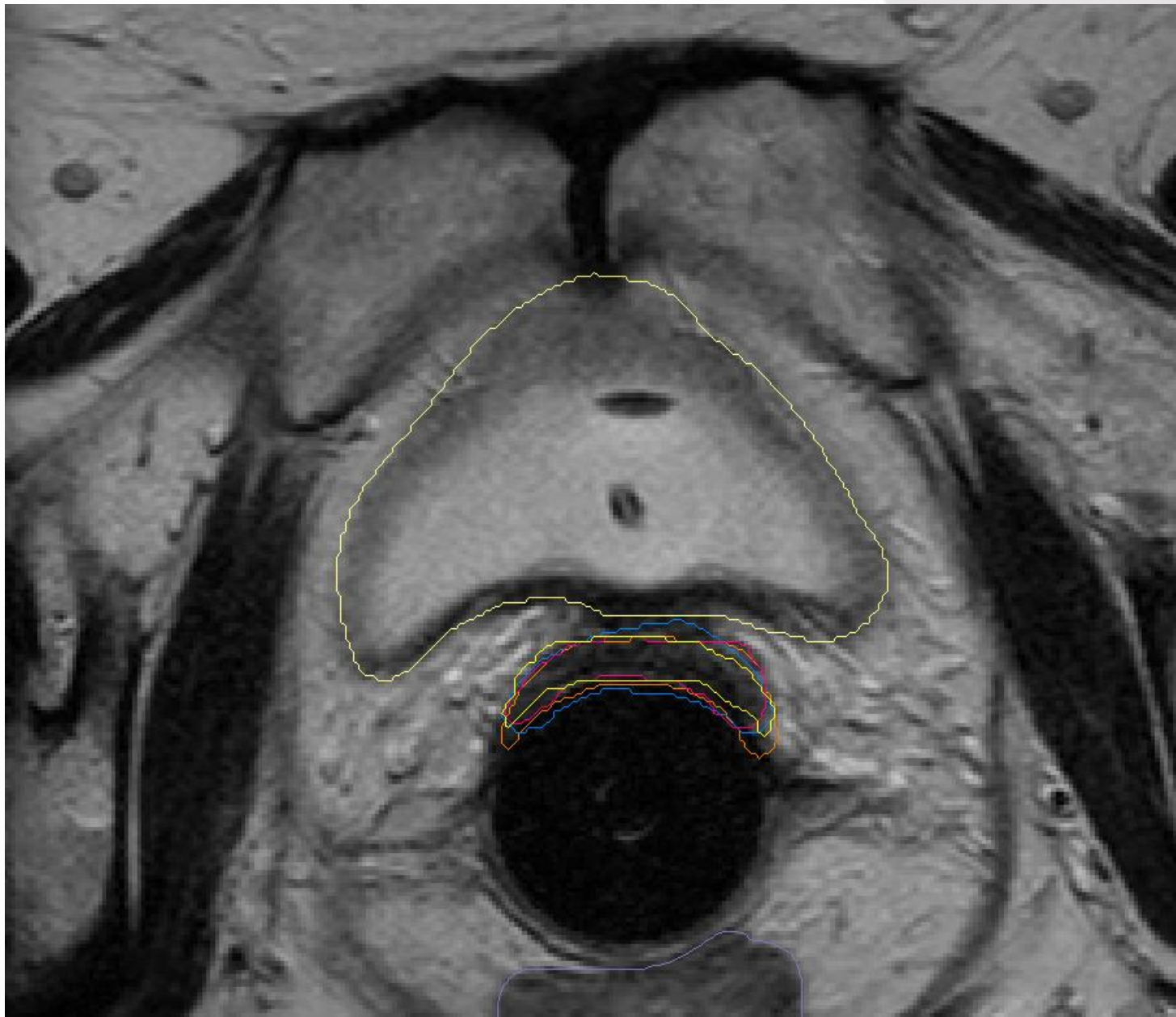
Grade	Bladder	GI	Vagina	Bladder + GI
G0	67.9%	62.4%	50.6%	50.6%
G1	13.1%	21.2%	17.6%	17.6%
G2	10.7%	14.1%	21.2%	22.4%
G3	7.1%	2.4%	10.6%	8.2%
G4	1.2%	0%	0%	1.2%



Vers des recommandations...

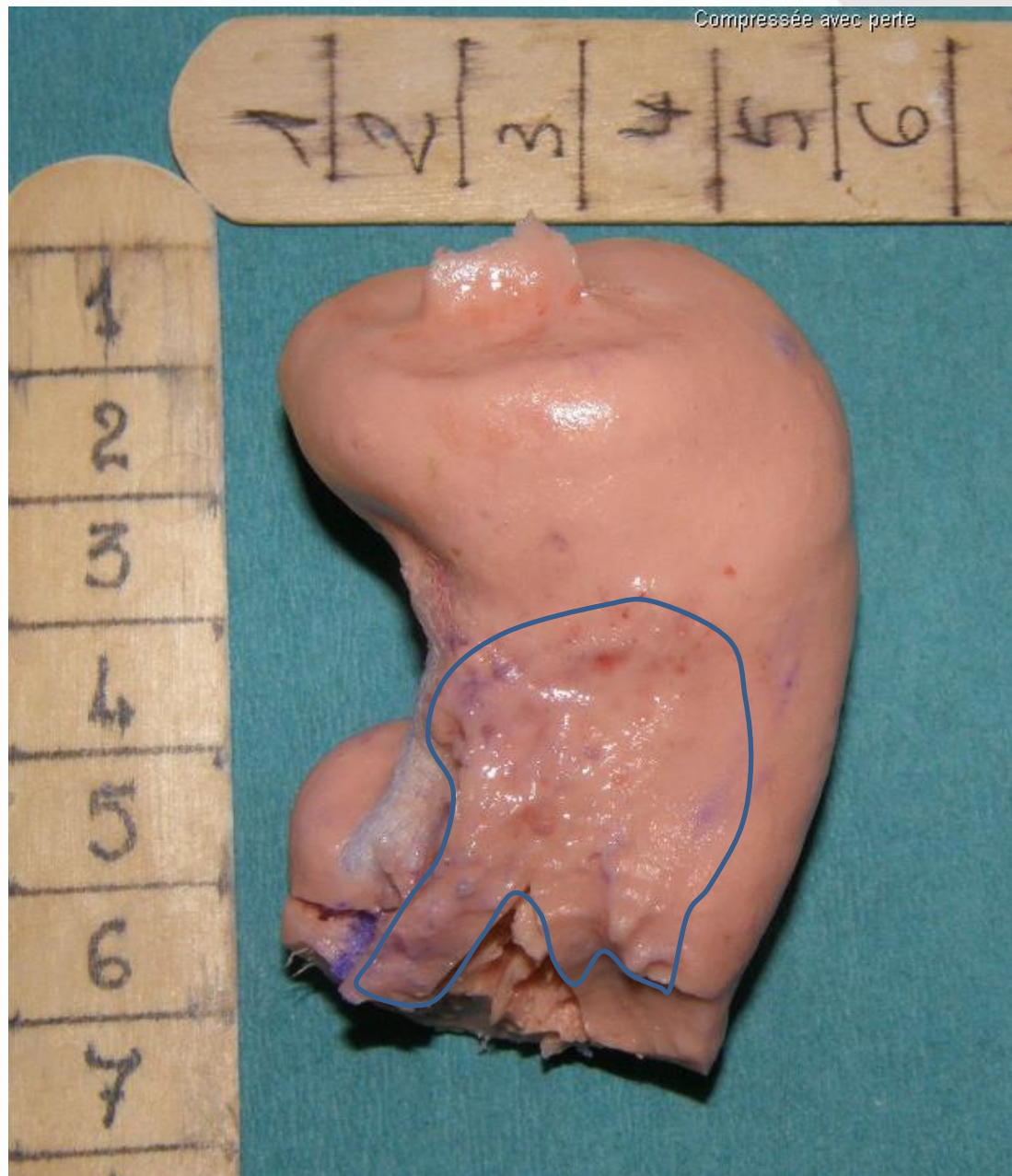




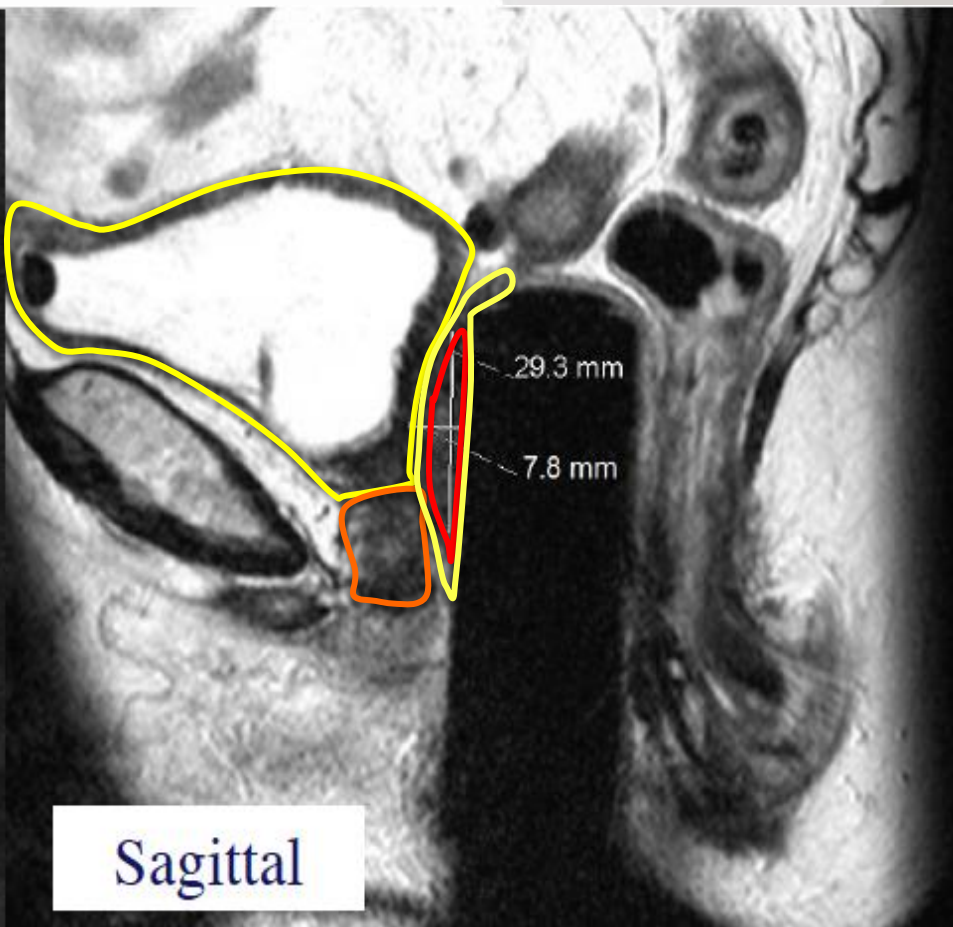
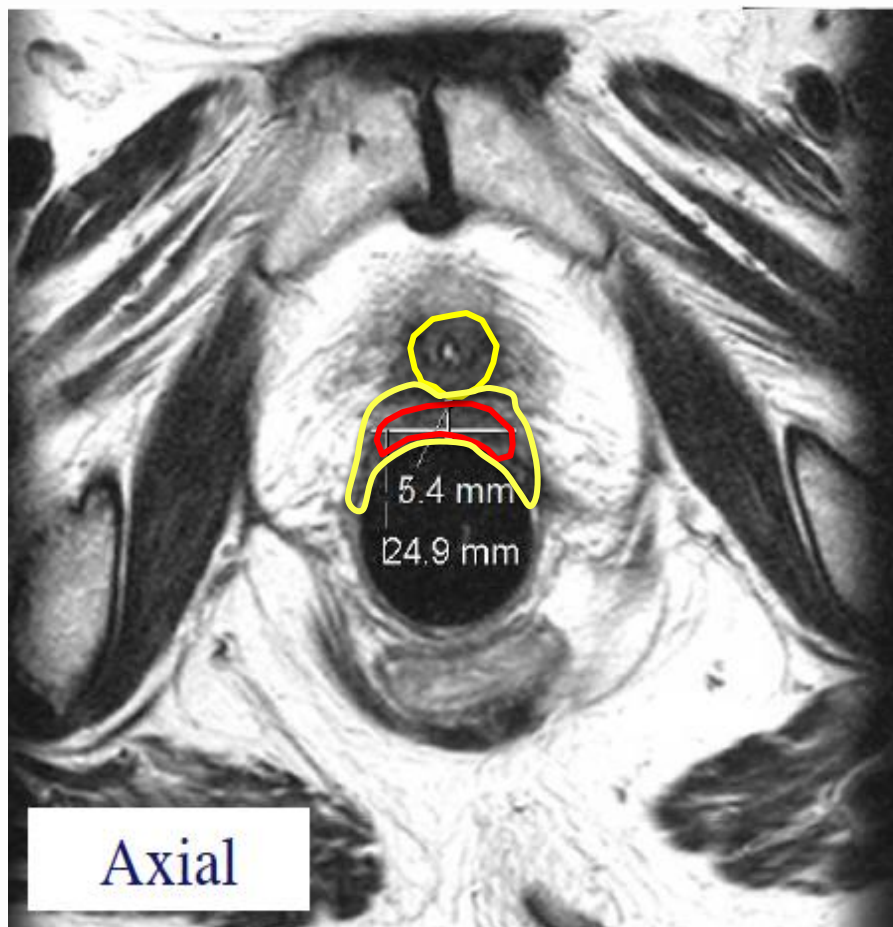


Leçons...

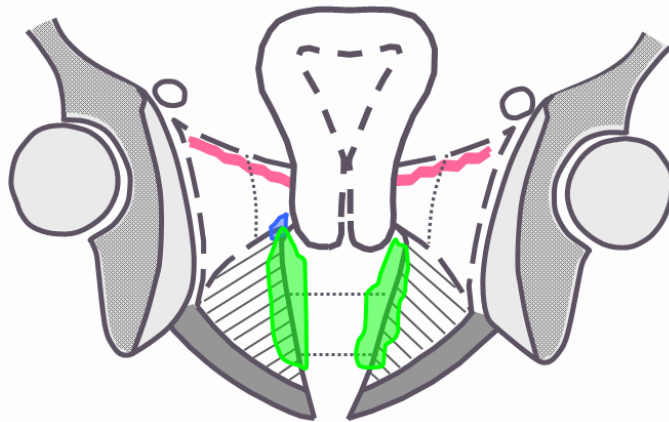
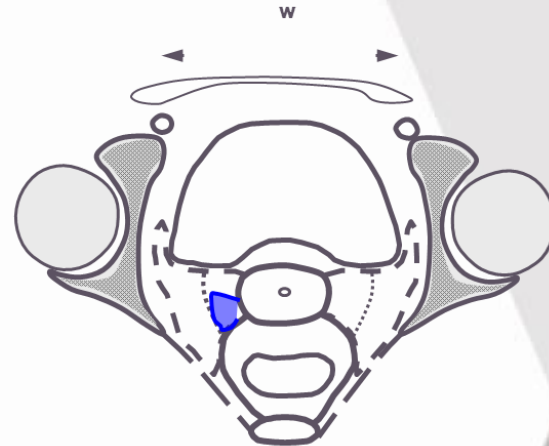
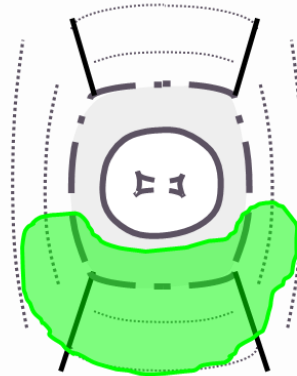
- **Lésions superficielles non visibles**
- **Applicateurs déforment la lésion**
- **Schémas habituels non adaptés**







$w = 4.0 \text{ cm}$
 $h = 5.0 \text{ cm}$
 $t = 1.5 \text{ cm}$



At Diagnosis ☐ At Brachytherapy ☐ EBRT ____ Gy

Maximal tumour dimensions

Clockwise involvement ____ to ____ o'clock

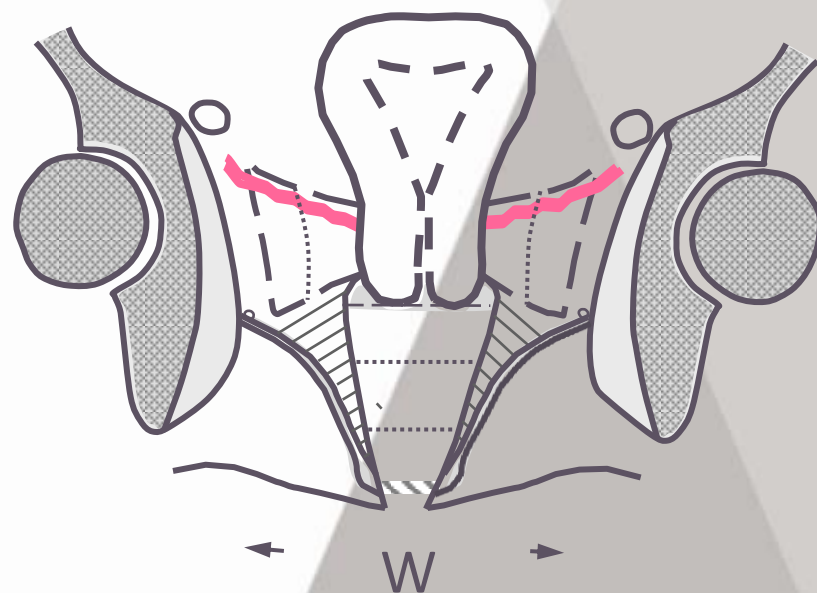
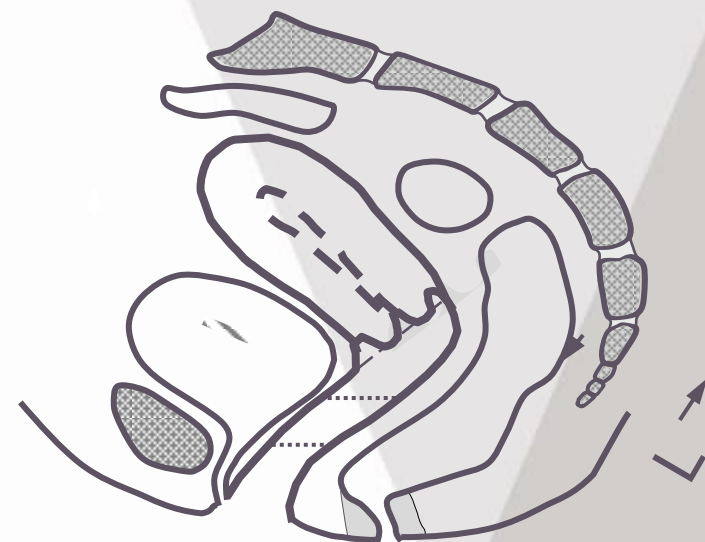
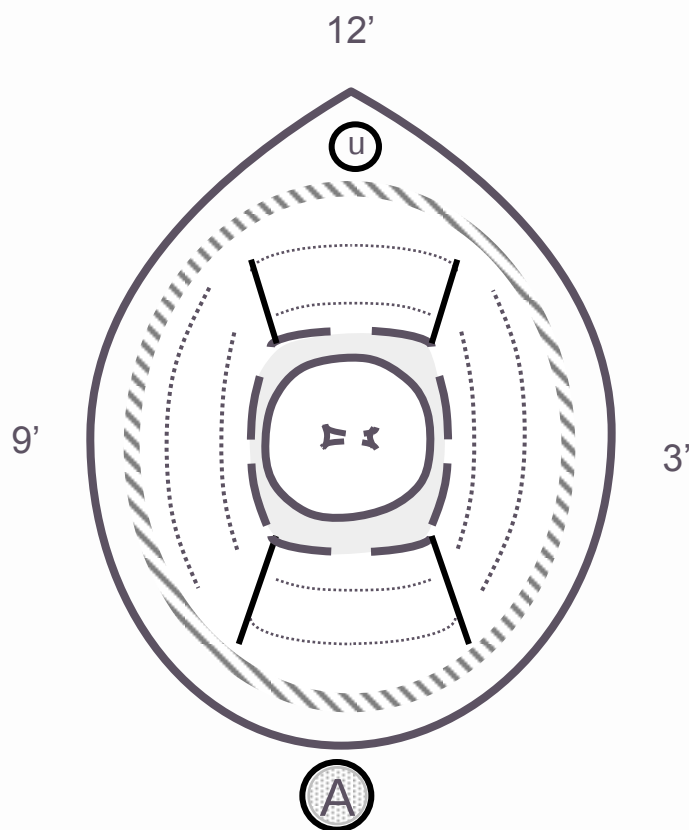
Thickness = ____ cm (perpendicular to vaginal axis)

Width = ____ cm (incl. paravaginal extension)

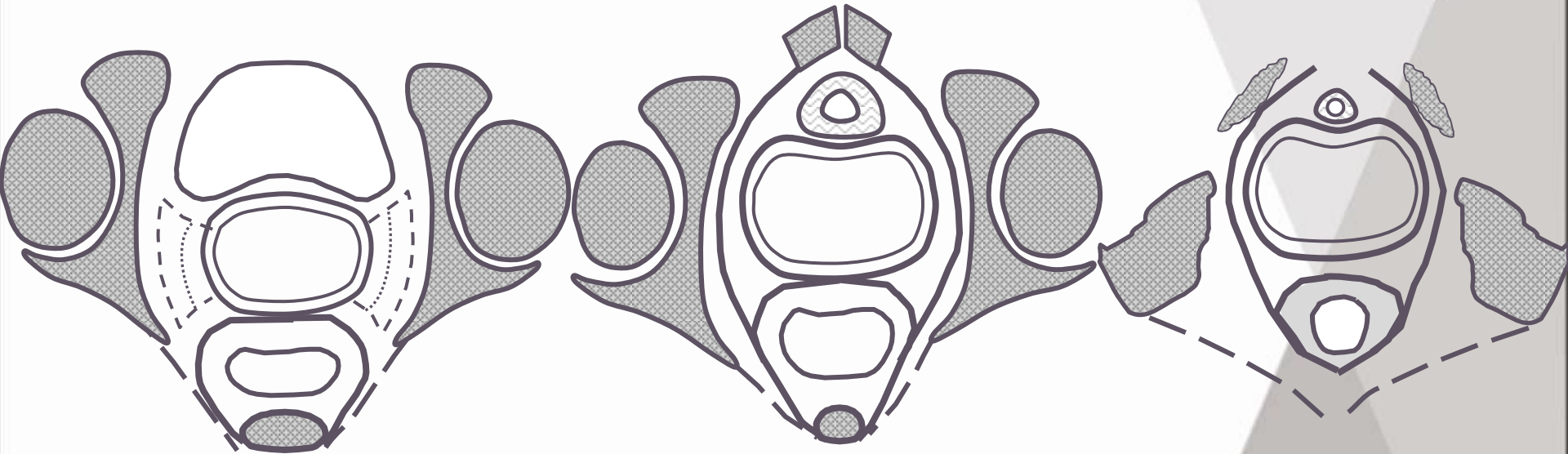
Length = ____ cm (along vaginal axis)

Proximal tumour free distance (length) = ____ cm

Distal tumour free distance (length) = ____ cm



Clinical Drawing: Vagina + intact uterus



Upper 1/3 vagina

**Middle 1/3
vagina**

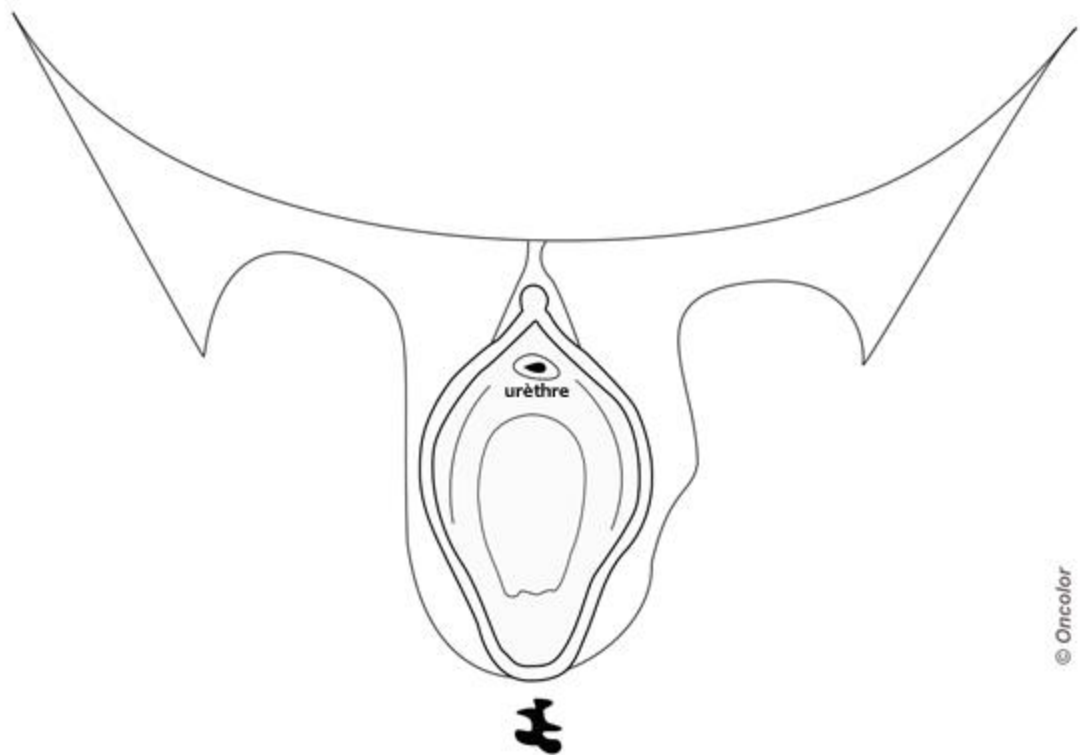
Lower 1/3 vagina

Cancer du Vagin

- **Tumeur (relativement) rare**
- **Radiochimiothérapie concomitante**
 - Totalité du vagin
 - Inguinaux si 1/3 inf
- **Curiethérapie vaginale**
 - Indispensable
 - Interstitielle si épaisseur tumeur résiduelle > 5-7 mm
 - Guidée par l'image
 - > 70 Gy

Tumeur de la vulve

- Rare : 3-5% des tumeurs génitales de la femme
- HPV
- Patiente âgée (comorbidités)
- Lichen
- **Traitement standard**
 - Classiquement Vulvectomy en « bloc »
 - Désormais: Excision large
 - > 8mm et idéalement 20



© Oncolor

Stade I	Tumeurs limitées à la vulve et au périnée Pas de métastase ganglionnaire	
Stade IA	tumeurs ≤ 2 cm limitées à la vulve ou au périnée et invasion stromale ≤ 1 mm Pas de métastase ganglionnaire	T1aN0M0
Stade IB	tumeurs >2 cm limitées à la vulve ou au périnée ou invasion stromale >1 mm Pas de métastase ganglionnaire	T1bN0M0
Stade II	Tumeur (quelque soit la taille) avec envahissement du bas urètre et/ou du vagin ou de l'anوس Pas de métastase ganglionnaire	T2N0M0
Stade III	Tumeur (quelque soit la taille) avec envahissement du bas urètre et/ou du vagin ou de l'anوس et métastase ganglionnaire régionale unilatérale	
Stade IIIA	métastase(s) d'un ou deux ganglions <5 mm ou d'un ganglion >5 mm	T2N1aM0 T2N1bM0
Stade IIIB	métastases ≥ 3 ganglions <5 mm ou métastases ≥ 2 ganglions >5 mm	T2N2aM0 T2N2bM0
Stade IIIC	métastases ganglionnaires avec effraction capsulaire	T2N2cM0
Stade IV	Envahissement tumoral du haut urètre, de la vessie, de la muqueuse rectale ou du pelvis	T3
Stade IVA	métastases ganglionnaires fixées, ulcérées	T3N3M0
Stade IVB	métastases à distance	T3N3M1

Radiothérapie

- Quand ? *Néo-adjuvant versus adjuvant*
- Pour qui ? *Indications*
- Pourquoi ? *Résultats*
- Comment ? *Techniques*

Trial ID, design and comparison	Deaths	Adverse events	Duration of follow up
Landrum 2008 Retrospective study Primary chemoradiation versus primary surgery	9/30 (31%) versus 8/33 (24%) Adjusted HR=1.09 (95% CI 0.37 to 3.17) For list of adjusted variables -see Effects of interventions	Not reported	Median follow up was 31 months (range from 3-161 months)
Maneo 2003 RCT Neoadjuvant chemoradiation versus primary surgery	Death at 5 years: 20/28 (70%) versus 19/37 (51%)	Overall surgical morbidity: 13/24 (54%) versus 17/37 (46%)	Mean follow up was 42 months
Mulayim 2004 Retrospective study Primary chemo-radiation versus primary surgery	3/6 (50%) versus 6/6 (100%) Adjusted HR was non-informative due to sparse data	Acute toxicity Severe hematologic toxicity: 3/6 (50%) versus 4/6 (67%) Severe gastrointestinal toxicity: 1/6 (17%) versus 3/6 (50%) Severe skin toxicity: 2/6 (34%) versus 4/6 (67%)	Median follow up was 20 months (range 5-74 months)

Neoadjuvant chemoradiation for advanced primary vulvar cancer (Review)

van Doorn HC, Ansink A, Verhaar-Langereis MMJ, Stalpers LL



Update 2011
Total: 141 ptes
Biais +++

Chemoradiation for advanced primary vulval cancer (Review)

Shylasree TS, Bryant A, Howells REJ

Authors' conclusions

Women with advanced vulval tumours showed no significant difference in overall survival or treatment-related adverse events when chemoradiation (primary or neoadjuvant) was compared with primary surgery.

The retrospective studies had a high risk of bias as the entry criteria for primary chemoradiation was based on inoperability or tumour requiring exenteration. The radiochemotherapy regimens varied widely. There was no data on QoL.

There is no standard terminology for 'operable and inoperable vulval cancer', and for 'primary and neoadjuvant chemoradiation'. Stratification according to unresectability of the primary tumour and/or lymph nodes is needed, for good quality comparison.

Chirurgie si tumeur opérable

Radio-chimiothérapie première

Si inopérable

Si nécessité d'une exentération

Radiothérapie

- Quand ? *Néo-adjuvant versus adjuvant*
- Pour qui ? *Indications*
- Pourquoi ? *Résultats*
- Comment ? *Techniques*

Surgical-Pathologic Variables Predictive of Local Recurrence in Squamous Cell Carcinoma of the Vulva

JAMES M. HEAPS, M.D., YAO S. FU, M.D., FREDRICK J. MONTZ, M.D., NEVILLE F. HACKER, M.D., AND
JONATHAN S. BEREK, M.D.

Gynecol Oncol 38:309-14;1990

135 patientes: vulvectomy (117) excision(18)

Local Recurrence versus No Local Recurrence

Variable	<i>F</i>	<i>P</i>
Stage	41.47	0.0000
Margin	34.49	0.0000
Depth of invasion	17.42	0.0001
Tumor thickness	17.37	0.0001
Growth pattern	14.93	0.0002
Vascular invasion	9.06	0.0031
Amount of keratin	5.41	0.0215
Mitotic activity	5.18	0.0244
Tumor size	3.90	0.0505
Nucleoli	3.68	0.0573
Grade	1.75	0.1876

Surgical-Pathologic Variables Predictive of Local Recurrence in Squamous Cell Carcinoma of the Vulva

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Margin versus Vulvar Recurrence

Margin (mm)	Vulvar recurrence	No vulvar recurrence	Total
<8	21	23	44
≥8	0	91	91
Total	21	114	135
≤4.8	13	10	23
>4.8	8	104	112
Total	21	114	135

Lymph-Vascular Invasion and Vulvar Recurrence^a

Lymph-vascular invasion	Vulvar recurrence	Total
Present	7 (39%)	18
Absent	14 (12%)	117
Total	21	135

Growth Pattern and Vulvar Recurrence^a

Growth pattern	Vulvar recurrence	Total
Pushing	0	44
Infiltrative	13 (28%)	46
Mixed	8 (17%)	45
Total	21	135

Tumor Thickness and Local Recurrence

Thickness (mm)	Recurrence	No recurrence	Total
<2.5	0	47	47
2.5–5.0	6	34	40
5.1–7.5	6	15	21
7.6–10.0	3	7	10
10.1–12.5	4	7	11
12.6–15.0	0	1	1
15.1–17.5	2	2	4
17.6–20.0	0	1	1
Total	21	114	135
≤9.97	14	103	117
>9.97	7	11	18
Total	21	114	135

Mitotic Activity and Vulvar Recurrence^a

Mitoses per 10 HPF	Vulvar recurrence	Total
>10	16 (24%)	66
<10	5 (7%)	69
Total	21	135

Vulvar Carcinoma

The Price of Less Radical Surgery

Cancer 2002; 95:2331-8

253 T1-T2 SCC

168 vulvectomies (Group I)

85 excisions (Groupe II)

Joanne A. de Hullu, Ph.D.¹

Harry Hollema, Ph.D.²

Sietske Lolkema, M.D.¹

Marika Boezen, Ph.D.³

Henk Boonstra, Ph.D.⁴

Matthe P. M. Burger, Ph.D.⁵

Jan G. Aalders, Ph.D.¹

Marian J. E. Mourits, Ph.D.¹

Ate G. J. van der Zee, Ph.D.¹

TABLE 3

Site of 38 Recurrences within 2 Years in Both Groups of Patients^a

Site(s) of recurrence	Group I	Group II	Total no. of patients
Local	11	7	18
Groin	1	1	2
Skin bridge	—	1	1
Pelvis	5	2	7
Distant	3	2	5
Local/groin	1	1	2
Local/distant	—	1	1
Skin bridge/distant	—	1	1
Groin/pelvis	—	1	1
Total	21	17	38

Récidives locales au sein du Groupe II :

0/39 avec marges > 8mm

9/40 (22.5%) avec marges < 8 mm ($p=0.002$)

Irradiation ganglionnaire

Primary groin irradiation versus primary groin surgery for early vulvar cancer (Review)

van der Velden J, Fons G, Lawrie TA



**THE COCHRANE
COLLABORATION®**

Primary Groin Radiotherapy compared to Primary Groin Surgery for Early Vulvar Cancer

Patient or population: patients with Early Vulvar Cancer

Settings: Hospital

Intervention: Primary Groin Radiotherapy

Comparison: Primary Groin Surgery

Outcomes	Illustrative comparative risks* (95% CI)			Relative effect (95% CI)	No of Participants (studies)	Quality of the evidence (GRADE)
	Assumed risk		Corresponding risk			
	Primary Groin Surgery	Primary Groin Radiotherapy				
Groin recurrence	Study population ¹			RR 10.21 (0.59 to 175.78)	52 (1 study)	⊕⊕○○ low ^{2,3}
	Low risk population ¹					
	20 per 1000	204 per 1000 (12 to 1000)				
Disease specific mortality	Study population			RR 3.70 (0.87 to 15.8)	52 (1 study)	⊕⊕○○ low ^{2,3}
	80 per 1000	296 per 1000 (70 to 1000)				
	Low risk population					
	100 per 1000	370 per 1000 (87 to 1000)				

Radiation Therapy Versus Pelvic Node Resection for Carcinoma of the Vulva With Positive Groin Nodes

HOWARD D. HOMESLEY, MD, BRIAN N. BUNDY, MA, ALEXANDER SEDLIS, MD,
AND LEON ADCOCK, MD

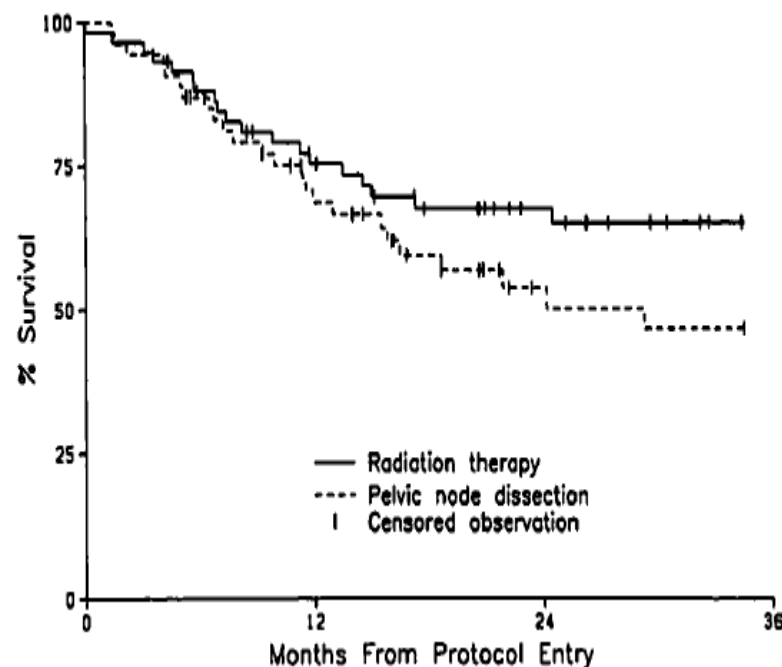
(*Obstet Gynecol* 68:733, 1986)

Vulvectomy radicale et curages inguinaux

N+: randomisation RT vs pas de RT

45-50Gy pelvis

Site of recurrence	Treatment groups		Total
	Radical vulvectomy, bilateral groin dissection, radiation therapy	Radical vulvectomy, bilateral groin dissection, pelvic node dissection	
None	40 (67.8)	30 (54.5)	70 (61.4)
Local (vulva)	5 (8.5)	5 (9.1)	10 (8.8)
Regional (groin)	3 (5.1)	13 (23.6)	16 (14.0)
Regional (pelvis)	4 (6.8)	1 (1.8)	5 (4.4)
Distant only	5* (8.5)	4† (7.3)	9 (7.9)
Distant and local	0 (0.0)	1‡ (1.8)	1 (0.9)
Unknown	2 (3.4)	1 (1.8)	3 (2.6)
Total	59 (100.0)	55 (100.0)	114 (100.0)



Group evaluated	Risk factor tested	Response variable	P
Whole group	Radiation therapy <i>vs</i> pelvic node dissection	Survival	.03
Whole group	Radiation therapy <i>vs</i> pelvic node dissection	Relative survival	.004
Whole group	Radiation therapy <i>vs</i> pelvic node dissection	Progression-free interval	.03
Whole group	Groin Nodes: N0, N1 <i>vs</i> N2 <i>vs</i> N3	Survival	.01
Whole group	Number of positive groin nodes	Survival	.0001
Groin nodes: N0, N1	Radiation therapy <i>vs</i> pelvic node dissection	Survival	NS*
One positive groin node	Radiation therapy <i>vs</i> pelvic node dissection	Survival	NS*
Rx: Pelvic node dissection	Pelvic node status	Survival	.002

Adjuvant radiotherapy in patients with vulvar cancer and one intra capsular lymph node metastasis is not beneficial

G. Fons ^{a,*}, S.M.A. Groenen ^b, M.H.M. Oonk ^c, A.C. Ansink ^c, A.G.J. van der Zee ^c, M.P.M. Burger ^a, L.J.A. Stalpers ^d, J. van der Velden ^a

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^b Department of Gynaecologic Oncology, Erasmus Medical Centre, Rotterdam, The Netherlands

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^d Department of Radiotherapy of the Academic Medical Centre, Amsterdam, The Netherlands

Gynecologic Oncology 114 (2009) 343–345

75 patientes: 1 ADP positive after vulvectomy radicale and curage bilat
31/75 patientes ont reçu RT postop

Number of recurrences per site of recurrence.

Site of recurrence	Intra capsular metastasis	
	Without RT ^a	With RT
None	30 (68) ^b	19 (62)
Local (vulva)	7 (16)	7 (23)
Groin	1 (2)	0 (0)
Pelvis	1 (2)	2 (6)
Distant	2 (5)	2 (6)
Unknown	3 (7)	1 (3)
Total	44 (100)	31 (100)

^a Radiotherapy.

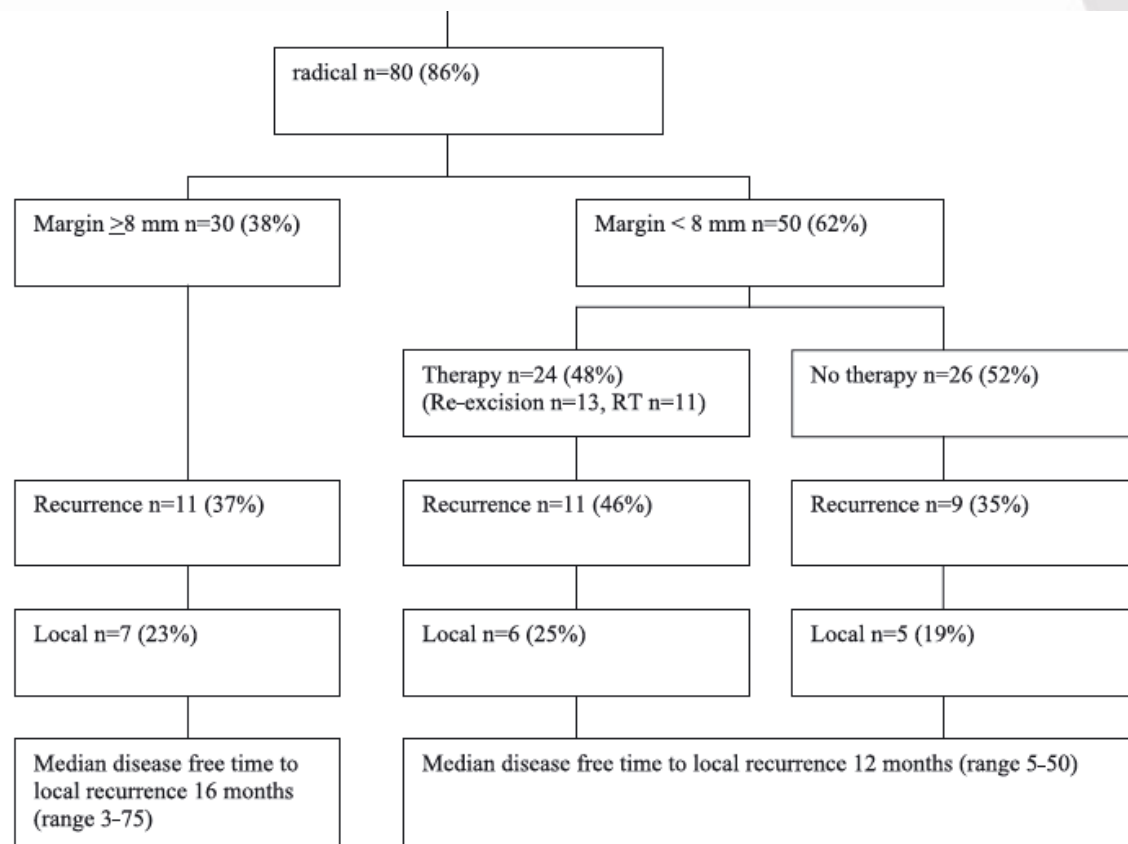
^b Percentage.

Indications de la radiothérapie

- Marges chirurgicales < 8mm
- Marges positives
- Emboles Lymphovasculaires
- >1 Ganglion positif
- (Extracapsular invasion)

Recurrence Rate in Vulvar Carcinoma in Relation to Pathological Margin Distance

Int J Gynecol Cancer 2010;20: 869–873



The benefit of adjuvant radiation therapy in single-node-positive squamous cell vulvar carcinoma

Anand Parthasarathy^{a,c}, Michael K. Cheung^a, Kathryn Osann^d, Amreen Husain^a,
Nelson N. Teng^a, Jonathan S. Berek^a, Daniel S. Kapp^b, John K. Chan^{a,*}

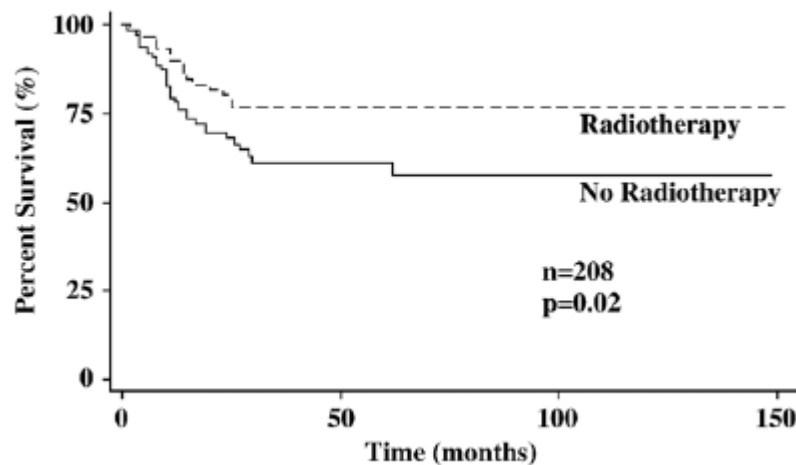


Table 3

Multivariate analysis of parameters associated with disease-specific survival

	Hazard ratio	95% confidence interval	p value
Age at diagnosis ^a	2.23	(1.23–4.04)	0.008
Extent of lymphadenectomy ^b	0.70	(0.40–1.22)	0.21
Adjuvant radiotherapy ^c	0.57	(0.32–1.03)	0.06

^a ≤ 70 years vs. > 70.

^b ≤ 12 nodes resected vs. > 12.

^c No adjuvant radiation vs. adjuvant radiation.

Radiothérapie

- Quand ? *Néo-adjuvant versus adjuvant*
- Pour qui ? *Indications*
- **Pourquoi ? *Résultats***
- Comment ? *Techniques*

ADJUVANT RADIATION FOR VULVAR CARCINOMA: IMPROVED LOCAL CONTROL

CLARE M. FAUL, M.B.,* DWIGHT MIRMOW, M.D.,[†] QINGSHON HUANG, M.S.,[‡]
KRISTINA GERSZTEN, M.D.,* ROGER DAY, ScD[‡] AND MIRKA W. JONES, M.D.[†]

Departments of *Radiation Oncology, [†]Pathology and [‡]Statistics, Magee Women's Hospital,
University of Pittsburgh Medical School, Pittsburgh, PA

62 patientes avec marges atteintes ou limites

31 ont reçu de la RT: 48-56 Gy 1.8 Gy/j

Table 3. Patterns of failure

Recurrence	Observation		Radiation	
	Close margin	Positive margin	Close margin	Positive margin
Local	5 (33%)	8 (50%)	1 (5%)	2 (16%)
Loc/nod	0	3 (20%)	0	1 (8%)
Loc/dist	1 (6%)	1 (6%)	0	1 (8%)
Nodal	1 (6%)	1 (6%)	4 (21%)	0
Distant	1 (6%)	1 (6%)	2 (10.5%)	0
Nod/dist	0	1 (6%)	2 (10.5%)	0
No recurrence	7 (47%)	1 (6%)	10 (53%)	8 (67%)
Time to recurrence (years)	1.41	0.98	0.93	1.45

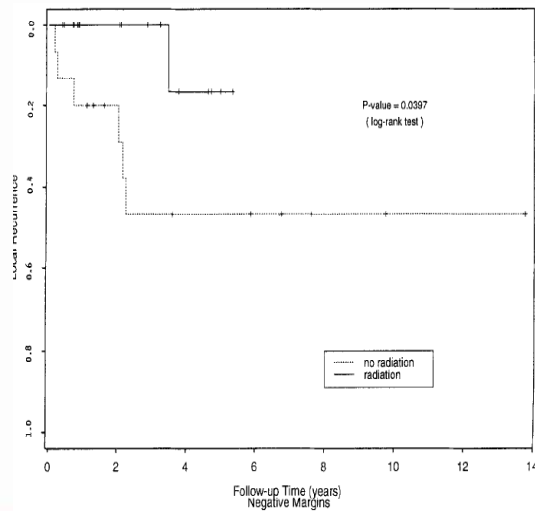
Loc/nod = local and nodal recurrence.

Loc/dist = local and distant recurrence.

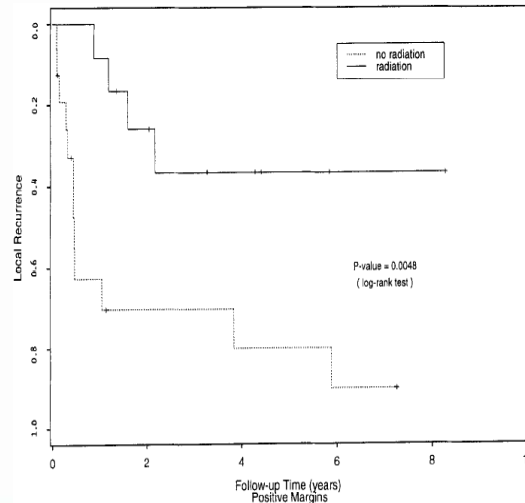
Nod/dist = nodal and distant recurrence.

Variables	Overall survival		Local control	
	Univariate <i>p</i> value	Multivariate <i>p</i> value	Univariate <i>p</i> value	Multivariate <i>p</i> value
Radiation (yes vs. no)	0.0002	—	0.003	0.009
Margins (pos vs. neg)	—	0.006	0.011	0.0001
Depth (continuous)	0.2	—	0.06	—
Site (central vs. lateral)	0.2	—	0.09	—
P.P.N. (continuous)	0.01	0.04	0.09	—
Volume (continuous)	—	—	0.119	—
C.L.S. (yes vs. no)	—	—	0.9	—
Grade (1 vs. 2 vs. 3)	0.09	—	0.35	—
Stage (1 vs. 2 vs. 3 vs. 4)	0.03	0.01	0.54	0.104
Surgery (rad. vs. w.l.e.)	—	0.2	0.67	—
Age (continuous)	—	—	1.009	—

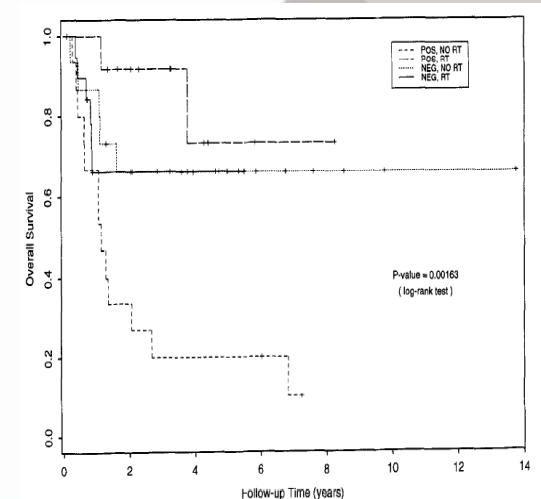
Marges limites



Marges positives



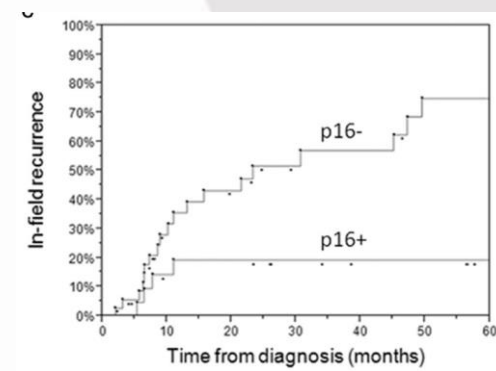
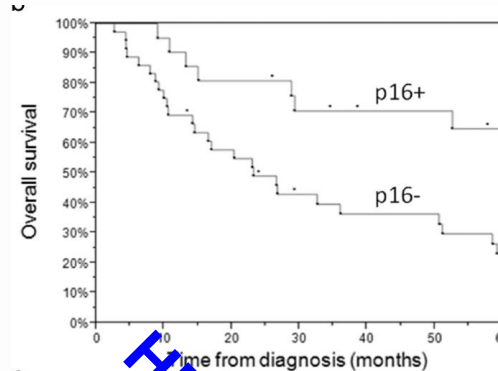
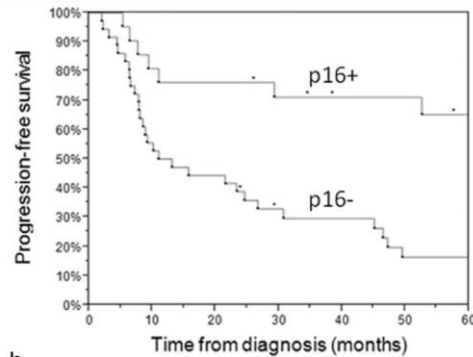
Marge et survie globale



Statut HPV

Prognostic importance of human papillomavirus (HPV) and p16 positivity in squamous cell carcinoma of the vulva treated with radiotherapy

Larissa J. Lee ^{a,f,*}, Brooke Howitt ^{b,f}, Paul Catalano ^{d,f}, Cynthia Tanaka ^a, Rita Murphy ^a, Nicole Cimbak ^a, Rebecca DeMaria ^a, Paula Bu ^a, Christopher Crum ^{b,d}, Neil Horowitz ^{c,d}, Ursula Matulonis ^{c,d}, Akila N. Viswanathan ^{a,f}



Univariate analysis for PFS and OS for 57 patients with known p16 status.

	In-field relapse		PFS		OS	
	Unadjusted HR (95% CI)	p-Value	Unadjusted HR (95% CI)	p-Value	Unadjusted HR (95% CI)	p-Value
Age	1.06/yr (1.02–1.10)	<0.01	1.04/yr (1.01–1.07)	<0.01	1.04/yr (1.01–1.07)	<0.01
Smoking status						
Never smoked	1.0	<0.01	1.0	<0.01	1.0	0.05
Former smoker	1.7 (0.7–3.7)		1.2 (0.6–2.3)		1.4 (0.7–2.8)	
Current smoker	0.1 (0.01–0.5)		0.3 (0.1–0.6)		0.4 (0.2–0.9)	
FIGO stage						
IB/II	1.0	0.048*	1.0	0.04*	1.0	0.01*
IIIA/IIIB	0.8 (0.2–2.6)		0.8 (0.4–1.9)		0.9 (0.4–2.2)	
IIIC/IVA/IVB	2.2 (0.6–8.2)		1.4 (0.5–3.6)		1.7 (0.7–4.4)	
Recurrent	2.3 (0.7–7.9)		2.1 (0.9–5.2)		2.7 (1.1–6.8)	
RT intent						
Post-operative	1.0	<0.01	1.0	0.04	1.0	0.03
Pre-operative	4.3 (1.1–15.7)		1.8 (0.6–4.5)		2.2 (0.7–5.7)	
Definitive	5.2 (1.6–16.7)		2.3 (1.0–5.0)		1.9 (0.8–4.2)	
Salvage	4.5 (1.5–14.6)		2.8 (1.3–6.2)		3.3 (1.5–7.3)	
Chemotherapy	1.8 (0.8–4.3)	0.14	1.2 (0.7–2.1)	0.5	1.3 (0.7–2.3)	0.4
p16 positive	0.2 (0.05–0.5)	<0.01	0.3 (0.2–0.6)	<0.01	0.5 (0.2–0.9)	0.02
Year of diagnosis	1.00/yr (0.92–1.09)	0.9	0.98/yr (0.92–1.05)	0.5	1.02/yr (0.96–1.09)	0.5

Abbreviations: HR, hazard ratio; RT, radiotherapy.

* p-Value for trend.

THE ROLE OF RADIATION THERAPY IN PREVENTING REGIONAL RECURRENCES OF INVASIVE SQUAMOUS CELL CARCINOMA OF THE VULVA

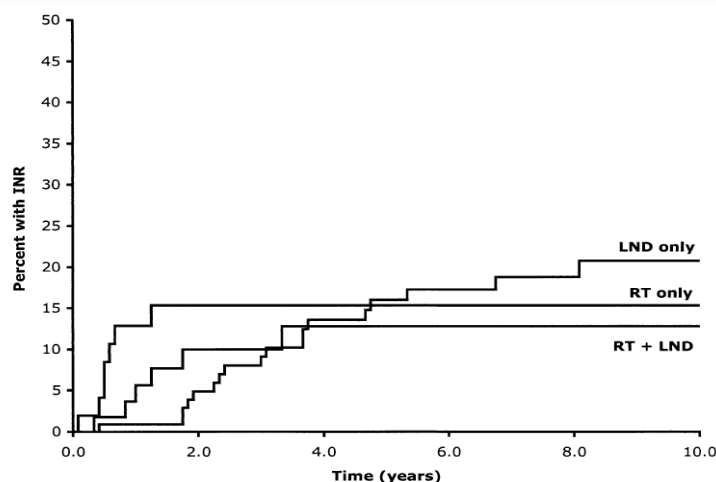
ANGELA KATZ, M.D.,* PATRICIA J. EIFEL, M.D.,* ANUJA JHINGRAN, M.D.,* AND
CHARLES F. LEVENBACK, M.D.†

Departments of *Radiation Oncology and †Gynecologic Oncology, The University of Texas M. D. Anderson Cancer Center,
Houston, TX

Int. J. Radiation Oncology Biol. Phys., Vol. 57, No. 2, pp. 409–418, 2003

227 patientes
Suivi médian 98 mois

Treatment	Clinically negative (160 patients)			Clinically suspicious (67 patients)			Total
	Path N–	Path N+	Path unknown	Path N–	Path N+	Path unknown	
LND only	103	4	0	10	2	0	119
LND followed by RT	3	17	0	3	17	0	40
RT followed by LND	0	3*	1	0	9*	4	17
RT only	0	0	29	0	5†	17	51
Total	106	24	30	17	33	17	227



Facteurs de rechutes
- Curage seul
- Curage + RT: 50 jours

Radiothérapie

- Quand ? *Néo-adjuvant versus adjuvant*
- Pour qui ? *Indications*
- Pourquoi ? *Résultats*
- **Comment ? *Techniques***

INTENSITY-MODULATED RADIOTHERAPY FOR THE TREATMENT OF VULVAR CARCINOMA: A COMPARATIVE DOSIMETRIC STUDY WITH EARLY CLINICAL OUTCOME

SUSHIL BERIWAL, M.D.,* DWIGHT E. HERON, M.D.,* HAYEON KIM, M.S.,* GWENDOLYN KING, M.S.,*
JEFFREY SHOGAN, M.D.,* SANJEEV BAHRI, M.D.,* KRISTINA GERSZTEN, M.D.,* JOE LEE, PH.D.,[†]
JOSEPH KELLEY, M.D.,* AND ROBERT P. EDWARDS, M.D.*

*University of Pittsburgh Cancer Institute, Pittsburgh, PA; and [†]D3 Advanced Radiation Planning, Pittsburgh, PA

Int. J. Radiation Oncology Biol. Phys., Vol. 64, No. 5, pp. 1395–1400, 2006

15 patientes : préop ou postop.

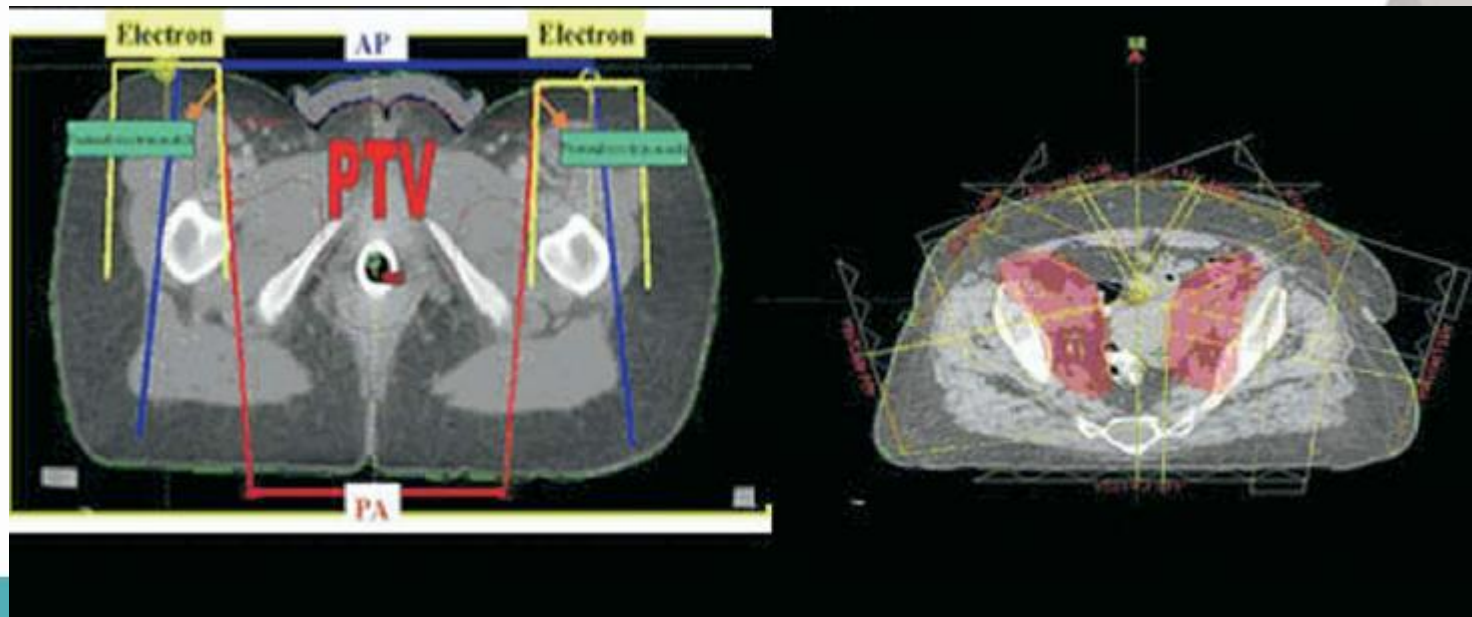
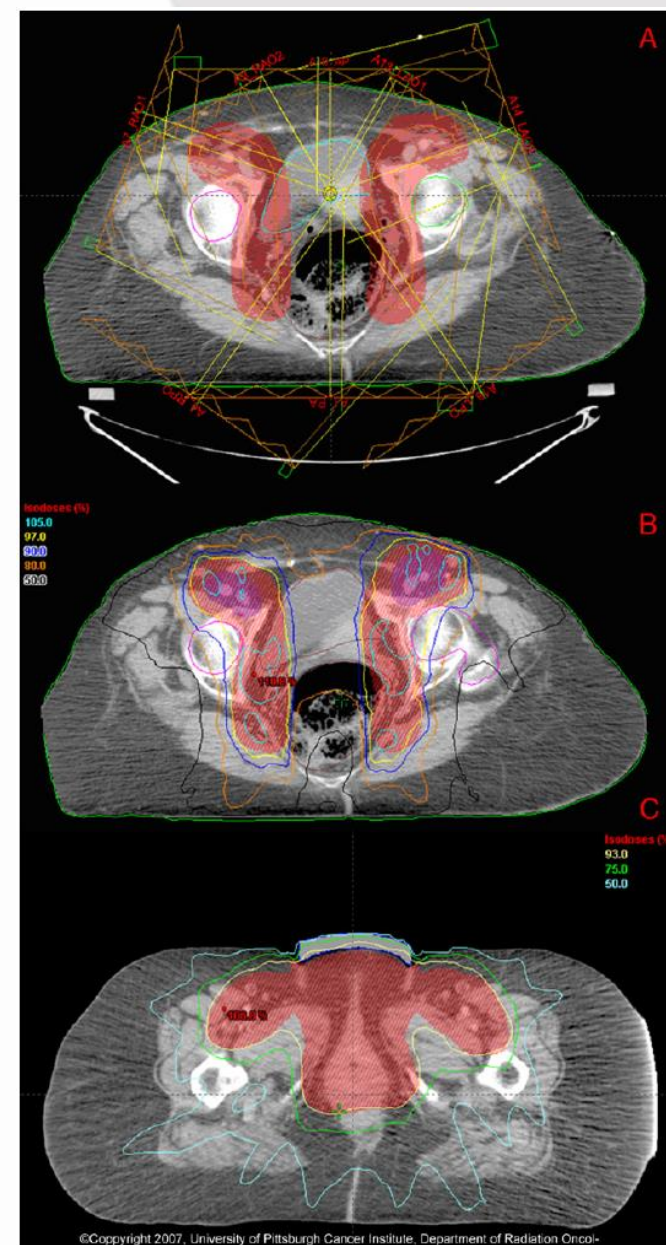


Table 3. Volume of critical structures receiving greater than 30 Gy (V30)

Organ	IMRT	3D	Reduction (%)	<i>p</i> Value
Rectum	45%	87%	41%	0.1
Bladder	62%	88%	26%	0.04
Small bowel	44%	71%	27%	0.3

Table 4. Acute gastrointestinal, bladder, and skin toxicity

RTOG grade	0	1	2	3	4
Gastrointestinal	2	9	3	1	0
Bladder	12	1	2	0	0
Skin	0	4	11	0	0

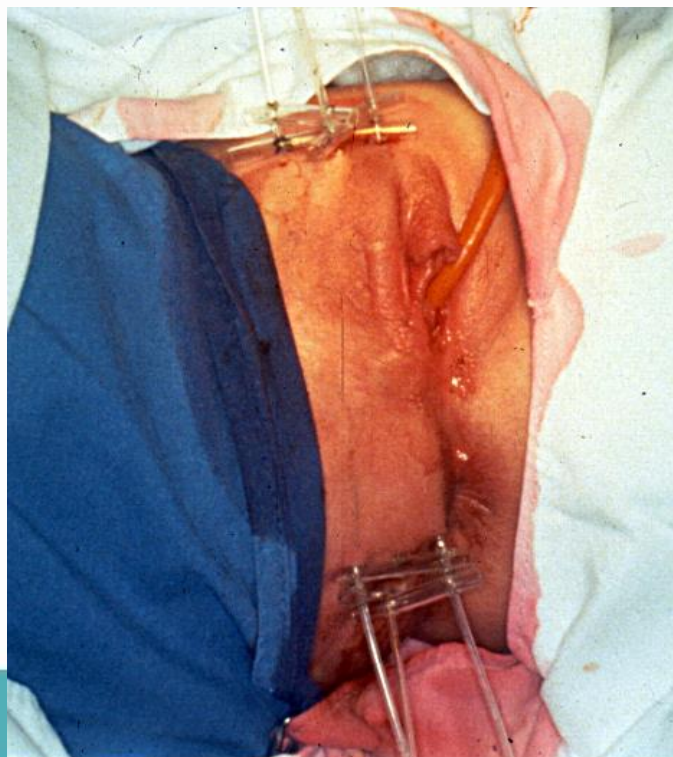


Technique

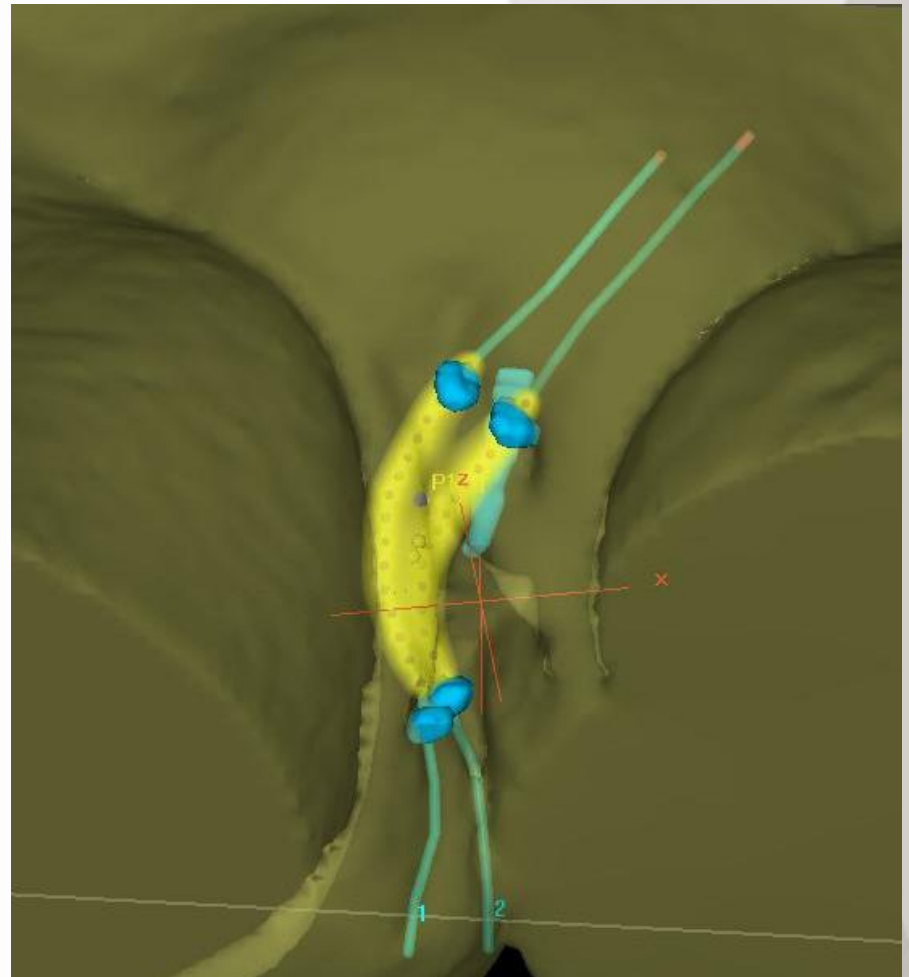
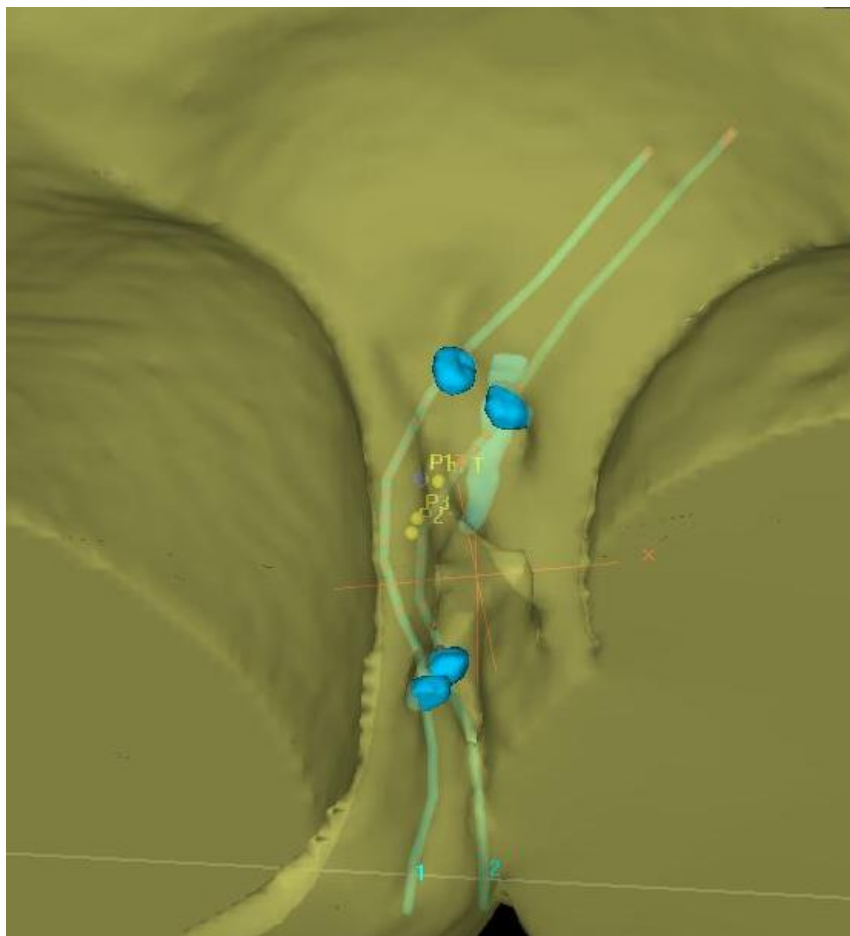
- **Traitement adjuvant: 45-50 Gy**
- **Tumeur en place: RT 45 Gy + curie total 60-80 Gy**
- **Technique de curiethérapie**
 - Lésion labiale
 - Interstitielle
 - Tube plastique dans l'axe de la lèvre
 - Para-urétrale / para-vagin
 - Interstitielle +/- intracavitaire
 - Tube plastiques dans l'axe de l'urètre ou du vagin

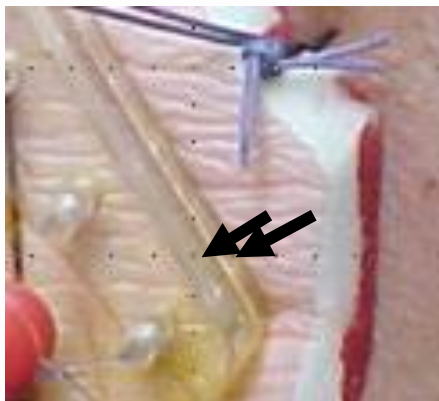
CTV en radiothérapie

- Marge + : vulve
- Marge < 8 mm : vulve
- > 1 ADP: creux inguinal
 - Pelvis ?

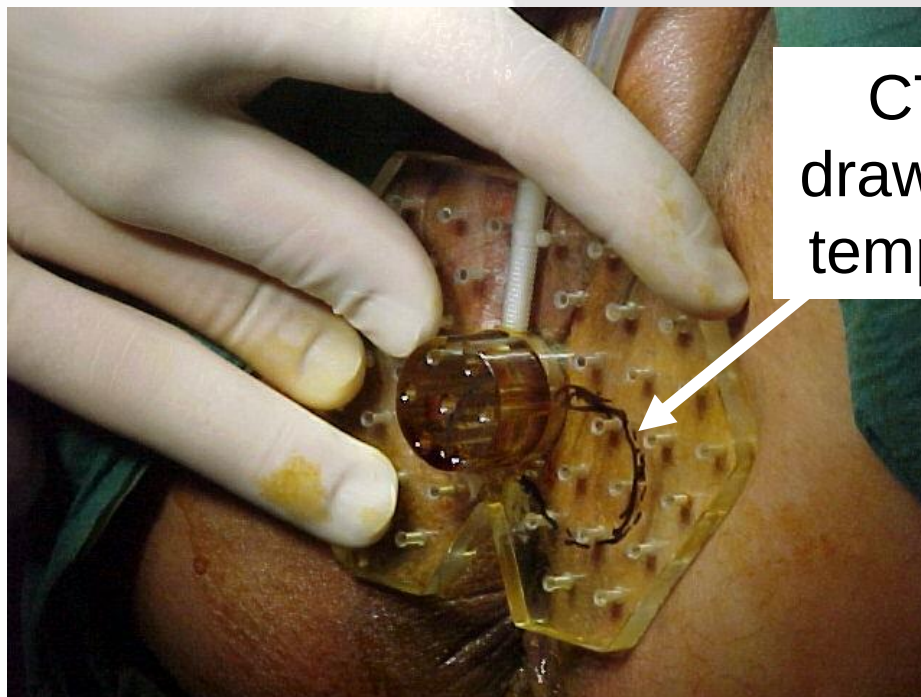




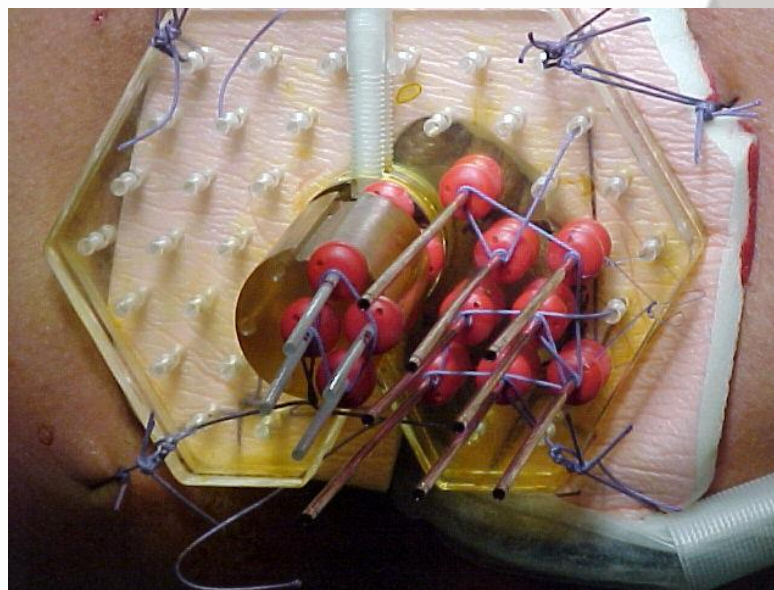




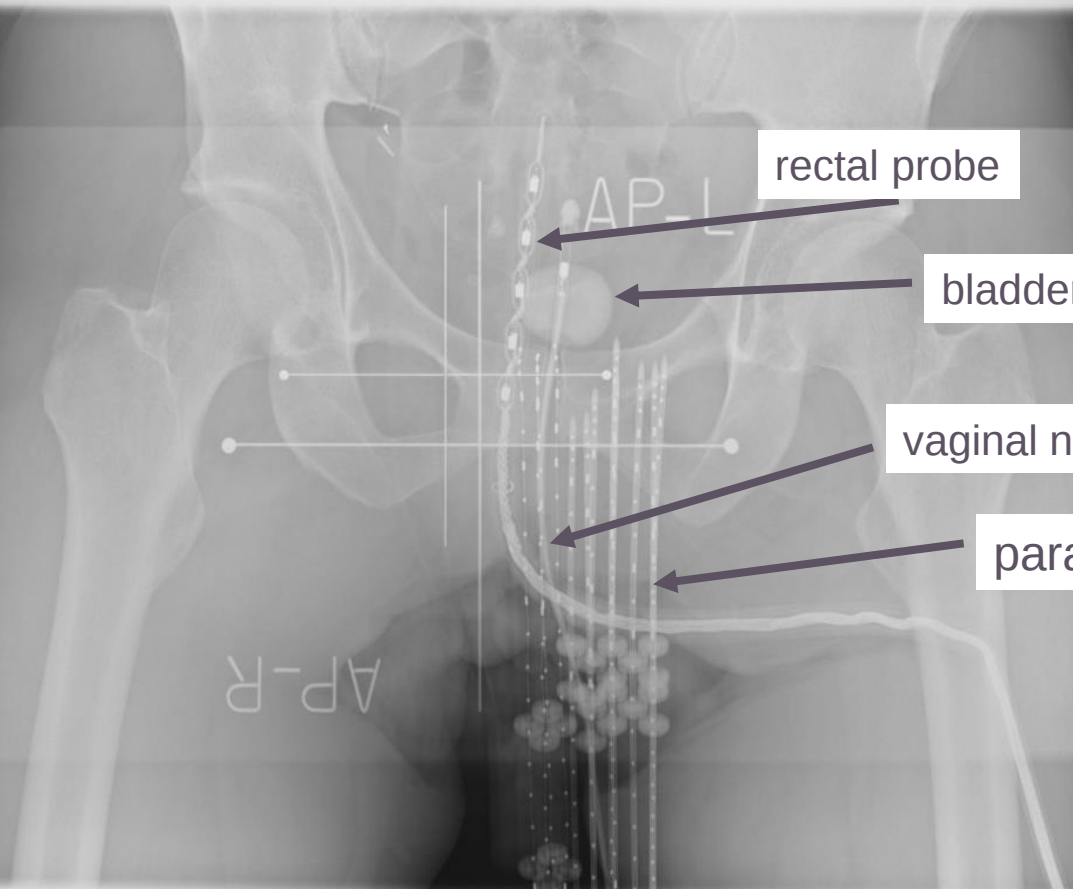
Courtesy Umesh Mahantshetty



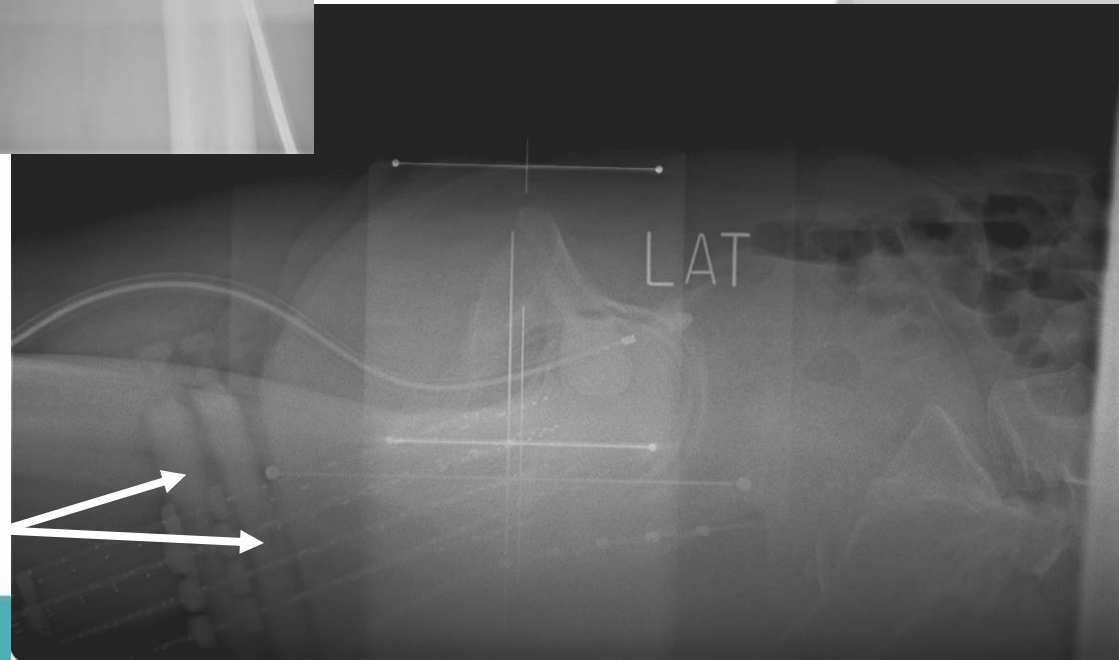
CTV
drawn on
template

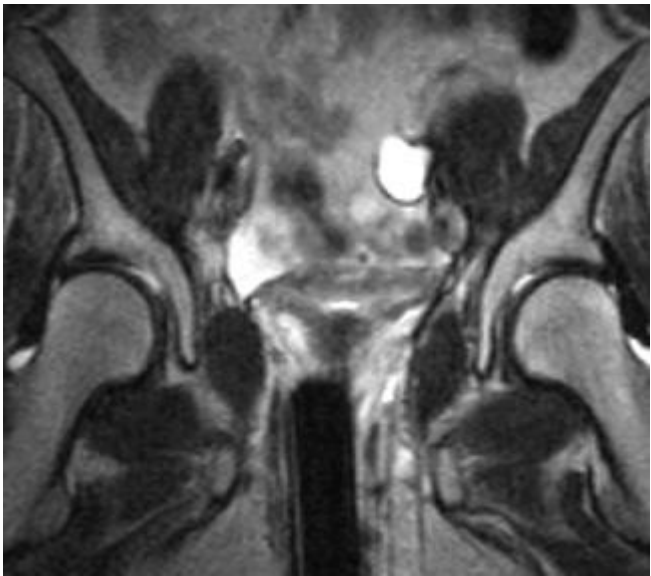
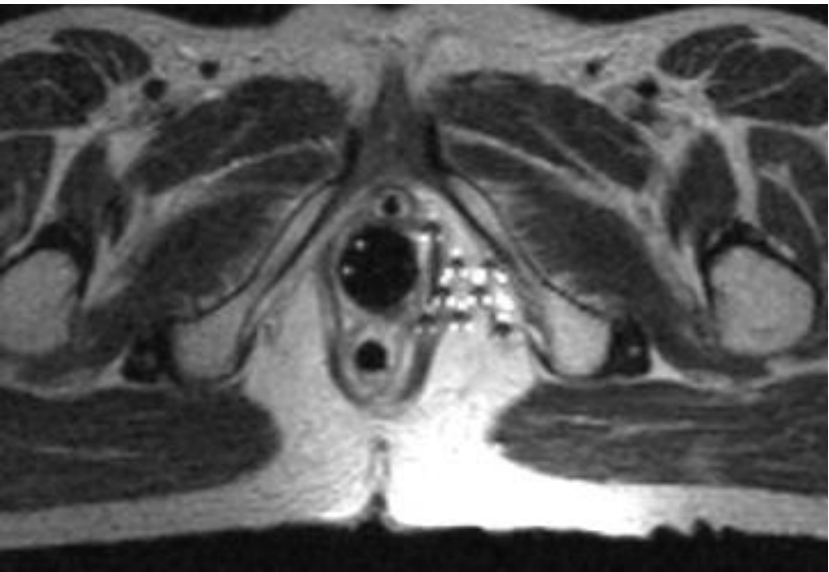


Orthogonal radiographs



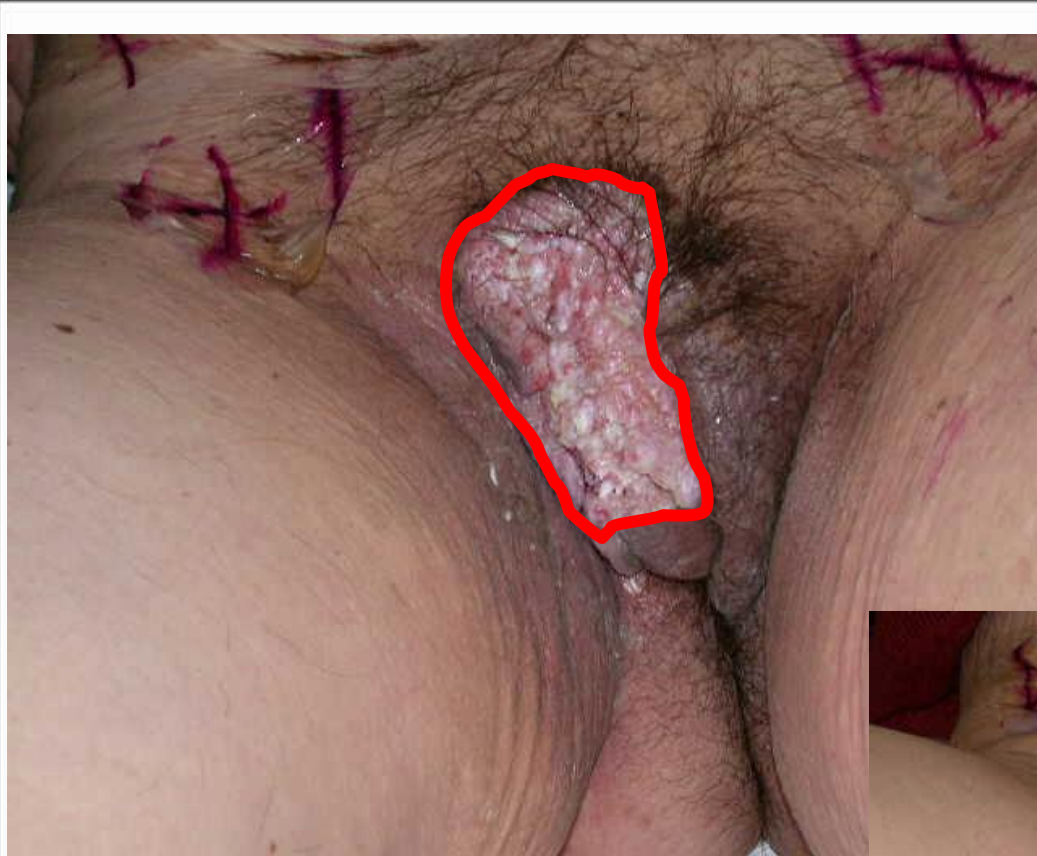
double template





diagnostic

A 45 Gy



diagnostic

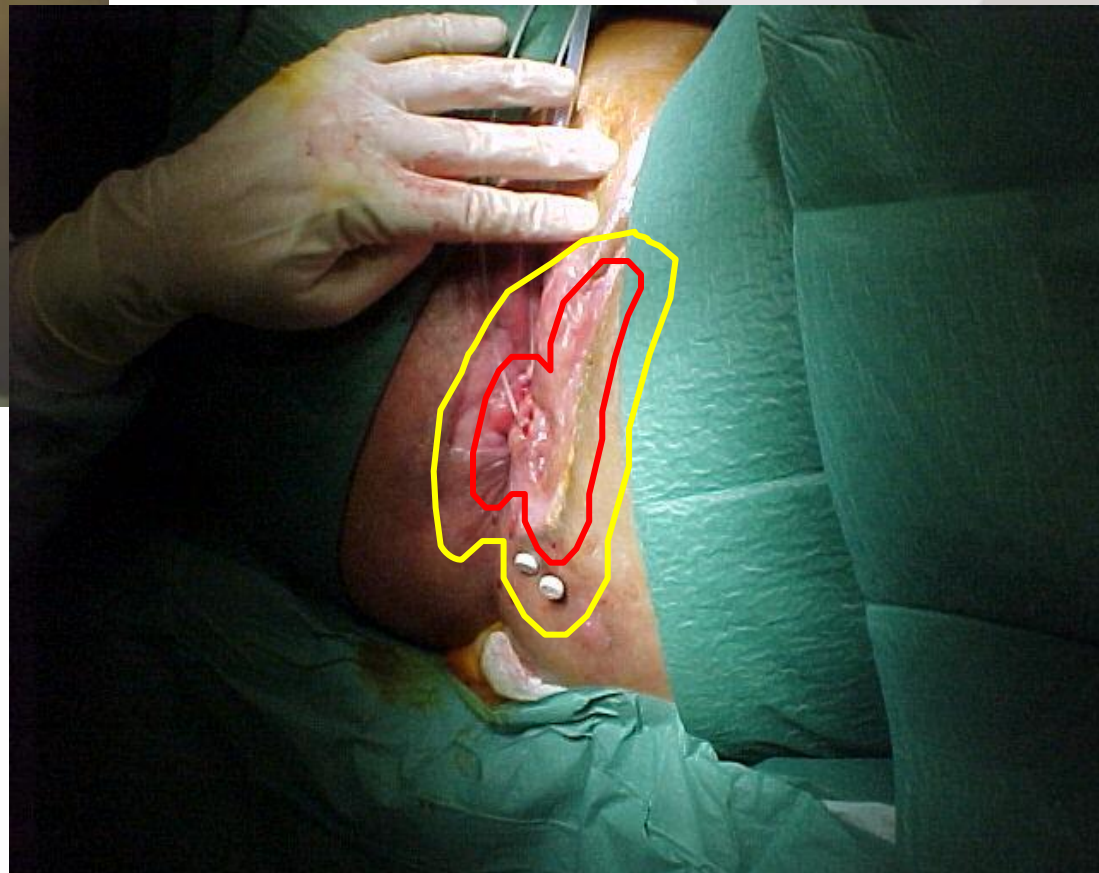
A 45 Gy

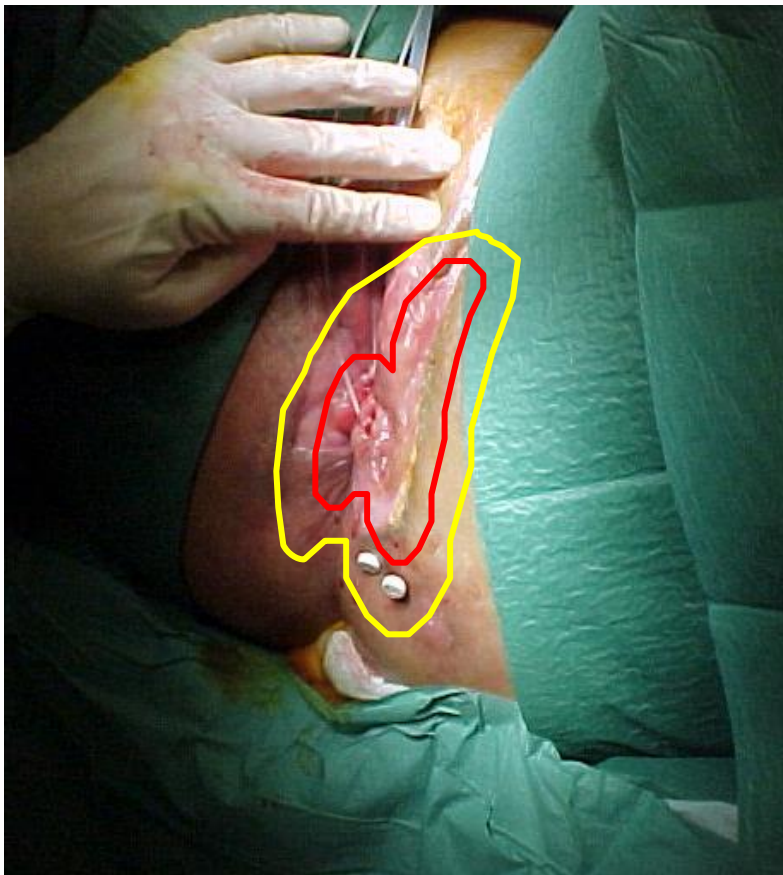




Initial tumour extension

**HR-CTV/ IR-CTV
at time of
brachytherapy**





EFFECTIVENESS OF BRACHYTHERAPY IN TREATING CARCINOMA OF THE VULVA

**SURJEET POHAR, M.D., SYLVETTE HOFFSTETTER, M.D., DIDIER PEIFFERT, M.D.,
ELISABETH LUPORSI, M.D. AND MONIQUE PERNOT, M.D.**

Int J Radiat Oncol Biol Phys 32:1455-60;1995

34 patients : 21 first-line treatment

13 for recurrent disease

5-year actuarial local control : 45%

IRRADIATION IN CARCINOMA OF THE VULVA: FACTORS AFFECTING OUTCOME

**CARLOS A. PEREZ, M.D.,* PERRY W. GRIGSBY, M.D.,* K. S. CLIFFORD CHAO, M.D.,*
ANDREW GALAKATOS, M.D.,† MELAHAT GARIPAGAOGLU, M.D.,‡ DAVID MUTCH, M.D.† AND
MARY ANN LOCKETT, M.B.A.***

Int J Radiat Oncol Biol Phys 42:335–44;1998

86 patients : 68 first-line treatment

18 for recurrent disease

Local control : T1-T2 <50Gy : 75%, 50-65Gy : 100%

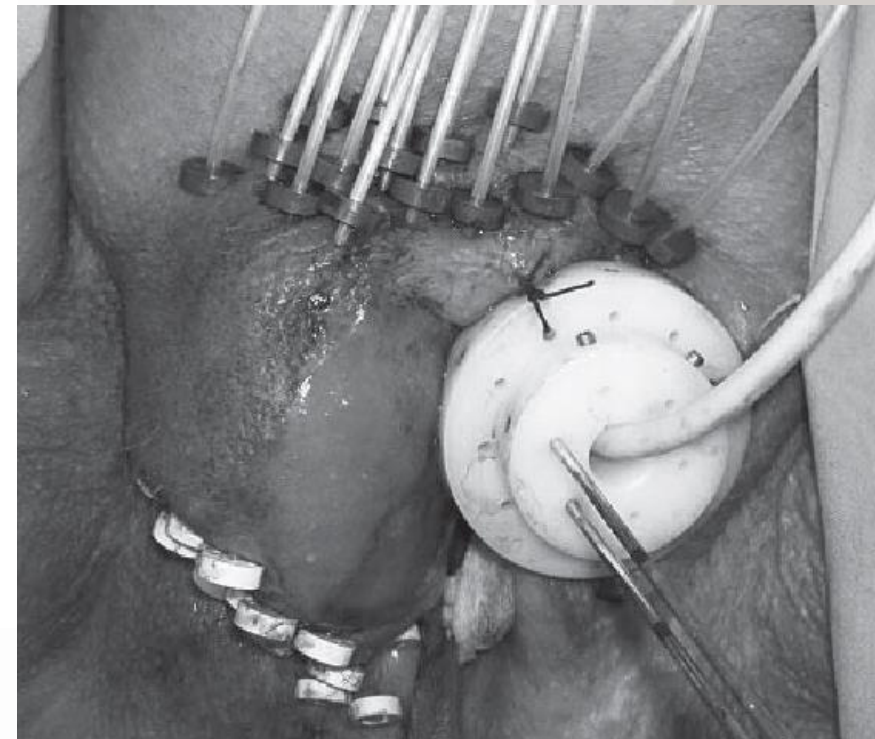
T3-T4 <50Gy : 0%, 50-65Gy : 63%

The Role of Interstitial Brachytherapy in the Treatment of Vaginal and Vulvar Malignancies

Annedore R. Seeger¹, Andrea Windschall¹, Michael Lotter¹, Grit Mehlhorn², Matthias W. Beckmann², Rolf Sauer¹, Vratislav Strnad¹

Vulvar cancer Strahlenther Onkol 2006;182:142–8
(n = 9)

FIGO	
• I	1/9
• II	4/9
• III	4/9
Histology	
• Squamous cell	7/9
• Malignant melanoma	1/9
• Paget's carcinoma	1/9
Type of surgery	
• Tumor resection	4/7
• Radical tumor resection + pelvic lymphonodectomy	2/7
• Exenteration	1/7
• Clear resection margins	3/7
• Positive resection margins	4/7
Radiotherapy alone	2/9



The Role of Interstitial Brachytherapy in the Treatment of Vaginal and Vulvar Malignancies

Annedore R. Seeger¹, Andrea Windschall¹, Michael Lotter¹, Grit Mehlhorn², Matthias W. Beckmann², Rolf Sauer¹, Vratislav Strnad¹

Clinical target volume (CTV) determined by clinical examination, transvaginal ultrasound, or CT imaging

Treatment planning based on anteroposterior and lateral X-ray images

Remission

5/9 patients = complete remission

4/9 patients = partial remission 6 weeks after radiotherapy

After 6 months : complete local remission in 7/9 (77,8%)

Indications de la radiothérapie

- Marges chirurgicales < 8mm
- Marges positives
- Emboles Lymphovasculaires
- >1 Ganglion positif
- (Extracapsular invasion)

Thanks

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