

# Place de la laparoscopie dans le cancer du rectum

Frédéric BRETAGNOL



Service de Chirurgie Colorectale  
Pôle des Maladies de l'Appareil Digestif  
Hôpital Beaujon - Clichy



# Cancer du rectum et laparoscopie

- **Objectifs du traitement chirurgical**
  - **Contrôle pelvien**
  - **Survie globale, sans récurrence**
  - **Résultats opératoires (conversion – morbidité)**
  - **Séquelles digestives et génito-urinaires**

# Cancer colorectal et laparoscopie

- Cancer du colon

**Laparoscopy-assisted colectomy versus open colectomy for treatment of non-metastatic colon cancer: a randomised trial** *Lancet* 2002; **359**: 2224–29

**Laparoscopic resection of rectosigmoid carcinoma: prospective randomised trial** *Lancet* 2004; **363**: 1187–92

**A Comparison of Laparoscopically Assisted and Open Colectomy for Colon Cancer**  
N Engl J Med 2004;350:2050-9.  
The Clinical Outcomes of Surgical Therapy Study Group\*

**Randomized Trial of Laparoscopic-Assisted Resection of Colorectal Carcinoma: 3-Year Results of the UK MRC CLASICC Trial Group**  
David G. Jayne, Pierre J. Guillou, Helen Thorpe, Philip Quirke, Joanne Copeland, Adrian M.H. Smith,  
*J Clin Oncol* 25:3061-3068. © 2007 by American Society of Clinical Oncology

**Survival after laparoscopic surgery versus open surgery for colon cancer: long-term outcome of a randomised clinical trial** *Lancet Oncol* 2009; **10**: 44–52

The Colon Cancer Laparoscopic or Open Resection Study Group\*

- Cancer du rectum

**Long-Term Morbidity and Oncologic Outcomes of Laparoscopic-Assisted Anterior Resection for Upper Rectal Cancer: Ten-Year Results of a Prospective, Randomized Trial**

*Dis Colon Rectum* 2009; **52**: 558–566

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# Conversion

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Long-Term Morbidity and Oncologic Outcomes of Laparoscopic-Assisted Anterior Resection for Upper Rectal Cancer: Ten-Year Results of a Prospective, Randomized Trial

*Dis Colon Rectum* 2009; 52: 558-566

- Rectum 82/242

**34%**

- Causes de conversion

- Tumeur fixée 41%
- Obésité 26%
- Dissection 21%

- Haut rectum 23/76

**30%**

- Causes de conversion

- Tumeur fixée 36%

**Chirurgie complexe !**



## Conversion et résultats opératoires

- **Morbidité**

	Actual treatment group		
	Open	Laparoscopic	Conversion
Colon	115 (42%)	133 (39%)	99 (69%)
Rectum	48 (33%)	62 (34%)	23 (38%)
Complications (rectum)	67 (51%)	71 (44%)	76 (93%)
Wound infection	16 (12%)	16 (10%)	16 (20%)
Chest infection	6 (5%)	12 (8%)	12 (15%)
Anastomotic dehiscence	10 (7%)	13 (8%)	12 (15%)
Deep-vein thrombosis	2 (2%)	..	1 (1%)
Other	33 (25%)	30 (19%)	35 (43%)

- **Mortalité**

- Laparoscopie (4%) vs Laparotomie (5%)

- Si conversion : 9% vs 1% (laparoscopie) ++



# Conversion

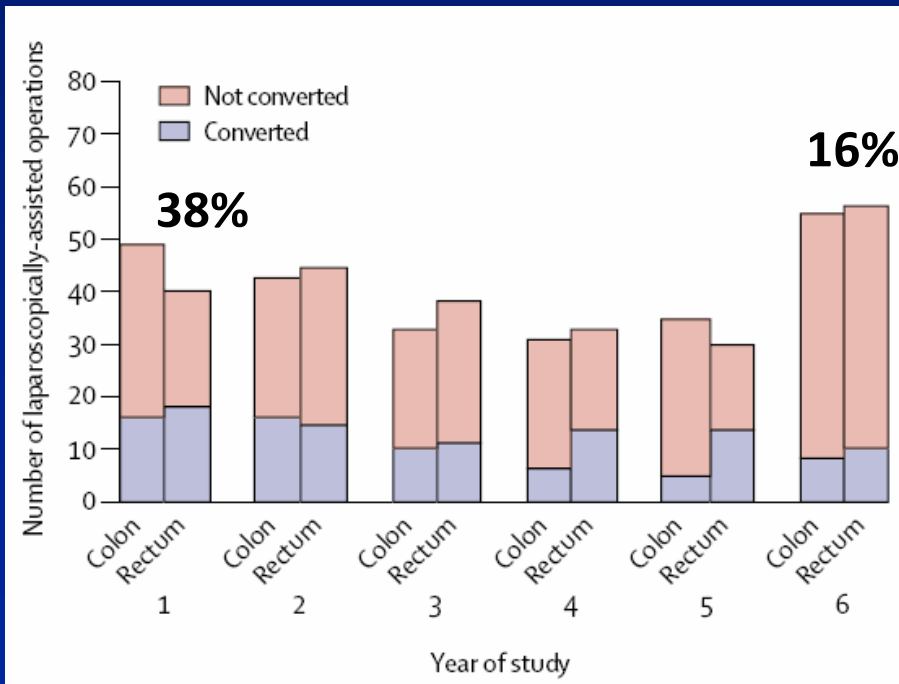
• CLASICC **34% (rectum) mais**

• Bordeaux : **15,5 %**

Etude multicentrique : 27 centres !

Fixité tumorale 4%

Sélection des patients !



	Odds ratio	P*
Conversion		
Sex (M versus F)	3.01 (1.14, 7.89)	0.026
Type of anastomosis (stapled versus handsewn)	2.42 (1.03, 5.66)	0.042
Intraoperative rectal fixity (yes versus no)	13.80 (3.84, 49.54)	< 0.001

Men with a stapled anastomosis had a threefold higher rate of conversion (13 (34 per cent) of 38 *versus* 18 (11.1 per cent))

CLASICC, Lancet 2005

Laurent C, Br J Surg 2007



## Conversion



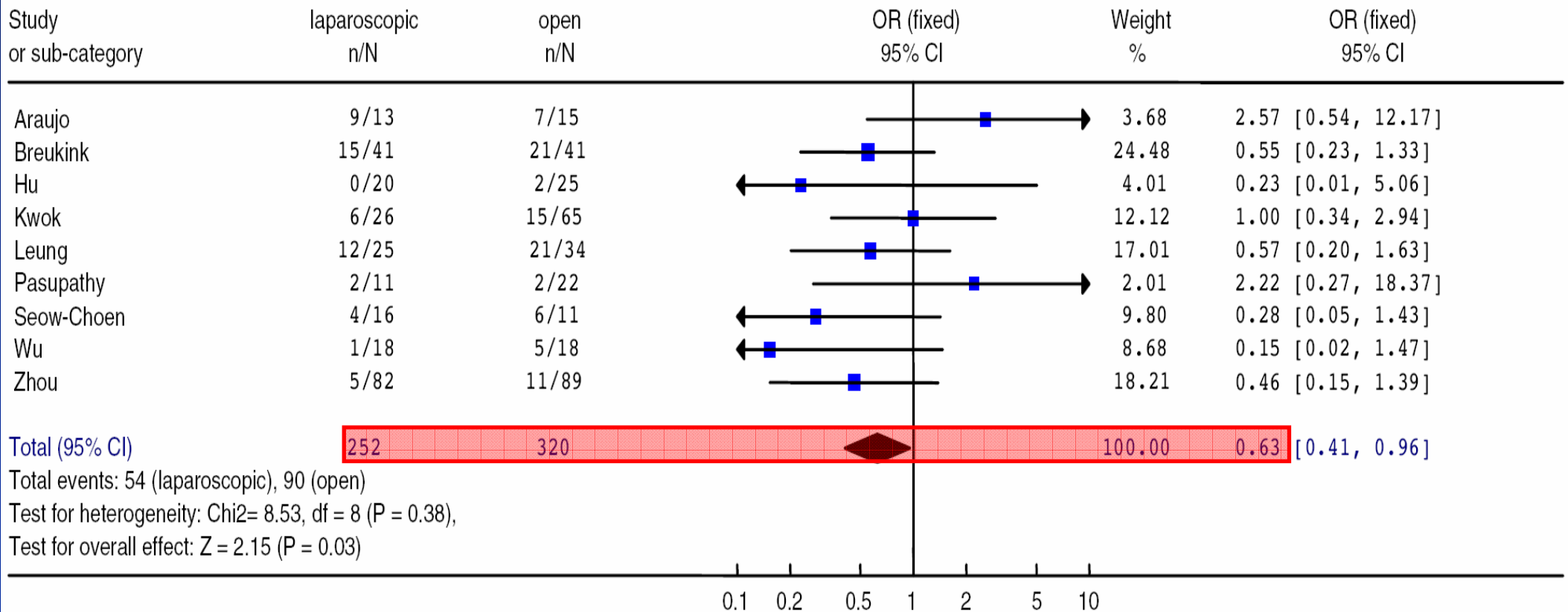
- **Expérience de Beaujon : 2005-2009** **n=142**
  - 84 hommes – 62,8 ans (extr : 21-89)
  - Pôle inf tumoral / MA : 70 mm (extr : 10-150)
  - **Conversion : 6% (n=8)**
    - » Fixation tumorale : 2
    - » Dissection : 4
    - » Hémorragie : 2



# Morbidité péri opératoire

## Meta-analysis of short-term outcomes after laparoscopic resection for rectal cancer

Comparison: Morbidity rate  
Outcome: laparoscopic vs open





# Morbidité péri opératoire

Meta-analysis of short-term outcomes after laparoscopic resection for rectal cancer

Complication	Laparoscopic events ( <i>n</i> )		Open events ( <i>n</i> )		Odds ratio	<i>P</i>
Mortality	1	254	2	325	0.69 [0.09, 5.34]	0.72
Morbidity	54	252	90	320	0.63 [0.41, 0.96]	0.03
Wound healing disorders	6	285	19	358	0.51 [0.22, 1.18]	0.11
Urinary disorders	21	285	36	358	0.64 [0.35, 1.20]	0.17
Cardiopulmonary diseases	9	285	16	358	0.69 [0.31, 1.53]	0.36
All leakage	7	285	12	358	0.74 [0.29, 1.85]	0.52
All abscess	3	285	6	358	0.79 [0.23, 2.71]	0.71



# Morbidité péri opératoire

Long-Term Morbidity and Oncologic Outcomes of Laparoscopic-Assisted Anterior Resection for Upper Rectal Cancer: Ten-Year Results of a Prospective, Randomized Trial

Dis Colon Rectum 2009; 52: 558–566

	<i>Lap group</i> (n = 76)	<i>Open group</i> (n = 77)
Anastomotic bleeding	1	2
Anastomotic leak	1 (1)	4 (3)
Intra-abdominal bleeding	–	1 (1)
Intra-abdominal abscess	1	2
Wound infection	5	9
Chest infection	2	2
Respiratory failure	1	–
Arrhythmia	–	1
Acute coronary syndrome	1	1
Transient ischemic attack	1	–
Urinary tract infection	8	3
Urinary retention	5	3
Strangulated incisional hernia	1 (1)	–
Prolonged ileus	1	2
Others	3	6
Reoperation	2	4
Operative mortality (%)	2 (2.6%)	3 (3.9%)
Total number of patients with short-term morbidity (%)	23 (30.3%)	24 (31.2%)



## Morbidité péri opératoire

- **Morbidité globale** 25%
  - Sepsis pelvien 14%
  - Fistule anastomotique 8%

Laurent C, Br J Surg 2007

- **Facteurs de risque**

Homme avec ACR mécanique

58% vs 17% P<0,001

- **Conversion**

Conversion rapide

	Odds ratio	P*
Morbidity		
Sex (M versus F)	6.25 (2.67, 14.58)	<0.001
Type of anastomosis (stapled versus handsewn)	3.74 (1.80, 7.33)	0.010

	No. of patients	No. with morbidity	P†
Conversion			0.143
No	169	39 (23.1)	
Yes	31	11 (35)	



## Morbidité péri opératoire



- n=142 patients
- Morbidité globale : n=45 **31%**
- Fistule anastomotique : n=17 **12%**
  - FA asymptomatique n=2
  - FA clinique n=15 **10%**
    - » Péritonite n=6
- Réintervention chirurgicale n=10 **7%**
- Conversion: 3/8 (**37%**) vs 42/134 (**31%**) **NS**



# Morbidité à long terme

## Long-Term Morbidity and Oncologic Outcomes of Laparoscopic-Assisted Anterior Resection for Upper Rectal Cancer: Ten-Year Results of a Prospective, Randomized Trial

Dis Colon Rectum 2009; 52: 558–566

	Lap group (n = 74)	Open group (n = 74)
Adhesion-related bowel obstruction	2 (0)	14 (5)
Incisional hernia	4 (4)	5 (2)
Parastomal hernia	1 (1)	0
Rectovaginal fistula	1 (1)	0
Total number of patients with long-term morbidity (%)	8 (10.8%)	19 (25.7%)
Total number of patients requiring operation for long-term morbidity (%)	6 (8.1%)	7 (9.5%)

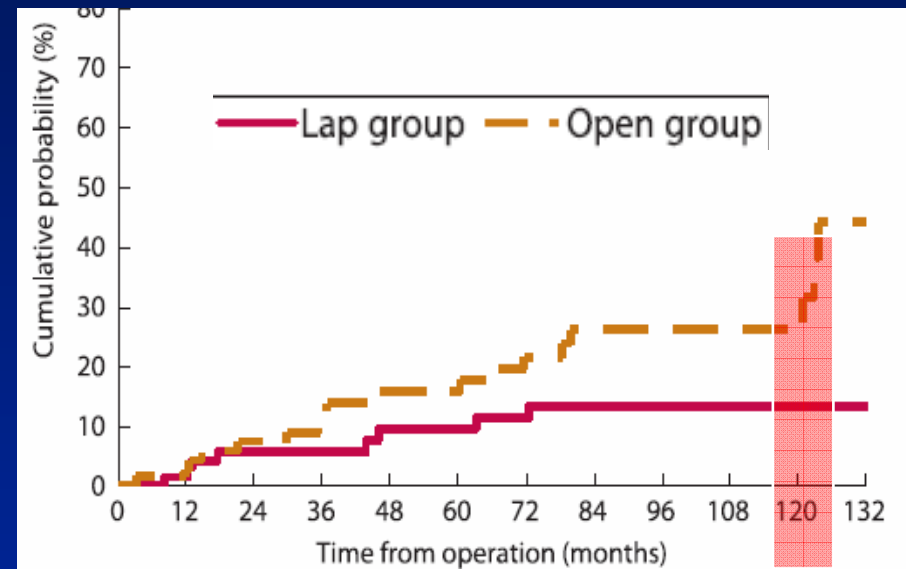


FIGURE 2. Cumulative probability of long-term morbidity ( $P = 0.012$ , log-rank test).



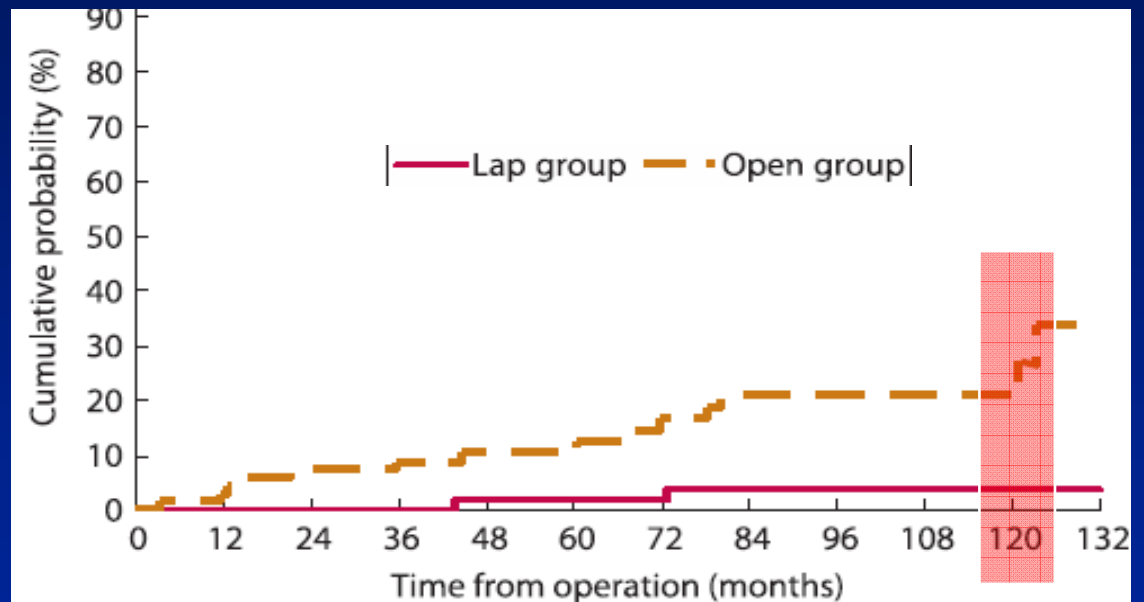
# Occlusions intestinales

Long-Term Morbidity and Oncologic Outcomes of Laparoscopic-Assisted Anterior Resection for Upper Rectal Cancer: Ten-Year Results of a Prospective, Randomized Trial

Dis Colon Rectum 2009; 52: 558–566

Occlusions 19% vs 3%

Réopération 7% vs 0%



**FIGURE 3.** Cumulative probability of adhesion-related bowel obstruction ( $P = 0.001$ , log-rank test).

## Long-term wound advantages of the laparoscopic approach in rectal cancer

- Winslow ER, Surg Endosc 2002

Abcès : 13.5% (coelio) vs 11% (laparo)

Eventration : 24% mini-laparotomie (vs 19% laparo) (NS)

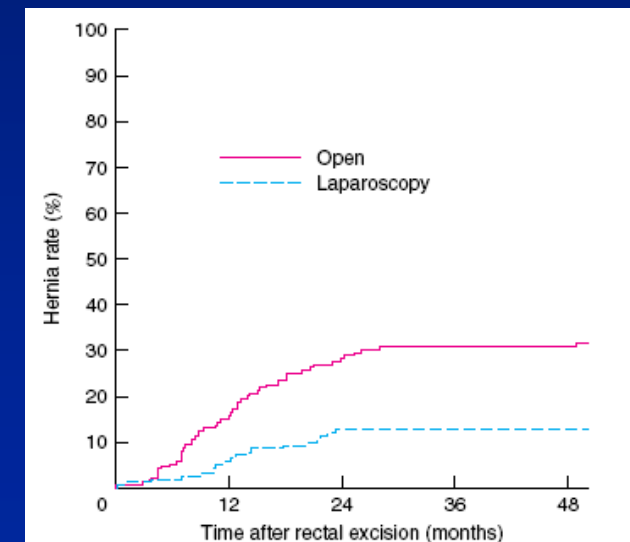
- Laurent C, Br J Surg 2007 (suivi 5 ans)

— 13% (coelio) vs 33% (laparo) (P<0,001)

— 2% (coelio) vs 29% (laparo)

16% (conversion)

33% (laparo pour complications)

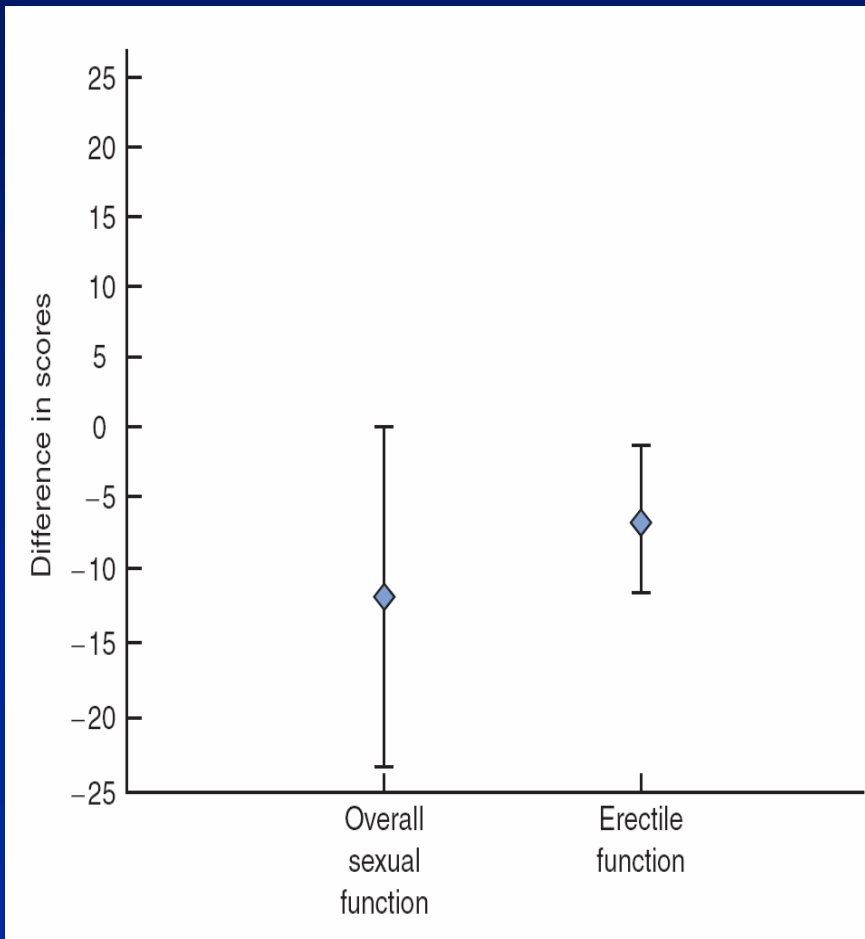




## Bladder and sexual function following resection for rectal cancer in a randomized clinical trial of laparoscopic *versus* open technique

*Quah HM, Br J Surg 2002 : Altération fonction sexuelle homme*

*47% coelio vs 5% laparo*



- **Fonction vésicale : NS**
- **Altération de la fonction sexuelle chez l'homme (P=0,06) :**
  - 2 facteurs de risque :
    - » TME vs PME (OR: 6.38)
    - » Conversion en laparotomie (OR: 2.86)
  - Femmes : NS

Jayne DG Br J Surg 2005



## Impact of laparoscopic surgery on bladder and sexual function after total mesorectal excision for rectal cancer

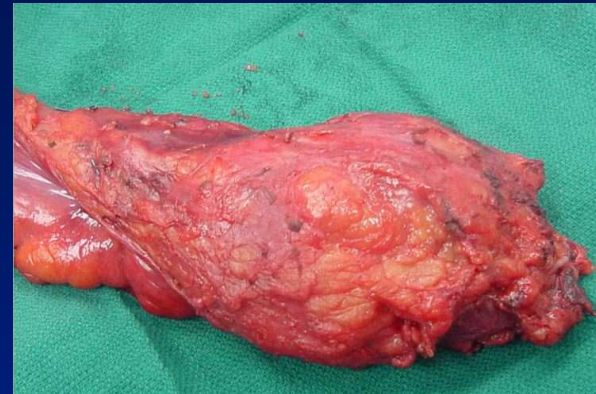
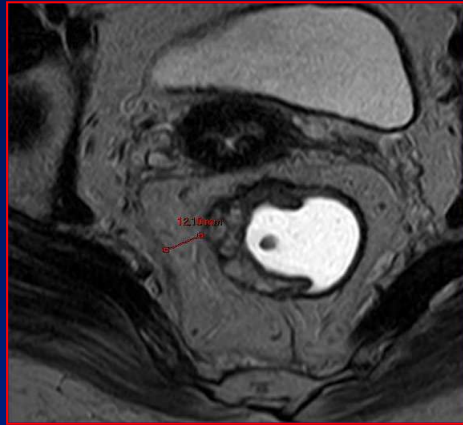
Asoglu O, Surg Endosc 2009

- 29 patients laparotomie vs 34 patients laparoscopie

	Laparotomie	Laparoscopie	P
<b>Radiothérapie</b>	86%	73%	NS
<b>Dysfonction vésicale</b>	3%	9%	NS
<b>Impuissance sexuelle</b>	29%	5%	0.04
<b>Libido femme</b>	50%	7%	0.03



# Qualité d'exérèse oncologique chirurgicale



**Marge latérale : R1**

**RA et AAP : 16% (coelio) vs 14% (laparo) NS**

**RA : 12% (coelio) vs 6% (laparo) NS**



# The oncological safety of laparoscopic total mesorectal excision with sphincter preservation for rectal carcinoma

## Qualité d'exérèse macroscopique et microscopique

	<i>n</i>
Macroscopic assessment	92
A. Complete mesorectum	81 (88)
B. Subcomplete mesorectum (injury $\leq$ 2 cm)	5 (5)
C. Inadequate mesorectum (injury $>$ 2 cm)	6 (7)
D. Palliative resection (perforation or tumor transection)	0
Microscopic assessment	144
R0 resection	134 (93)
R1 resection <sup>a</sup>	10 (7)
Positive distal margin	3 (2)
Positive circumferential margin	9 (6)



## The oncological safety of laparoscopic total mesorectal excision with sphincter preservation for rectal carcinoma

### Etude cas-témoin

	Laparoscopy ( <i>n</i> = 144)	Open procedure ( <i>n</i> = 144)	<i>p</i> -value
Age	63	63	1.00
Male : Female	88:56	88:56	1.00
T1T2/T3	25/119	25/119	1.00
Preoperative radiotherapy	120	115	0.54
Dose of radiotherapy (Gy)	45 (36–63)	44 (36–54)	<0.01
Tumor height (cm)	5.5 (1–12)	6.3 (1–12)	<0.01
Number of lymph nodes	10 (0–42)	12 (1–58)	0.03
Distal resection margin (mm)	20 (5–80)	30 (5–80)	<0.01
Circumferential margin (mm)	7 (0–30)	8 (0–20)	0.41
Positive distal margin	3 (2%)	3 (2%)	1.00
Positive circumferential margin	9 (6%)	8 (6%)	1.00
R0 resection	134 (93%)	130 (90%)	0.52



## Qualité d'exérèse



- Nombre de ganglions prélevés : 14 (extr: 2-46)
- Marge distale : 30 mm (extr: 0-90)
- Marge latérale : 8,5 mm (extr: 0-50)
- Marge distale positive : 2 (1,6%)
- Marge latérale positive : 10 (8%)
- Résection R0 : 111 (91%)



## Contrôle pelvien

### CLASICC : Récidives à 3 ans

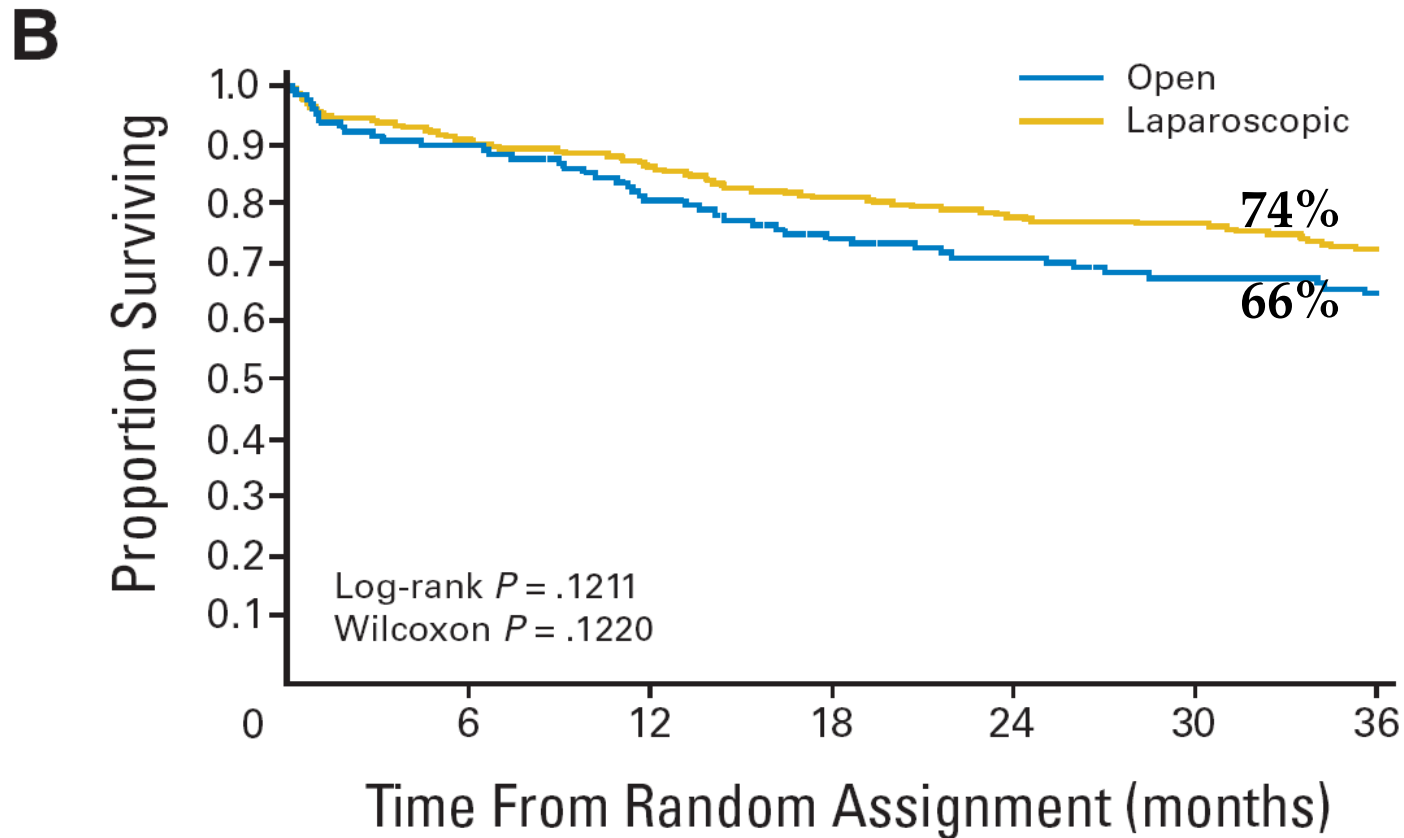
Rate	Open (%)	Laparoscopic (%)
Local recurrence rate		
All patients	7.9	8.6
Patients with colon cancer	6.0	7.3
Patients with rectal cancer, AR and APR	10.1	9.7
Distant recurrence rate		
All patients	14.3	15.2
Patients with colon cancer	12.5	11.3
Patients with rectal cancer, AR and APR	16.4	18.6

Abbreviations: AR, anterior resection; APR, abdominoperineal resection.



# Survie

## CLASICC : Survie à 3 ans



No. at risk

Open	128	115	102	92	85	77	68
Laparoscopic	253	230	217	202	189	179	165



## Résultats oncologiques séries > 100 patients

TABLE 5. Oncological Outcomes After Laparoscopic Rectal Surgery

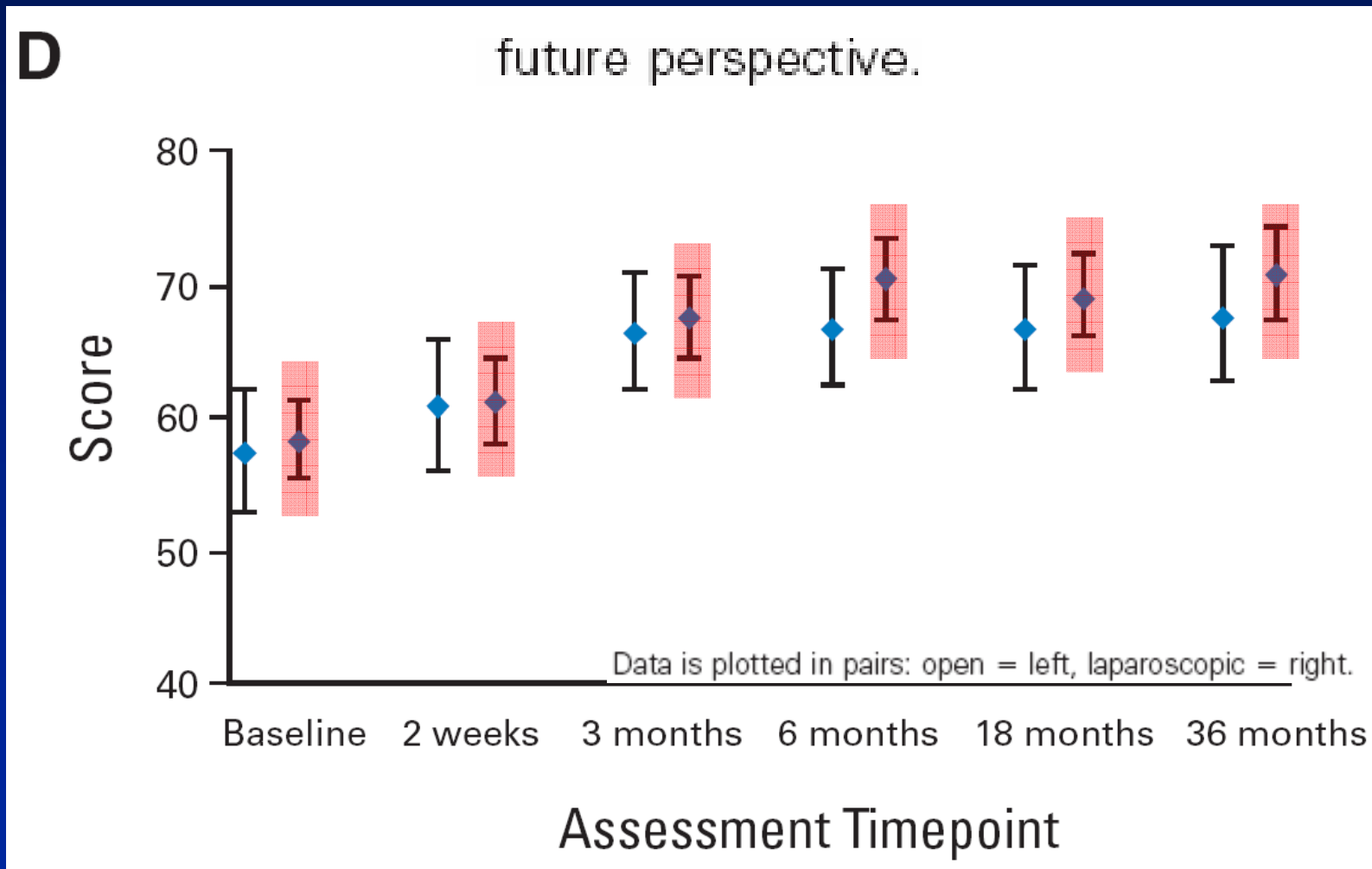
Author (Year)	Patients (n)	Follow-Up Period (mo)	Port-Site Recurrence	Loco-Regional Recurrence	Metastatic Recurrence	Five-Year Survival
Scheidbach (2002) <sup>7</sup>	308	24.8	0%	6.6%	10.4%	86.6%
Morino (2003) <sup>8</sup>	100	45.7	1.4%	4.2%	22.6%	74%
Leroy (2004) <sup>9</sup>	102	36	0%	6%	26%	65%
Leung (2004) <sup>10</sup>	203	52.7	0%	6.6%	18%	76.1%
Barlehner (2005) <sup>11</sup>	194	46.1	0.5%	4.1%	11.7%	78.9%
Present series	579	56	0.4%	7.4%	22.9%	76%

**43 mois      0.3%      6%      18% 76%**



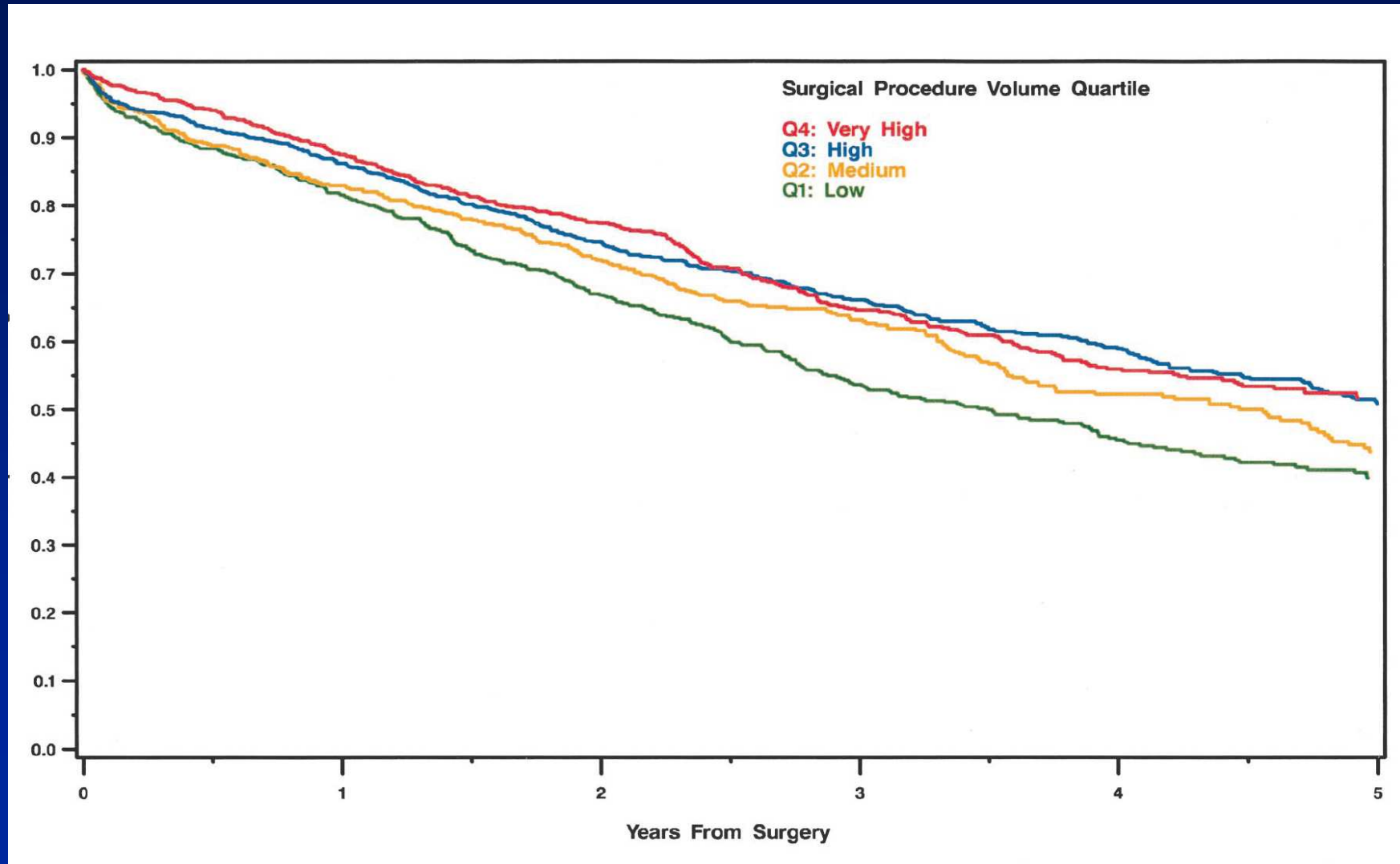
# Qualité de vie

## CLASICC : Qualité de vie à 3 ans



# Survie après proctectomie

(en fonction de l'expérience du chirurgien)



# Cancer du rectum et laparoscopie

Sous réserve expérience colorectale et laparoscopique ...

- **Résultats opératoires satisfaisants :**

- Conversion 10-15%
- Pas de surmorbidity si conversion mais doit être rapide !
- Morbidity péri opératoire similaire voire meilleure ?
- Morbidity à long terme meilleure : Eventration et occlusions
- Troubles sexuels moindres ?

- **Résultats oncologiques similaires**

# Practice Parameters for the Management of Rectal Cancer (Revised)

The Standards Practice Task Force  
The American Society of Colon and Rectal Surgeons

4. Laparoscopic-assisted resection of rectal cancer is feasible but requires specific surgical expertise. Its oncologic effectiveness remains uncertain at this time. Level of Evidence: Class II; Grade of Recommendation: B.

## Cancer du rectum et laparoscopie

- Donc, oui, on peut le faire ... mais :
  - Expérience chirurgicale colorectale et laparoscopique ++
  - Commencer avec les cas les plus favorables :
    - » Cancer du haut rectum
    - » Femmes et hommes de poids normal
    - » Éviter absolument le pire des cas : homme, obèse, à pelvis étroit, avec cancer T3 du moyen rectum