



Pelvic Exenteration For Primary And Recurrent Rectal Cancer

Des Winter



ST VINCENT'S UNIVERSITY HOSPITAL
DUBLIN, IRELAND



PRINCIPLES

Assess and stage patient

Be clear about treatment options

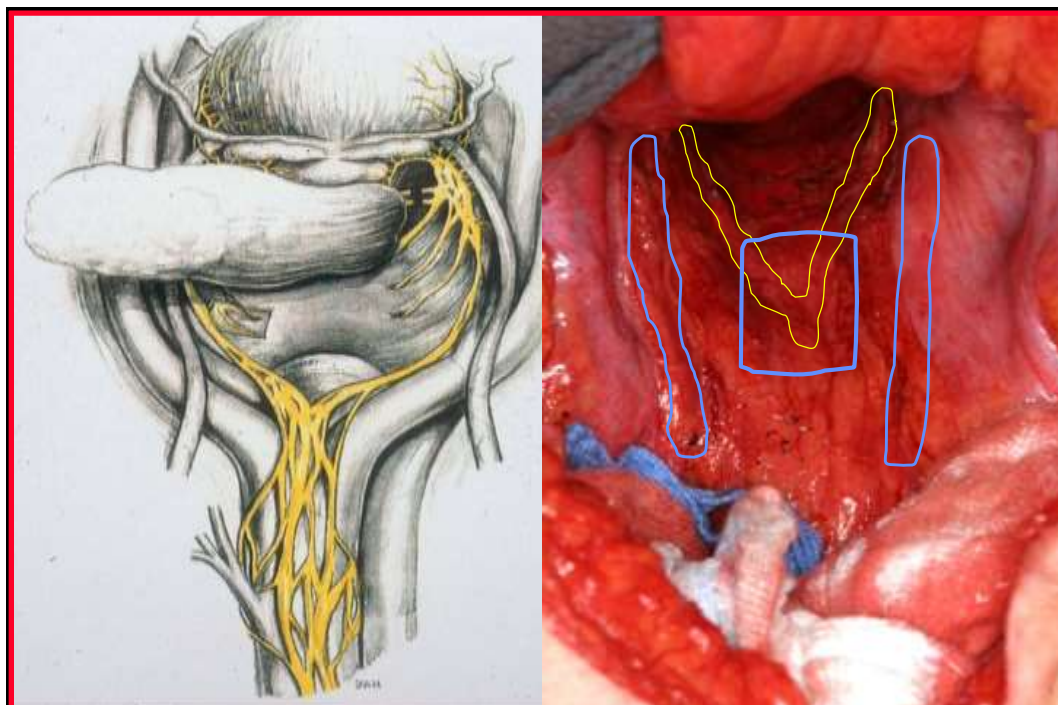
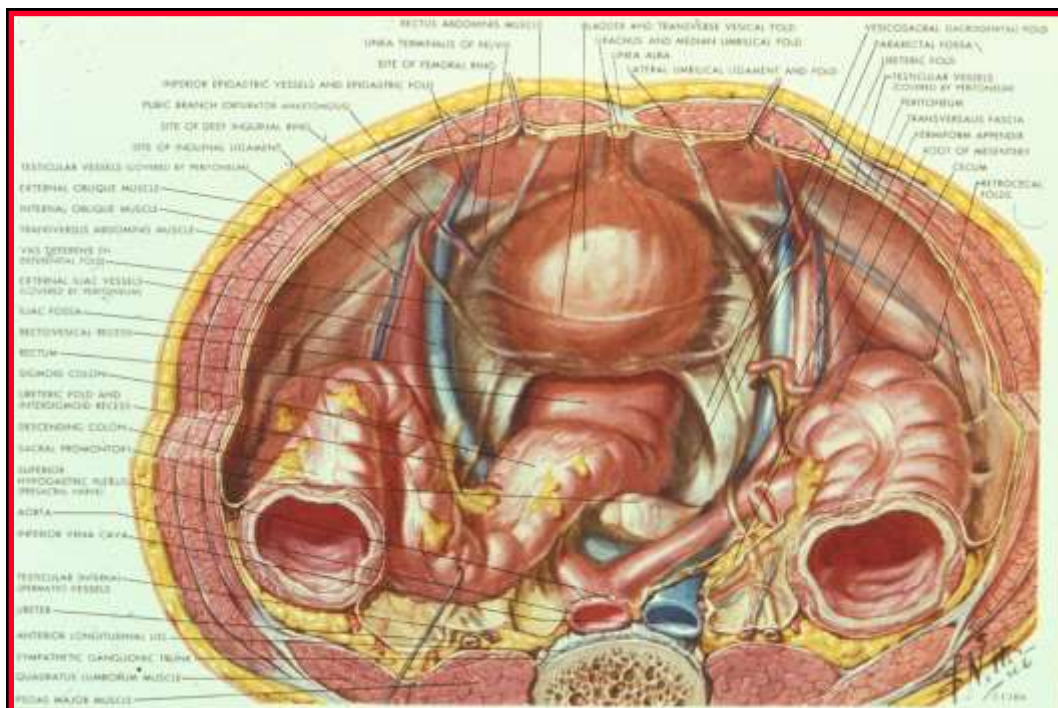
Clear margin if possible

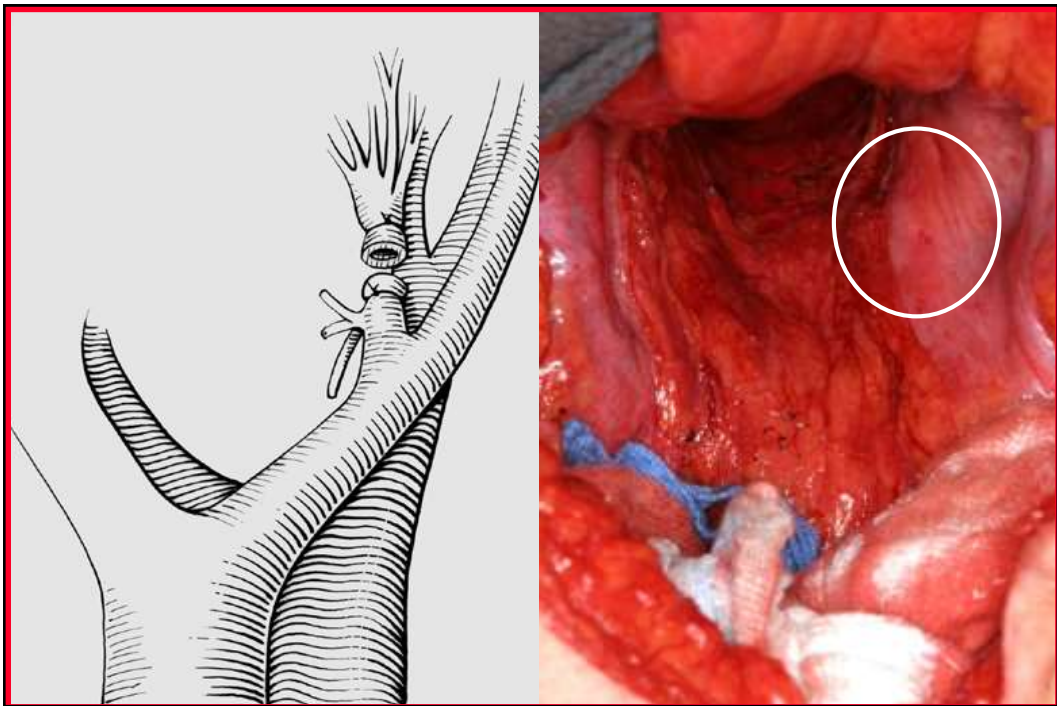
Down-stage if not

Exenterate only in appropriate circumstances

Follow patient and re-resect if appropriate

Good surgeons know when NOT to operate





Radiation ?

Cancer, 2002 Sep 1;95(5):1144-50.

Long-term results of reirradiation for patients with recurrent rectal carcinoma.

Mohiuddin M¹, Marks G, Marks J.

Controversial and Lacking Consensus



Br J Surg. 2013 Jul;100(8):1009-14. doi: 10.1002/bjs.9192.

Consensus statement on the multidisciplinary management of patients with recurrent and primary rectal cancer beyond total mesorectal excision planes.

Beyond TME Collaborative.



2,475 patients

1,291 – LARC

1,184 - RRC

Europe:

St Vincent's Dublin - **Ireland**
 Royal Marsden – **UK**
 Royal Devon & Exeter – **UK**
 Singleton Swansea – **UK**
 Addenbrooks Hospital – **UK**
 St Mark's London – **UK**
 Leeds Teaching Hospital – **UK**
 St Thomas London – **UK**
 University Hospital Bologna – **Italy**
 University Eindhoven – **Netherlands**
 University MC Rotterdam – **Netherlands**
 VU Medical Center – **Netherlands**
 Radboud Medical Center - **Netherlands**
 University Erlangen – **Germany**
 Heidelberg University - **Germany**
 University General Hospital Madrid – **Spain**
 Karolinska Institute – **Sweden**
 Skane University Hospital - **Sweden**
 Aarhus University Hospital – **Denmark**

Asia:

National Cancer Hospital – **Japan**
 Queen Mary - **Hong Kong**
 Singapore General Hospital - **Singapore**

Australia/ New Zealand:

University of Sydney – **Australia**
 Peter MacCallum – **Australia**
 Christchurch Hospital – **New Zealand**

USA:

Cleveland Clinic – **USA**

	LARC	RRC
No. of patients	1,291	1,184
Median Age (IQR)	63 (17)	63 (14)
Median BMI (IQR)	24 (6)	25 (6)
Male Gender (%)	778 (60%)	752 (63%)
No. receiving Neoadjuvant Tx (%)	1,009 (78%)	578 (49%)
Median length of stay (IQR)	16 (14)	15 (16)
30-day Surgical Re-intervention rate (%)	111 (8.6%)	85 (7.2%)
30-day complication rates (%)	488 (37%)	380 (32%)
30-day mortality rates (%)	19 (1.5%)	21 (1.8%)
Median Time to RECURRENCE (IQR)	14 months (20)	12 months (14)
Median OVERALL SURVIVAL (IQR)	33 months (42)	30 months (35)

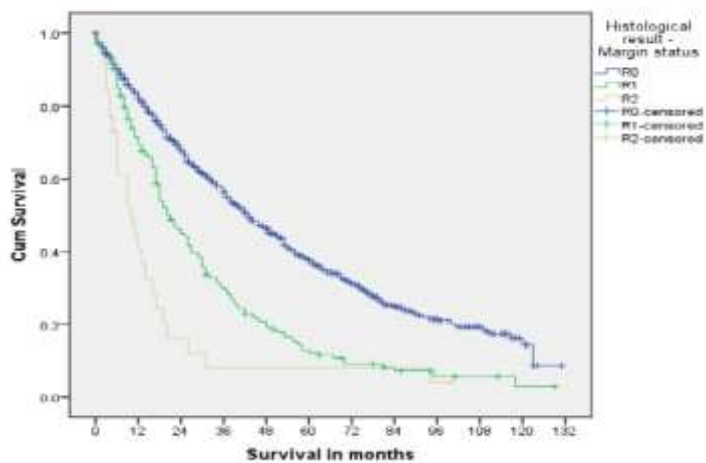
	LARC	RRC
Mean Length of Surgery (mins) (STD)	433mins (184)	508mins (200)
Median No. RCC Units Transfused (IQR)	3 (4)	5 (7)
R0	80%	55%
R1	13%	31%
R2	2.5%	7%
Unknown	4.5%	7%
Median Node Yield (IQR)	14 (14)	6 (9)

Locally advanced rectal cancer

	Total Number	Margin Status			p-value
		R0 %	R1 %	R2 %	
Neoadjuvant Therapy					
Yes	969	83.7	14.6	1.8	
No	120	75.8	15.8	8.3	<0.001 ^c
Chemotherapy alone	34	79.4	17.6	2.9	
Radiotherapy alone	134	84.3	13.4	2.2	
Chemoradiotherapy	802	83.7	14.7	1.6	0.916 ^z
		Median (IQR)	Median (IQR)	Median (IQR)	
Time to recurrence (months)	347	15(24)	12(17)	8(12)	0.053 ^k

^c = chi squared test, ^k=kruskal-wallis test

Locally advanced rectal cancer - median OS



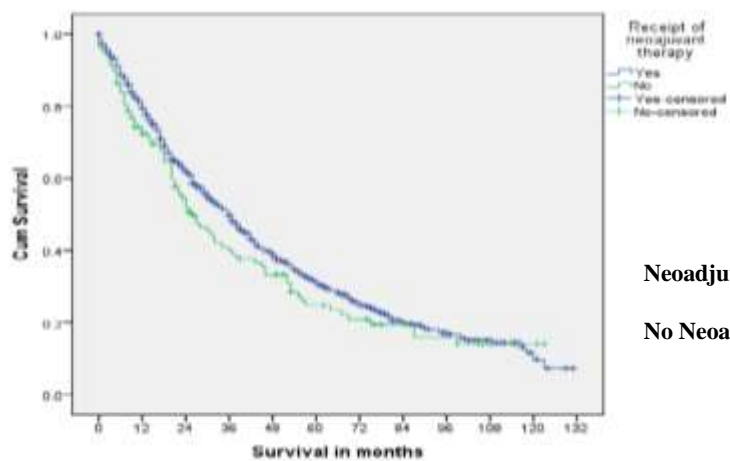
R0 = 41 months

R1 = 21 months

R2 = 10 months

(log rank $p < 0.001$)

Locally advanced rectal cancer - Neoadjuvant Therapy

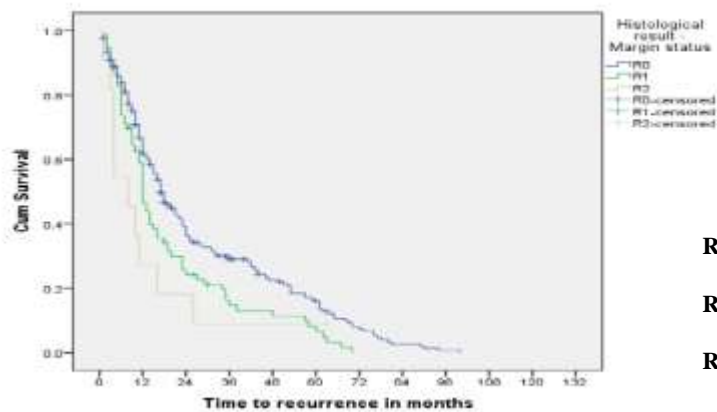


Neoadjuvant = 36 mths

No Neoadjuvant = 26 mths

(log rank $p = 0.189$)

Locally advanced rectal cancer - Time To Recurrence



R0 = 17 months

R1 = 12 months

R2 = 8 months

(log rank $p=0.003$)

Locally advanced rectal cancer

		Neoadjuvant therapy		p-value	Odds Ratio ^a
		Yes	No		
Age in years (Mean[Std Dev])		61.1[12.4]	64.7[12.8]	0.002 ^t	
Gender					
Male	618	89.8	10.2		
Female	390	86.9	13.1	0.123 ^t	
Death at 30 days					
Yes	19	78.9	21.1		
No	1118	88.8	11.2	0.260 ^t	
Complications at 30 days					
Yes	442	91.6	8.4		
No	695	86.8	13.2	0.012 ^t	1.67[1.12-2.50]
Readmission within 30 days					
Yes	90	94.4	5.6		
No	1047	88.2	11.8	0.071 ^t	
Inpatient at 30 days					
Yes	171	84.8	15.2		
No	966	89.3	10.7	0.084 ^t	
Surgical re-intervention					
Yes	98	87.8	12.2		
No	1039	88.7	11.3	0.769 ^t	
Radiotherapy re-intervention					
Yes	24	90.5	9.5		
No	1063	88.5	11.5	0.597 ^t	
		Median [IQR]	Median [IQR]		
Hospital length of stay (days)	1018	16[12]	16[18]	0.402 ^m	
Time to recurrence (months)	329	14[22]	15[13]	0.864 ^m	

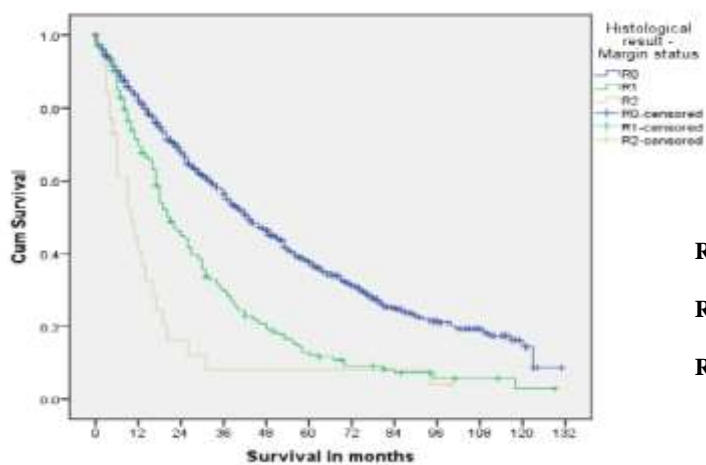
^aUnadjusted Odds Ratio, c = chi squared test, t = student's t-test, m = mann-whitney u test, f = Fisher exact test

Recurrent rectal cancer

	Total Number	Margin Status			p-value
		R0	R1	R2	
		%	%	%	
Neoadjuvant Therapy					
Yes	584	59.9	32.7	7.4	
No	482	56.4	34.6	8.9	p=0.439 ^c
Chemotherapy					
Chemotherapy alone	59	49.2	35.6	15.3	
Radiotherapy alone	52	57.7	34.6	7.7	
Chemoradiotherapy	446	60.3	33.6	6.1	p=0.119 ^c
Time to recurrence					
		Median (IQR)	Median (IQR)	Median (IQR)	
Time to recurrence (months)	266	14(15)	10(12)	6(9)	p<0.001 ^k

c = chi squared test, k=kruskal-wallis test

Recurrent rectal cancer - Median OS



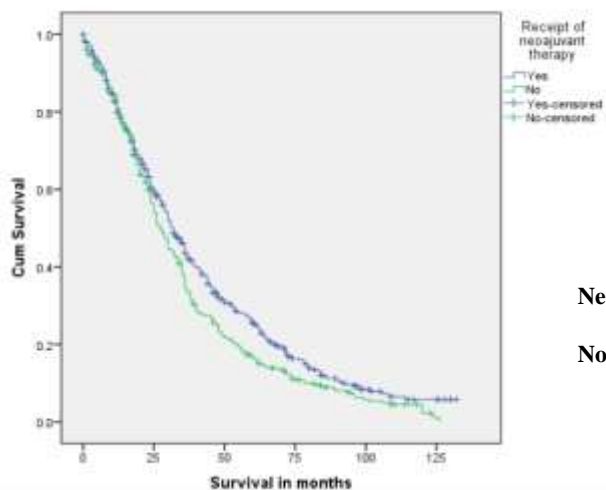
R0 = 36 months

R1 = 27 months

R2 = 16 months

(log rank p<0.001)

Recurrent rectal cancer - Neoadjuvant Therapy

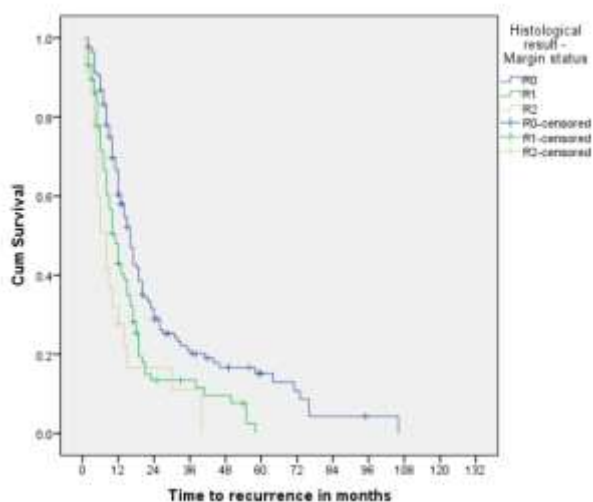


Neoadjuvant = 32 mths

No Neoadjuvant = 27 mths

(log rank $p=0.008$)

Recurrent rectal cancer - Time To Recurrence



R0 = 16 months

R1 = 11 months

R2 = 8 months

(log rank $<p=0.001$)

Recurrent rectal cancer

	Total Number	Neoadjuvant therapy		p-value	Odds Ratio ^a
		Yes Median(IQR) %	No Median(IQR) %		
Age in years	1123	62.3(10.8)	61.7(11.5)	p=0.428 ^b	
Gender					
Male	718	54.0	46.0		
Female	411	55.0	45.0	p=0.758 ^b	
Death at 30 days					
Yes	19	52.6	47.4		
No	1110	54.4	45.6	p=0.877 ^c	
Complications at 30 days					
Yes	875	61.3	58.7		
No	754	50.9	49.1	p=0.001 ^d	1.53(1.19-1.97)
Readmission within 30 days					
Yes	44	72.7	27.3		
No	1085	53.6	46.4	p=0.013 ^d	2.53(1.18-4.52)
Inpatient at 30 days					
Yes	179	53.1	46.9		
No	858	54.4	45.6	p=0.740 ^c	
Surgical re-intervention					
Yes	85	62.4	37.6	p=0.125 ^c	
No	1044	53.7	46.3		
Radiological re-intervention					
Yes	55	70.9	29.1		
No	1074	53.5	46.5	p=0.012 ^d	2.12(1.17-3.83)
		Median (IQR)	Median (IQR)		
Hospital length of stay (days)	877	15(15)	15(18)	p=0.712 ^c	
Time to recurrence (months)	267	12(13)	10(11)	p=0.045 ^c	

^aUnadjusted Odds Ratio, ^bc = chi squared test, ^ct = student's t-test, ^dcochran-mantel-haensley g test

Margin status remains the most important determinant of cancer outcome

Neoadjuvant therapy improves margin status in locally advanced rectal cancer

improves overall survival in recurrent rectal cancer (modestly)

increases the risk of postoperative complications

should be reserved for patients with threatened / compromised margins

Volume and specialisation of centre may be factors in cancer outcomes

Type of reconstruction, quality of life, patient reported outcomes remain to be determined