

## LOCAL THERAPY FOR RECTAL CANCER

Over 41,000 new cases in 2002 and 8500 rectal cancer related deaths

### Patient selection

Patient related factors.

- Significant comorbidity
- Refuses colostomy
- Palliative local procedure

Tumor characteristics.

- Location: 6 to 8 cm from the anal verge.
- Size and circumference: < 4 cm and less than 1/3 of rectal circumference.
- Mobility: fixed tumors are not appropriate for local excision

Histopathologic features.

- Depth of rectal wall invasion correlates with lymph node involvement

T1	T2	T3
6-12%	17-22%	66%

- Tumor grade: the degree of tumor differentiation affects the local invasion, rate of recurrences and lymph node involvement.
- Mucinous tumors are associated with higher incidence of lymph node metastasis and higher incidence of local recurrence.

### Patient evaluation

- Digital rectal examination
- Proctoscopy
- Endorectal ultrasound ( ERUS)
- Biopsy
- Colonoscopy
- CXR, abdominal CT

### Procedures

- Full-thickness excision
- Posterior approaches
- Transanal excision
- Transanal endoscopic microsurgery (TEM)
- Ablative procedures
- Electrocoagulation
- Endocavitary radiation

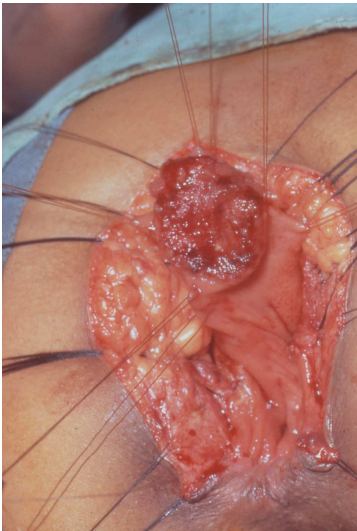
### Posterior approaches

- **Trans-sacral resection ( Kraske procedure).** The patient is placed in the prone Jackknife position. A vertical midline is made in the sacral region. The coccyx is excised. The posterior

rectal wall is exposed. A sleeve resection is performed with primary anastomosis, or a full-thickness excision with a 1 cm margin.



- **Trans-sphincteric resection (York Mason procedure).** Similar approach to the Kraske procedure, but a coccygectomy is not performed; instead the entire sphincter complex is divided in the posterior mid line.

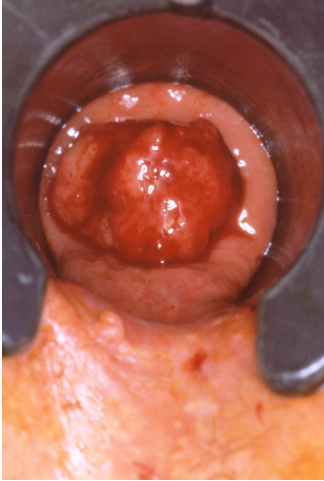


- Both procedures have been losing popularity over the years because of the high incidence of complication and the availability of other options.

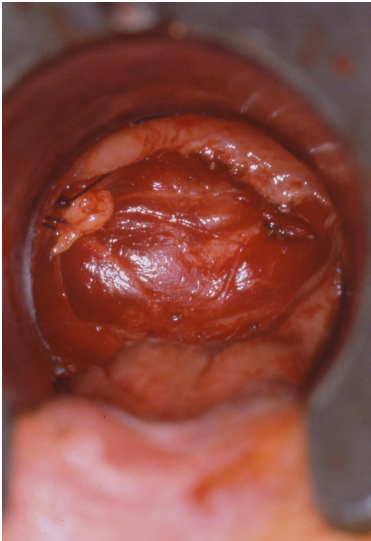
### **Transanal Approaches**

#### **Transanal excision**

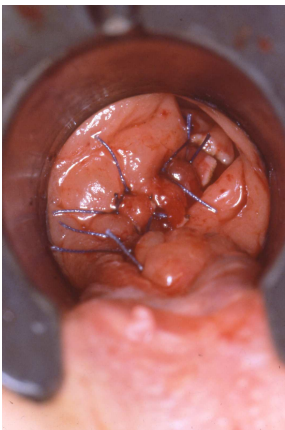
- Among the local procedures, transanal excision is the most commonly performed. The procedure involves full-thickness excision of the rectal wall down to the perirectal fat with a 1 cm circumferential margin.



view through anoscope prior to excision



visible prostate after excision



Suture closure of defect

- **Outcome**

**Results of transanal excision without adjuvant therapy: representative studies**

Study	Tumor Stage	F/U	LR	Survival
Steele* CALGB (1999)	T1 (N = 59)	48 Mos.	5 %	87 % <sup>**</sup>
Russell* RTOG 89-02 (2000)	T1 (N = 14) <sup>¶</sup>	6.1 Yrs.	7 %	85 % <sup>***</sup>
Mellgren (2000)	T1 (N = 69)	4.4 Yrs.	18 %	72 % <sup>†</sup>
	T2 (N = 39)		47 %	65 %

\* Prospective study.

<sup>\*\*</sup> 6-year overall survival.

<sup>¶</sup> T1 lesions (Grade 1-2, ≤3 cm, no lymphovascular invasion, margins > 3 mm).

<sup>\*\*\*</sup> 5-year overall survival based on extrapolation from overall survival curve.

<sup>†</sup> 5-year overall survival.

*Abbreviations:* LR, Local recurrence; F/U, follow-up.

**Results of transanal excision with adjuvant radiation±chemotherapy: representative studies**

Study	Tumor Stage	F/U	RT/Chemo	LR	Survival
Bleday* (1997)	T0 (N = 1)	40.5 Mos.	5400 cGy	0 %	94.4 % <sup>‡</sup>
	T1 (N = 21)		5-FU (T2, T3)	9 %	
	T2 (N = 21)			0 %	
	T3 (N = 5)			40 %	
Steele* CALGB (1999)	T2 (N = 51)	48 Mos.	5400 cGy 5-FU	14 %	85 % <sup>‡‡</sup>
Wagman (1999)	T1 (N = 6) <sup>†</sup>	41 Mos.	5,040 cGy (all patients)	0 %	77 % <sup>**</sup>
	T2 (N = 25)		5,580 cGy (pos margins)	24 %	
	T3 (N = 8) <sup>¶</sup>		5-FU (N = 20)	25 %	

\* Prospective study.

<sup>‡</sup> Overall survival for all patients during follow-up period (median 40.5 months).

<sup>‡‡</sup> 6-year overall survival.

<sup>†</sup> T1 with poor pathologic features.

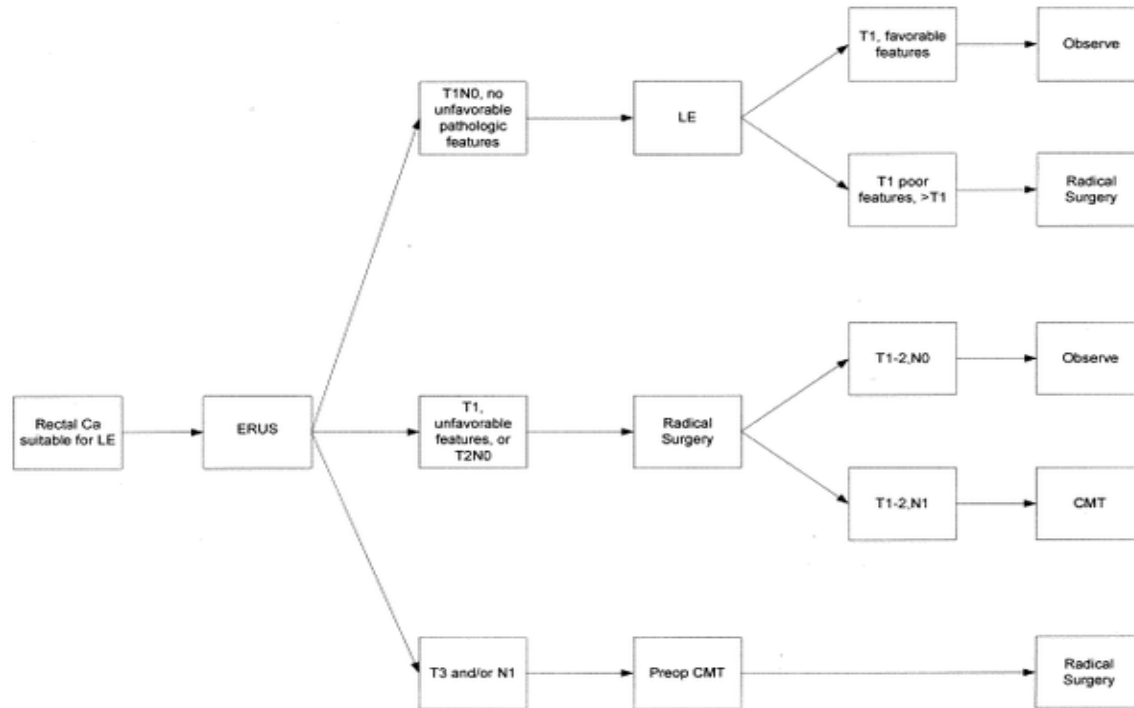
<sup>\*\*</sup> 5-year disease-free survival for all patients.

<sup>¶</sup> T3 patients who were inoperable or refused APR.

<sup>††</sup> 5-year overall survival for 51 patients treated with radiation based on extrapolation from overall survival curve.

*Abbreviations:* LR, Local recurrence; F/U, follow-up; RT/Chemo, radiation and chemotherapy; 5-FU, 5-fluorouracil.

The outcome of transanal excision of rectal tumors greatly depends on the T stage and the grade of differentiation, with local recurrences ranging from 5% to 18% on T1 lesion. This seems to improve with the addition of radio-chemotherapy, especially in T2 lesion.



### Transanal endoscopic microsurgery (TEM)

Was introduced as an alternative technique for early lesions of the middle and upper thirds of the rectum. The procedure is done under CO<sub>2</sub> insufflation through a 40mm operating rectoscope. Endoscopic instruments are inserted and surgery is performed with up to six-fold magnification.

TEM appears to be equivalent to radical surgery for low risk T1 tumors. However it showed to have higher local recurrence and poorer survival in patients with high risk T1 lesion.

### Ablative Procedures

**Electrocoagulation.** It is used in both the curative and palliative settings. Selection criteria include well to moderately well-differentiated T1 adenocarcinomas < 7.5 cm from the anal verge, <4 cm in size.

Due to the high recurrence rate found with this procedure it is indicated in patients too ill to tolerate radical surgery, those that refuse resection or colostomy, and those in need for palliative surgery.

**Endocavitary radiation.** It consists on the administration of direct contact radiation. Total dosage to the tumor is between 10,000 and 12,000 cGy in three or four treatments over a period of 60 days. Five year survival has been reported between 51% and 94%

### References:

- Moore HG, Guillem JG. Local therapy for rectal cancer. *Surgical Clinics of North America*. Oct 2002; 82
- Steinhagen R. Local excision of rectal cancer. The Mount Sinai Experience. Unpublished
- Ramamoorthy SL, Fleshman JW. Surgical treatment of rectal cancer. *Hem/Onc Clinics of North America*. Aug 2002; 16

Jeremy G. Eckstein, M.D.