WEO

The voice of world endoscopy

Staging of rectal pT1 polyps: is there room for improvement?

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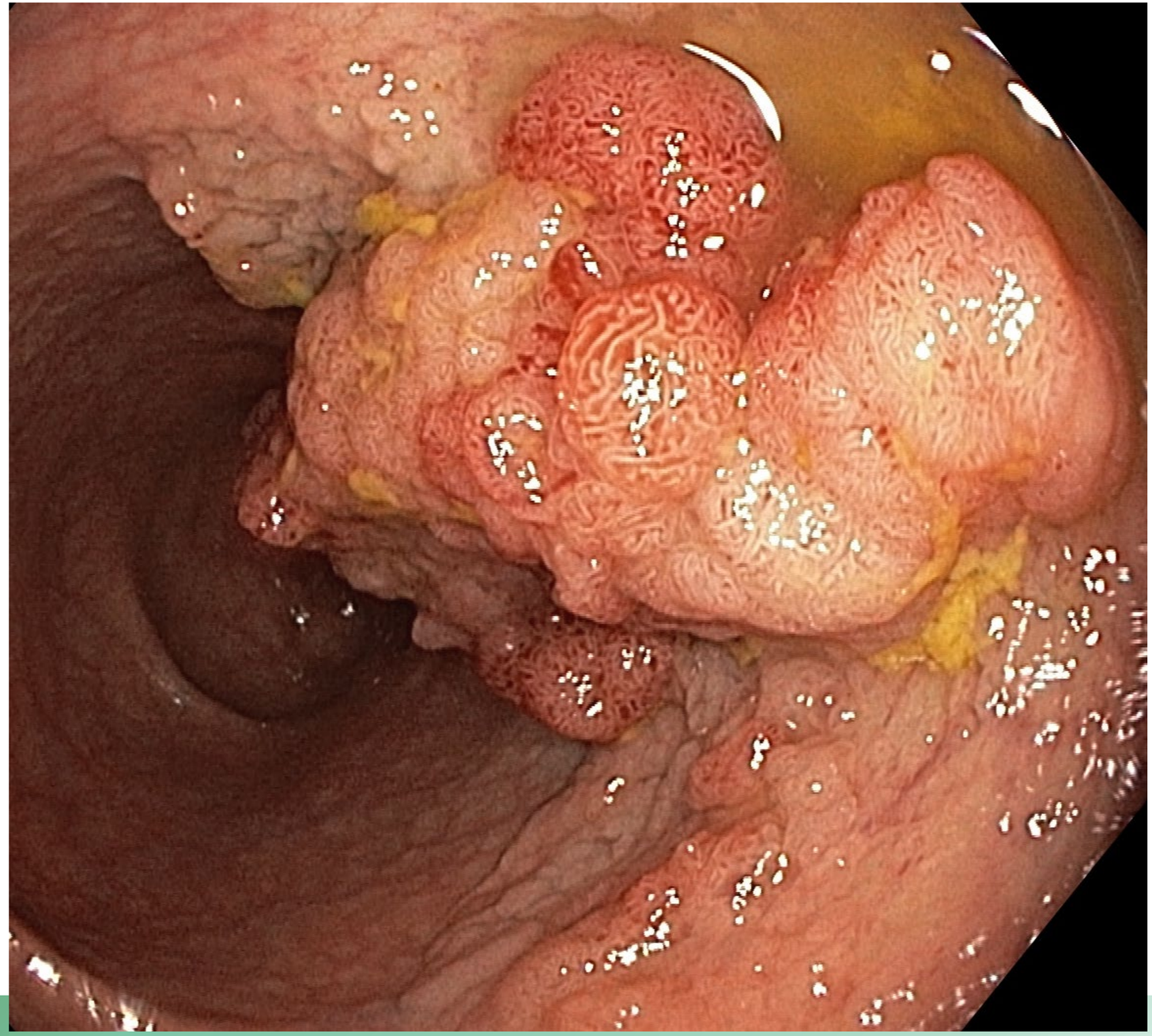
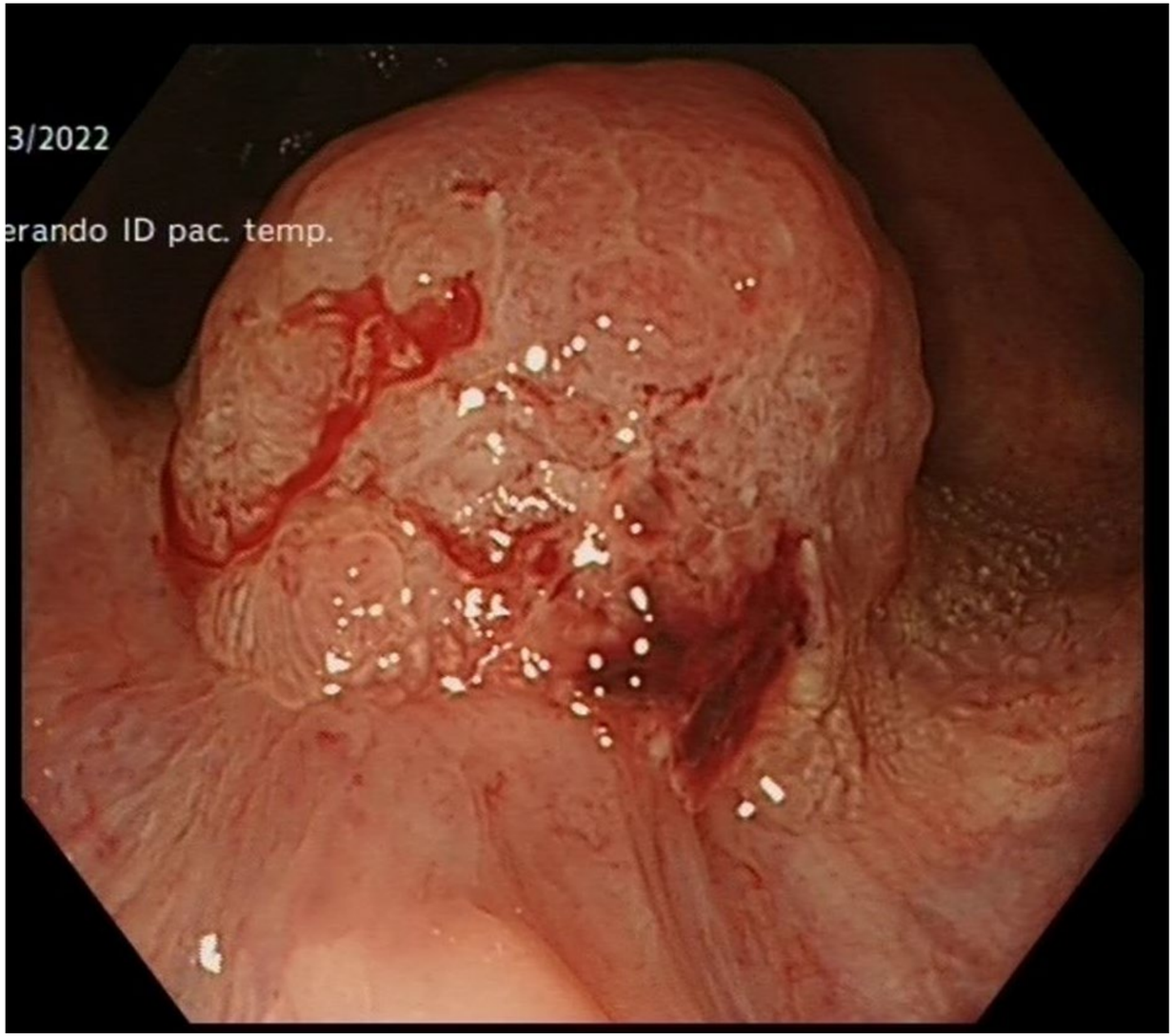
Conflict of interest statement

I herewith declare anything that may potentially be viewed as a conflict of interest during the past three years such as paid or unpaid consultancies, business interests or sources of honoraria payments:

- Clinical advisory board for Fujifilm Europe and Olympus
- Clinical advisory board and share options owner in MiWendo
- Speaker fee from Norgine Iberia, Mayoli, Fujifilm Europe, Medtronic and Olympus Europe
- Research funding from Fujifilm Europe, Casen Recordati, Ziuz and 3-DMatrix

None specifically for this talk

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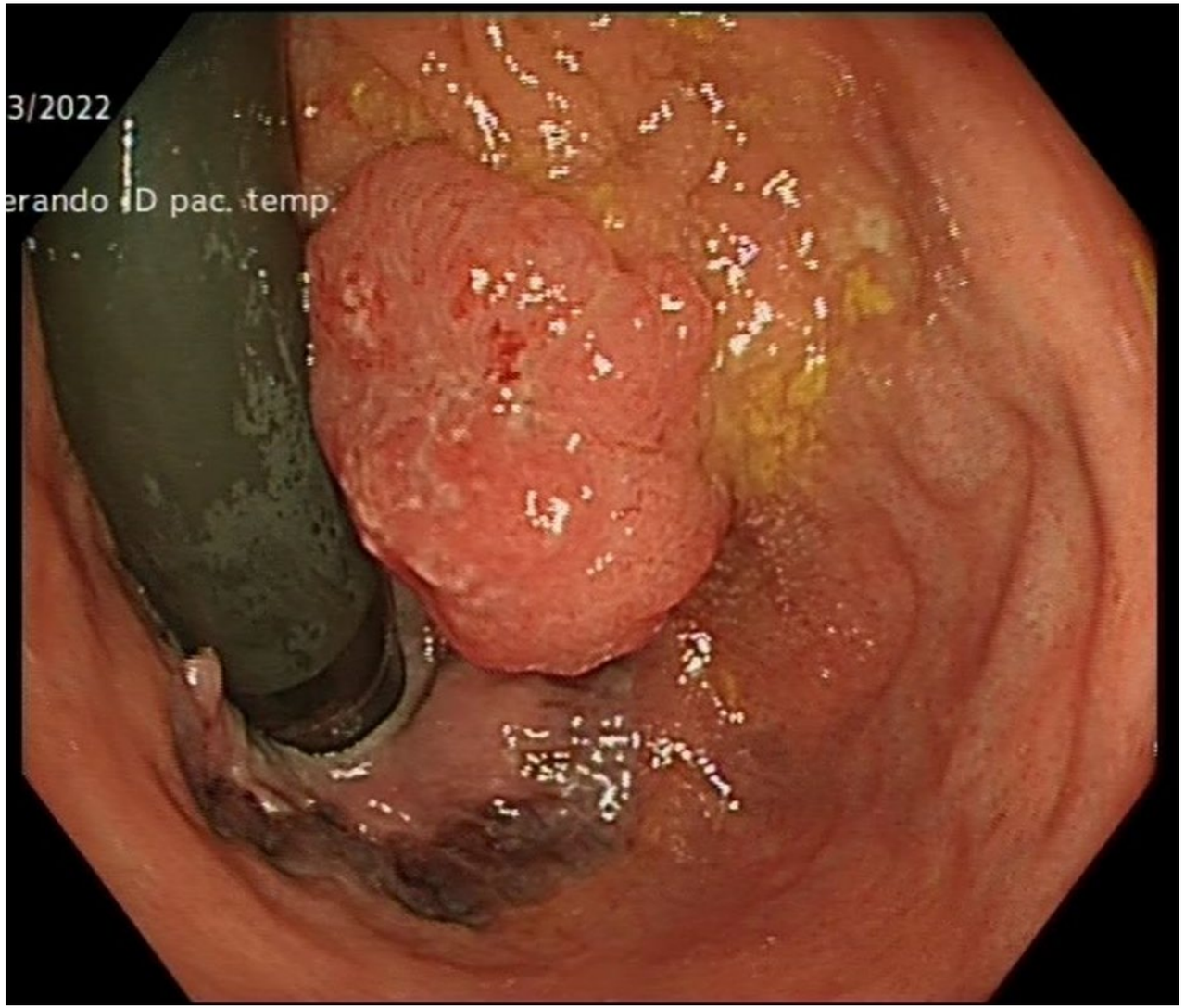
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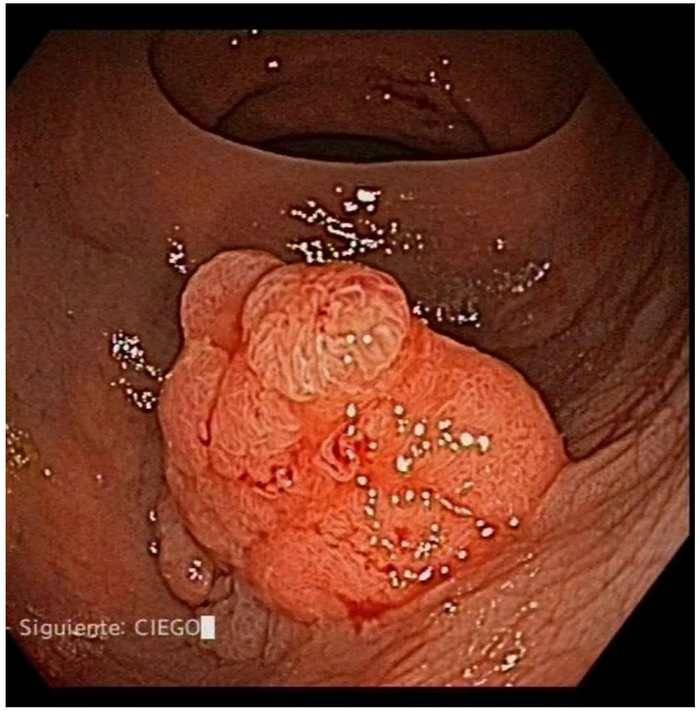
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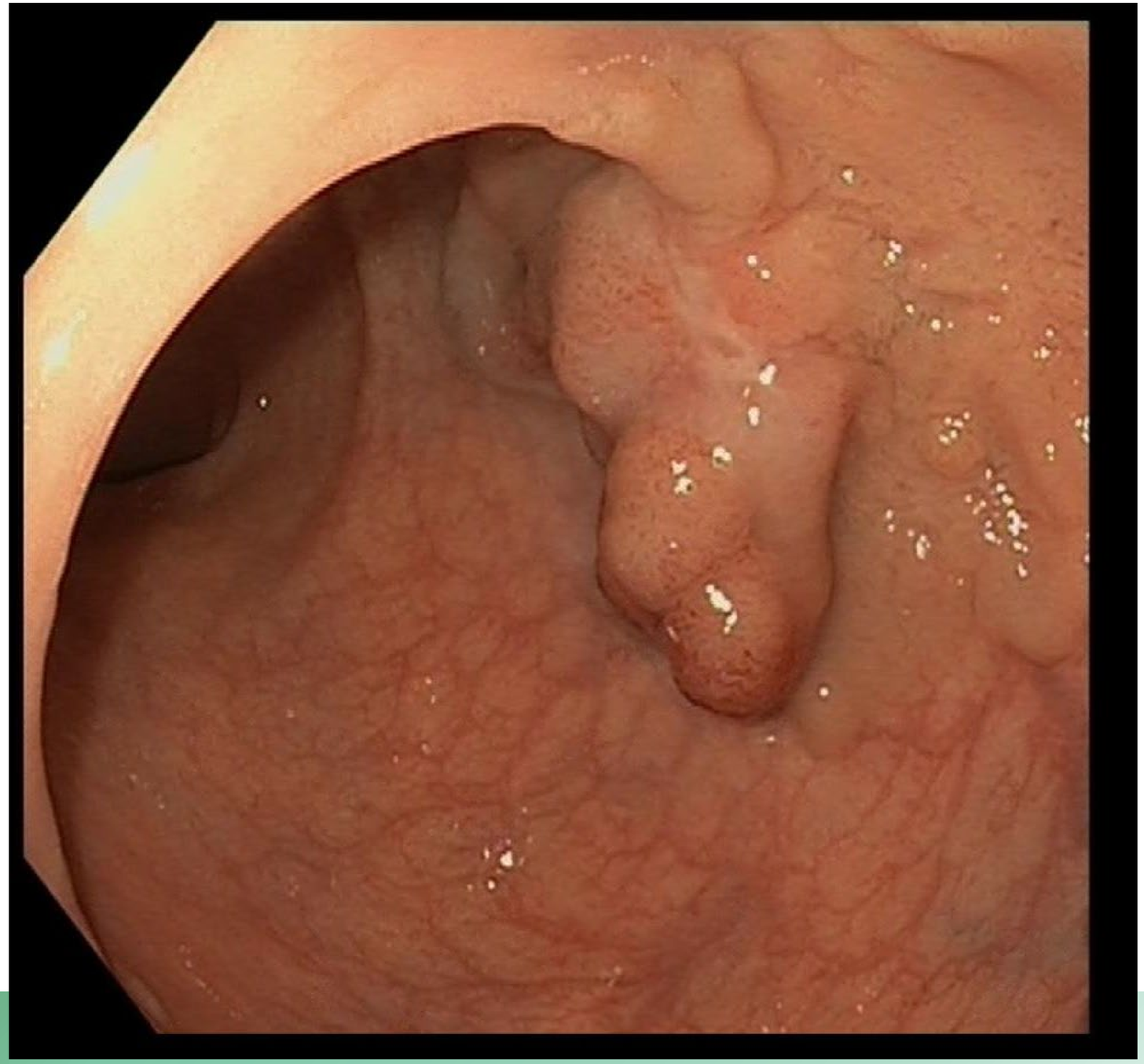

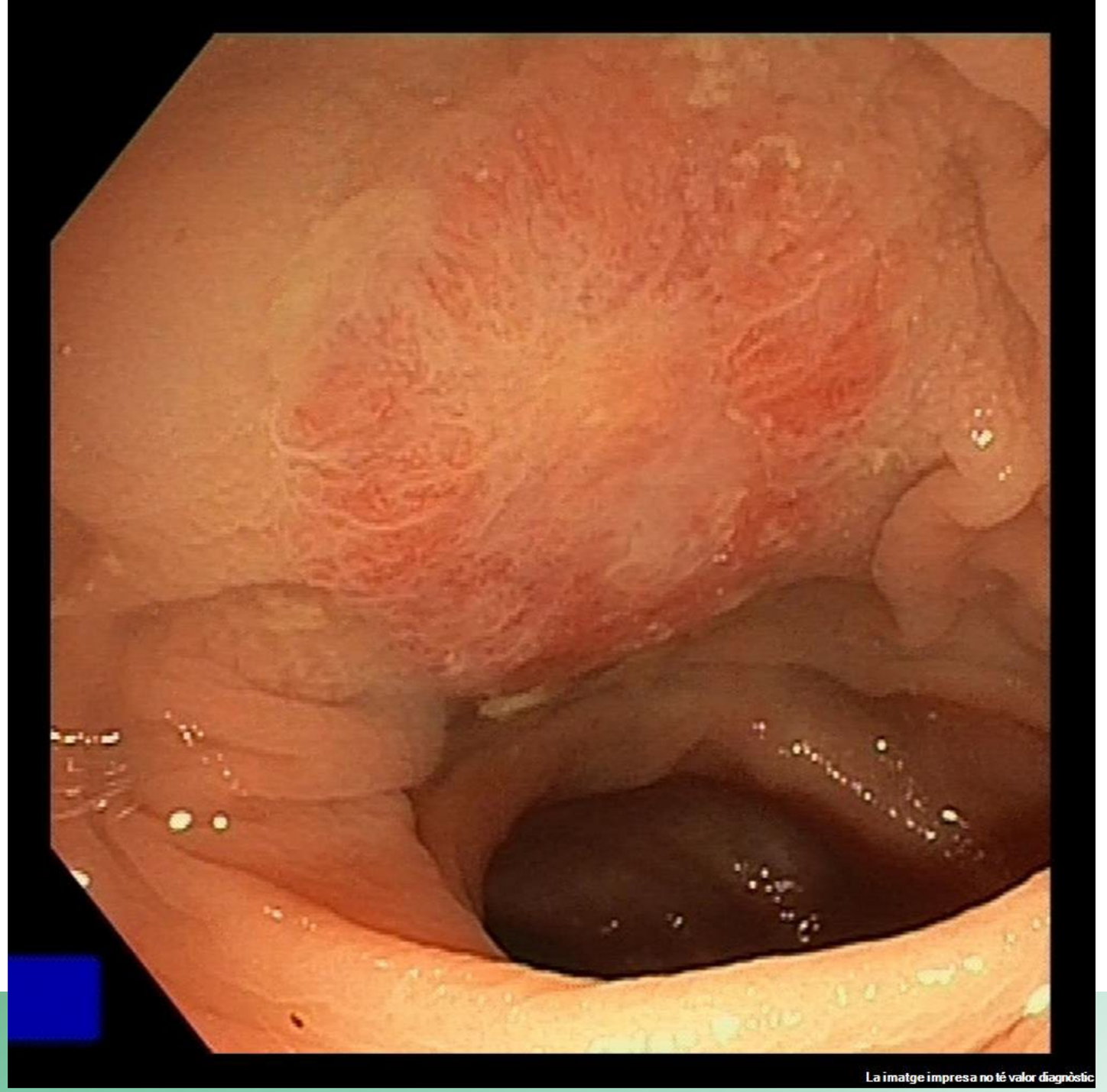
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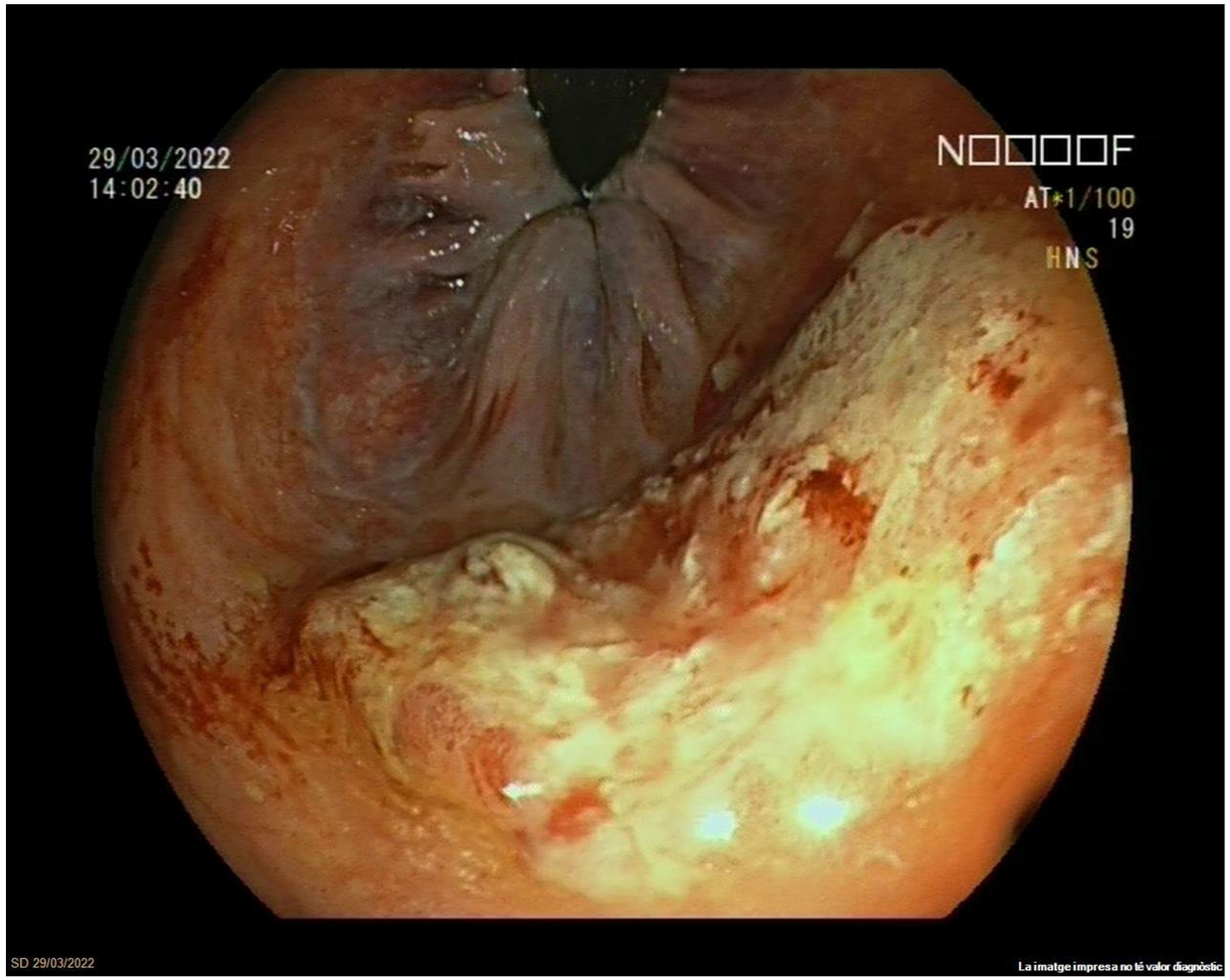
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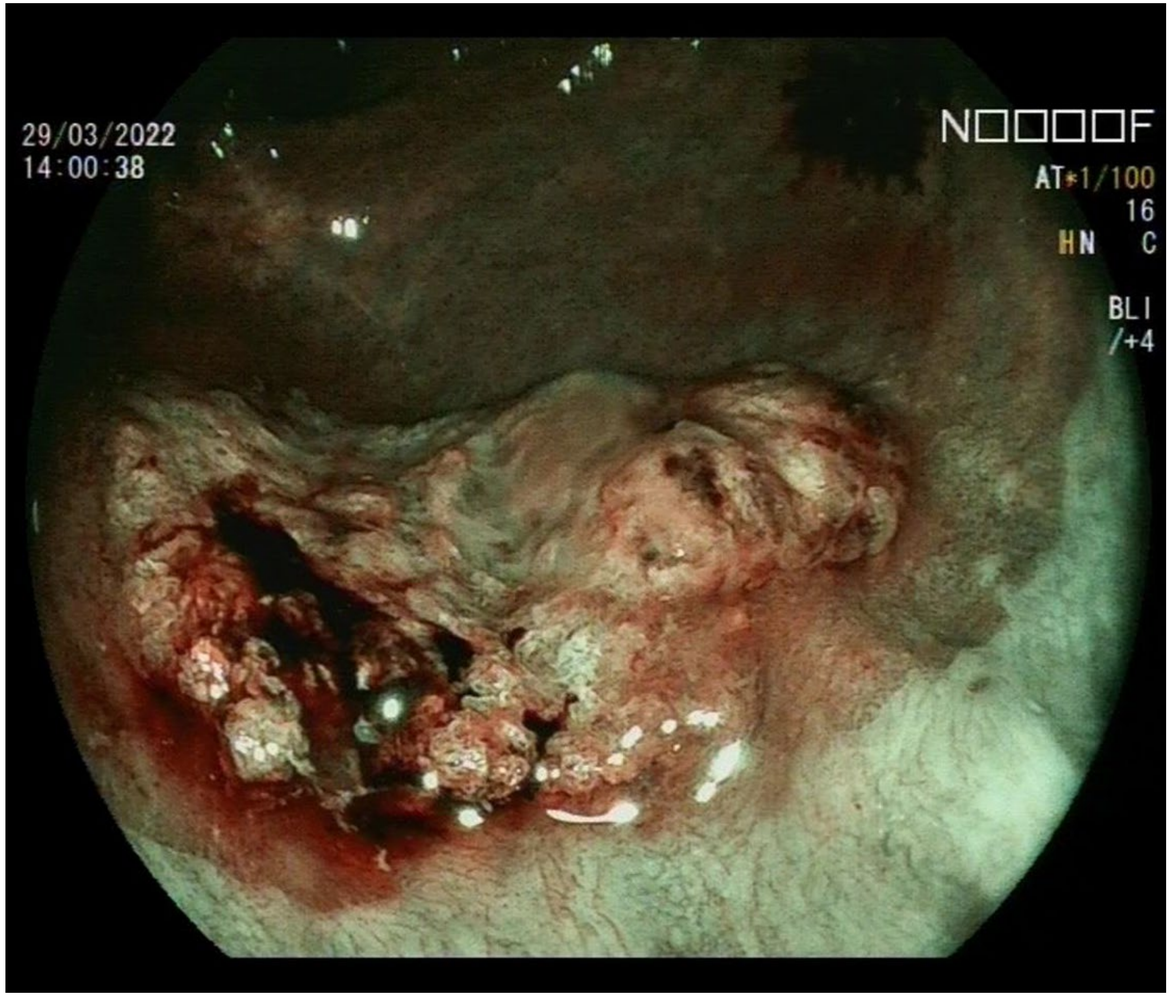
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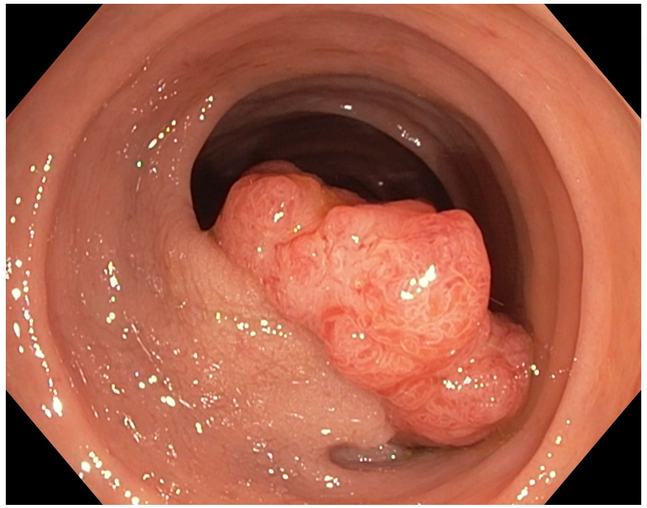
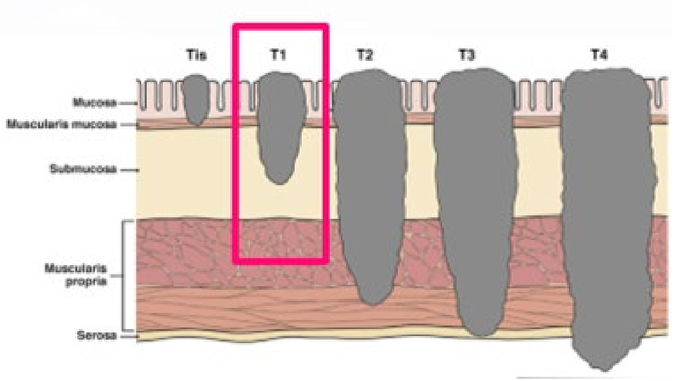
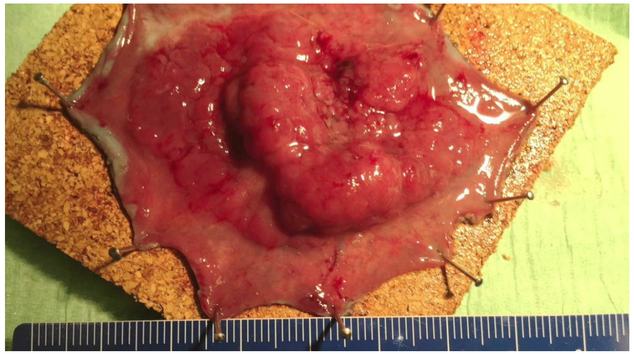
pT1 CRC = 40% of all CRC

Most pT1 CRC arise in a polyp







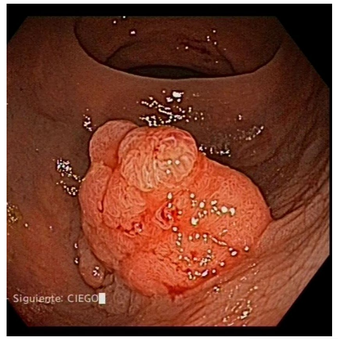
Rectal cancers = 50% of all CRC

Treatment depends on **staging (TNM)**

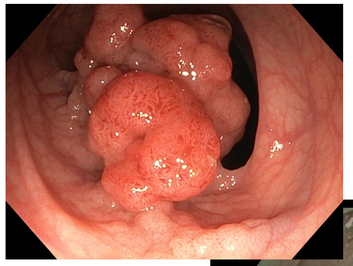
American Cancer Society. Colorectal Cancer Facts & Figures 2020-2022
Toes-Zoutendijk E et al. Gut. 2018 Sep;67(9):1745-1746
Verseveld M et al. Eur J Surg Oncol. 2021 48 (2022):1153-1160
Keys MT et al. Int J Epidemiol. 2021 Mar 3;50(1):143-155

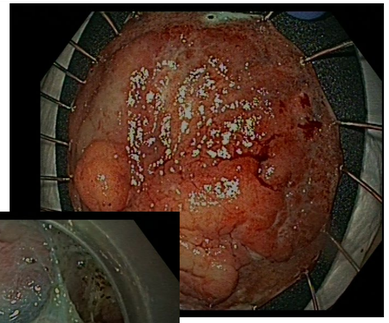
LOCAL RESECTION TECHNIQUES

LOW RISK pT1-2 N0 and non invasive neoplastic lesions

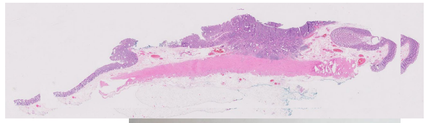


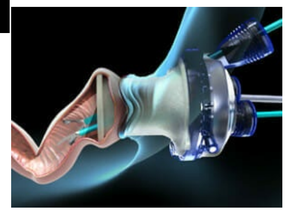
En-Bloc EMR



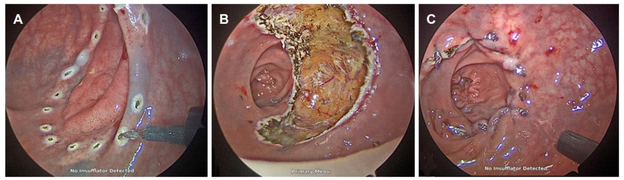


ESD and EID





Transmural resection



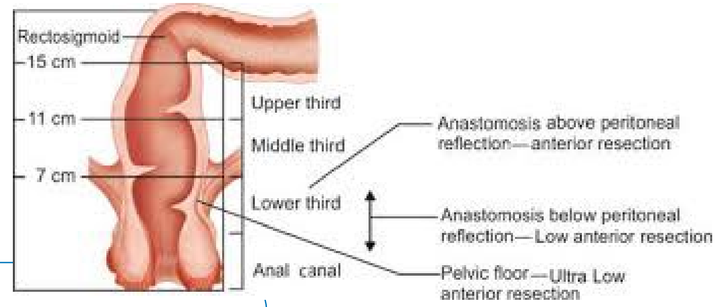
ORGAN PRESERVATION
LESS MORBIDITY
CHEAPER
QOL

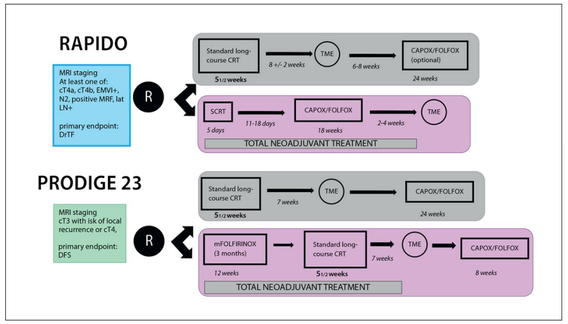
✔ ✖

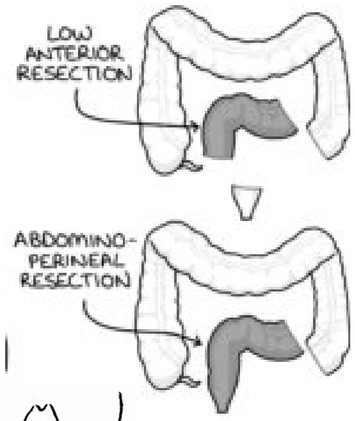
RISK OF RECURRENCE

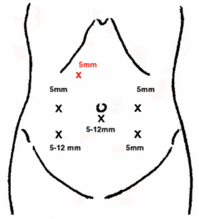
ONCOLOGICAL SURGERY +/- NAT

HIGH RISK pT1-2N0 ; ≥ pT2; N+









X - Port site for Laparoscopic Anterior Resection

X- Additional Port site for Laparoscopic TME

Rectal cancer locoregional staging

EUS & MRI

In literature apparent good diagnostic accuracy of both but…

No consensus on T1

	T	N
ESMO GOOD SCIENCE BETTER MEDICINE BEST PRACTICE	EUS or MRI	MRI (EUS)
NCCN National Comprehensive Cancer Network®	MRI (EUS)	MRI (EUS)
European Society ESGAR Gastrointestinal and Abdominal Radiology	EUS (T1vsT2)	MRI

R. Glynne-Jones et al. Annals of Oncology 2017
Beets-Tan RGH etl al.Eur Radiol 2018

Benson AB et al . J Natl Compr Canc Netw 2022
Chan et al. Gastrointestinal Endoscopy 2019

T1 Rectal cancer locoregional staging

No established protocols on T1 rectal cancer staging

Local treatment without staging?

Staging after treatment for selected cases only?

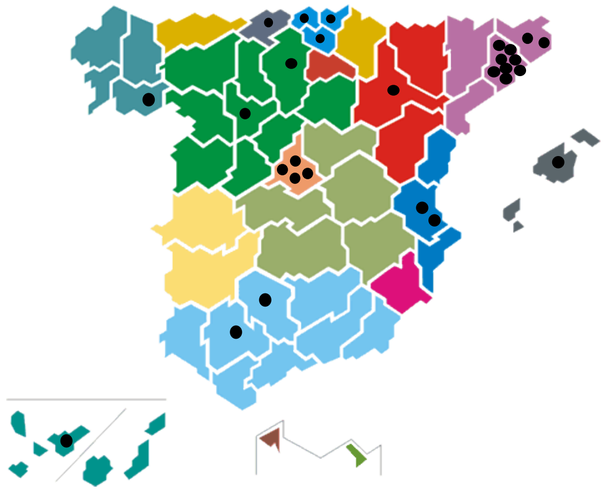
Staging before treatment for all suspected cases?

Great heterogeneity in clinical practice

Gijsbers K et al. Endoscopy International Open 2020;08:E1117-E1122

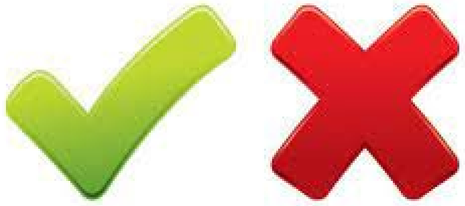
EpiT1 Consortium

- Multicentric retrospective cohort study
- 33 health centers from 12 Spanish states involved
- Central revision of histology, shared criteria
- Data collected on REDCap Research Electronic Data Capture, 505 variables for each included patient



INCLUSION criteria

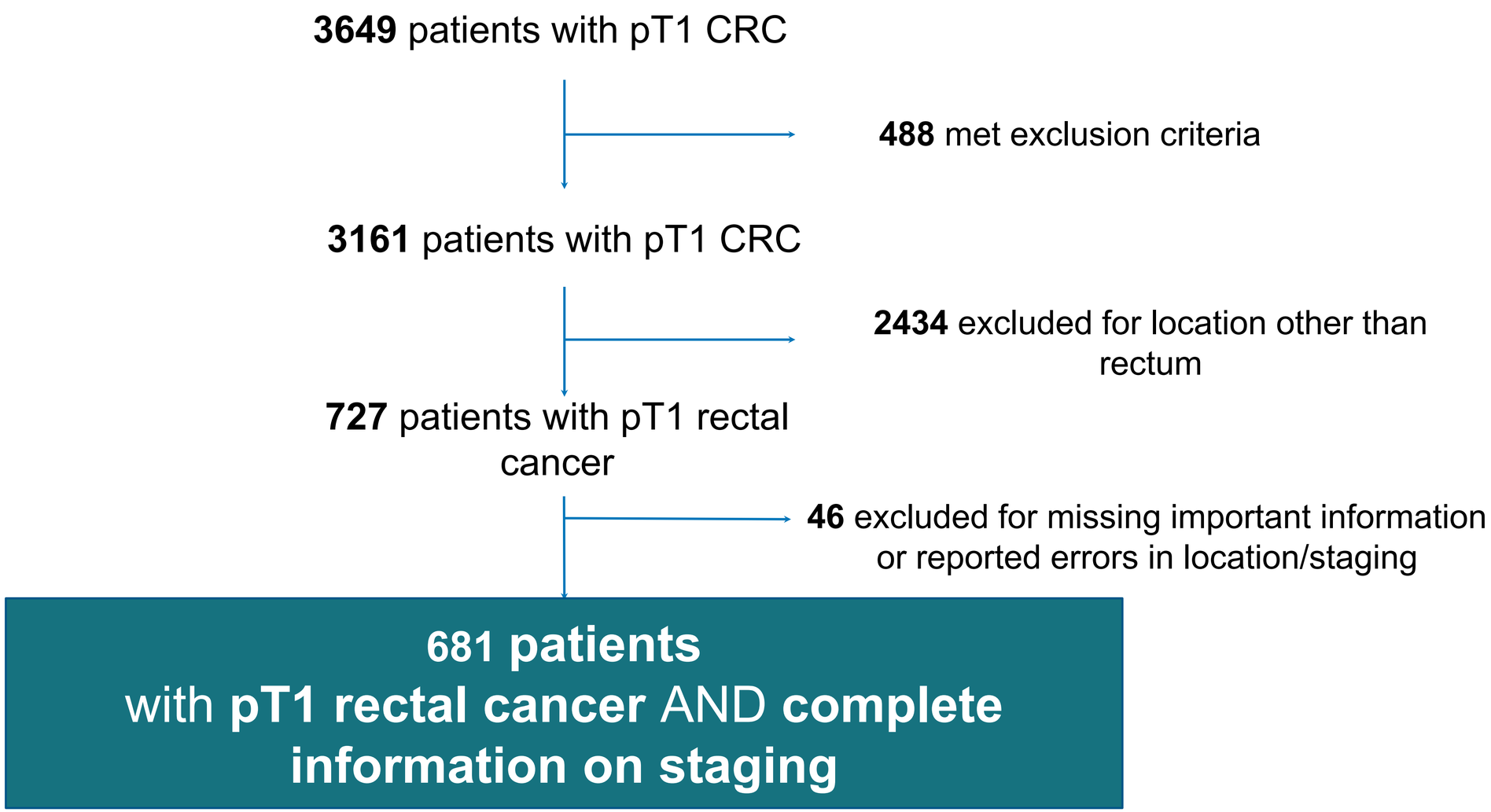
All patients with pT1 CRC
between 2007-2018
Irrespective of treatment received



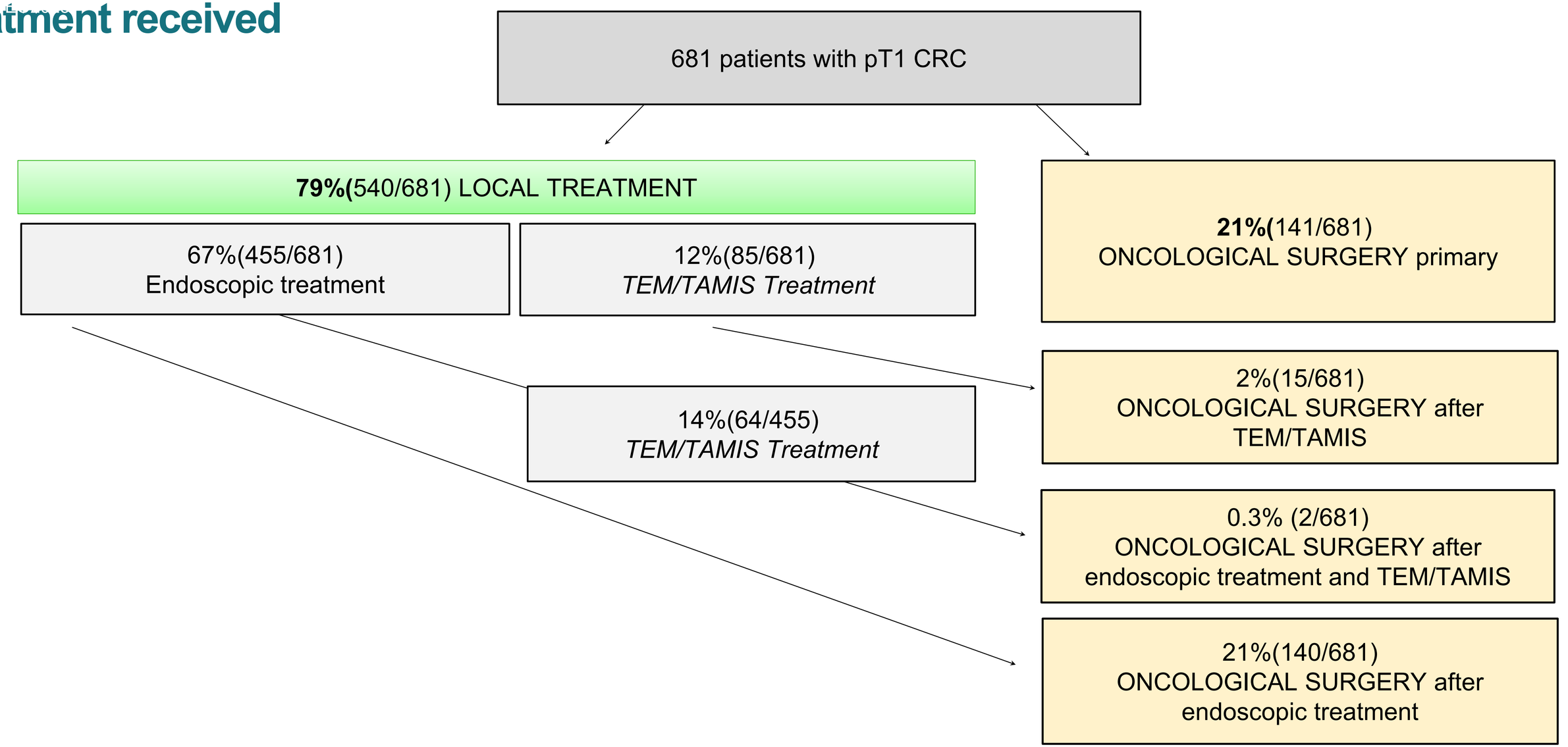
EXCLUSION criteria

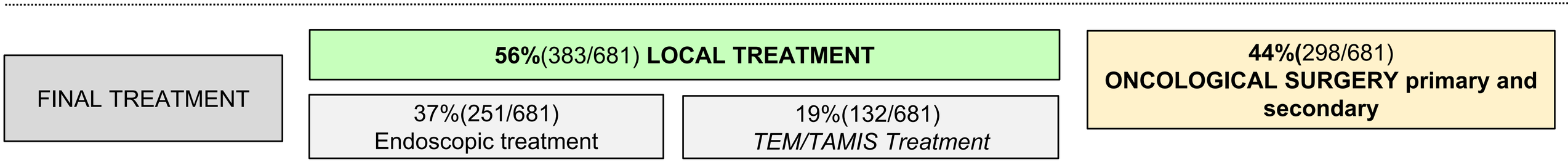
- Histology ≠ adenocarcinoma
- High CRC risk hereditary syndromes
- IBD
- Syncronous or metacronous CRC < 5 years
- Metastatic disease at the time of diagnosis

Results – Patient selection

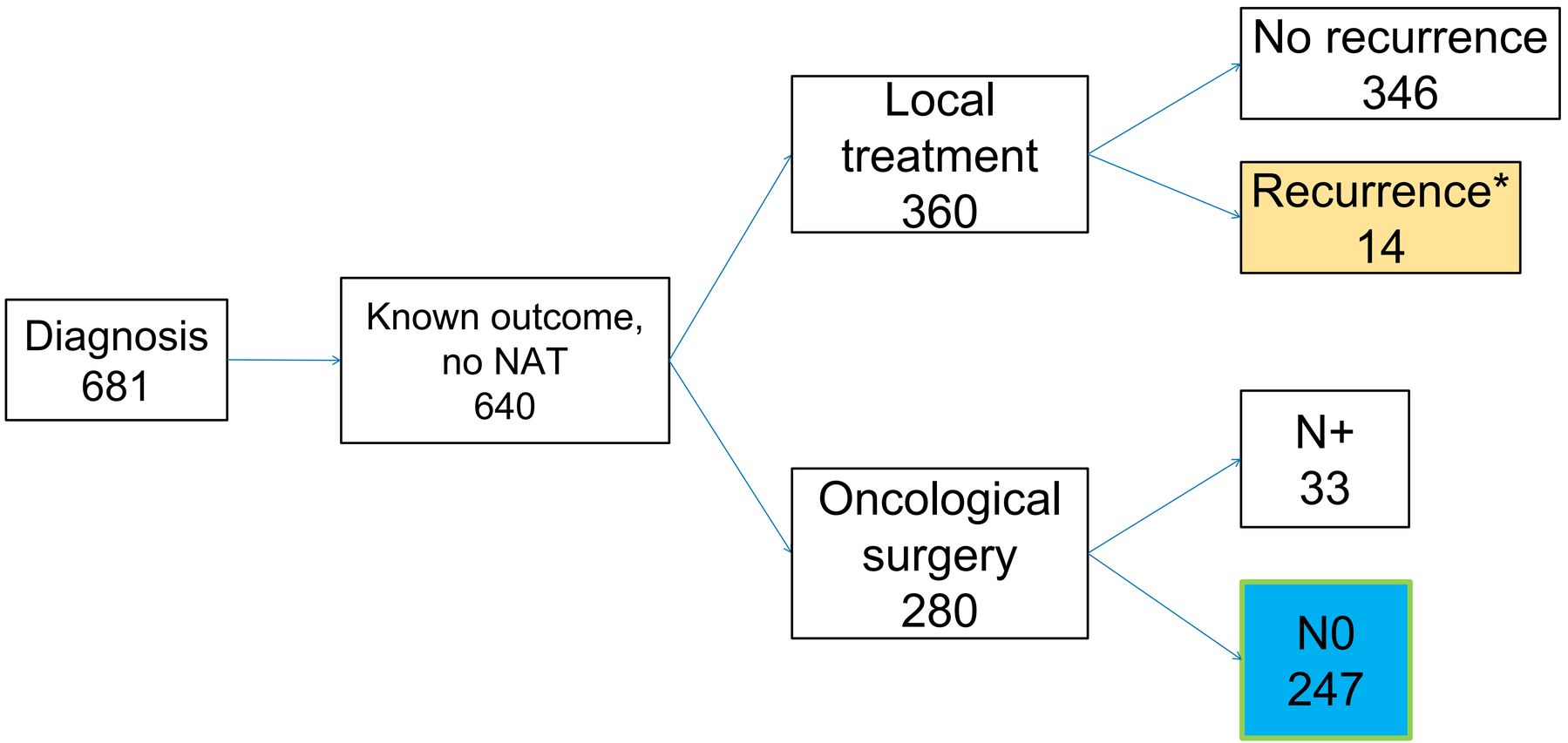


Treatment received





Outcomes



Undertreatment
2,2%
(14/640)

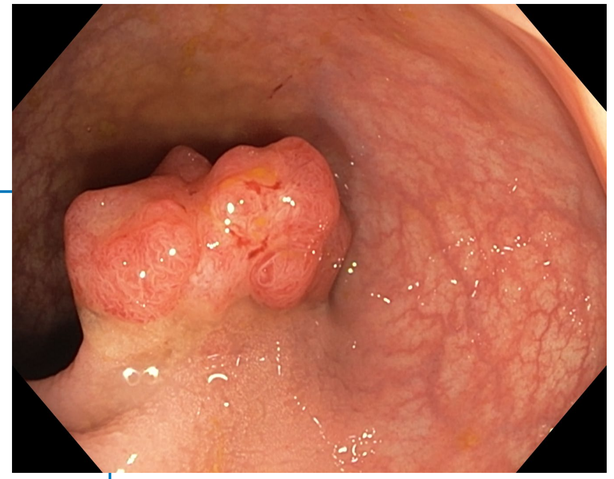
Overtreatment
38,6%
(247/640)

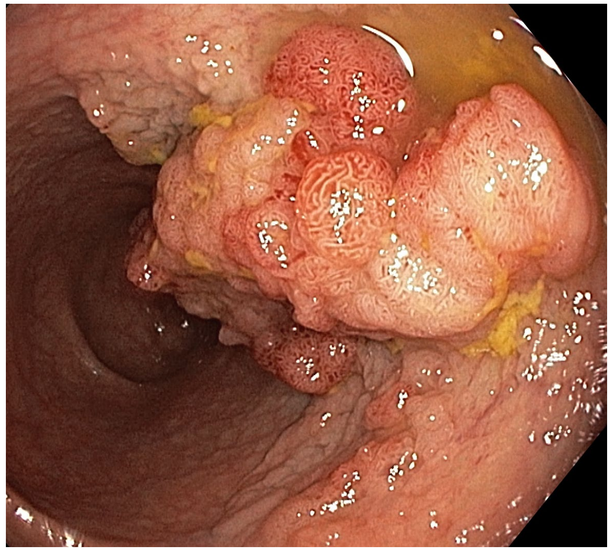
Unnecessary Surgery
88,2%
(247/280)

Oncological adverse outcome (N+ or Recurrence*) = **7,3%** (47/640)

*any recurrence other than endoluminal

Population characteristics





- ✓ 59.5% male
- ✓ average age 65.8 +/- 9.9 years

- ✓ **Screening 47%** / CT finding or symptoms 44%

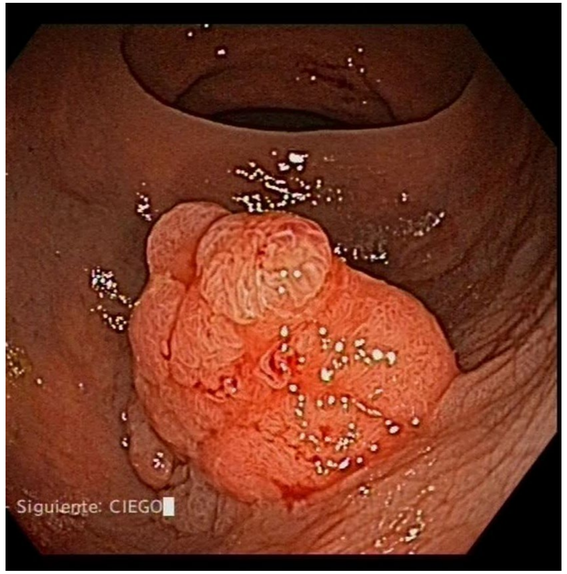
- ✓ Lesion size: 25.3+-15.6 mm (range **3**-130 mm); 50% < 20mm

- ✓ Lesion morphology: sessile 55%, **pedunculated 22%** and flat 22%.

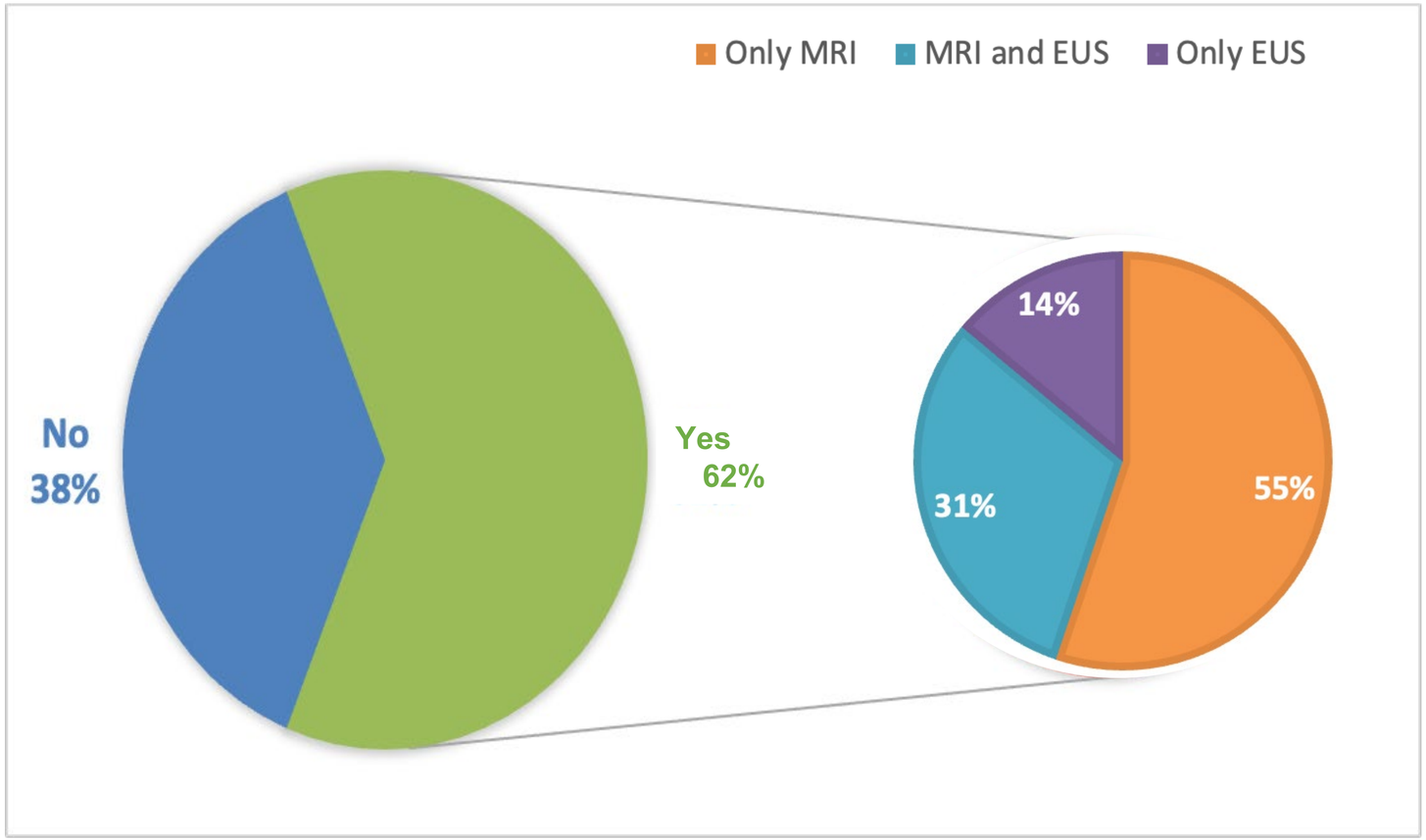
- ✓ Location: upper 42%, middle 32% lower 25%

- ✓ **Only 53% of the lesions were suspected to contain invasive carcinoma by the endoscopist**.

- ✓ Specialist in charge: gastroenterologist 27%, surgeon 24%, oncologist 1%, multidisciplinary tumor board 48%.



Staging modality



Factors independently associated with staging:

- T1 management in **reference center** vs no reference center: OR 2.9 [95%CI 1.5-5.7]
- location in the **low and middle rectum** vs high rectum: OR 3.2 [95%CI 1.8-5.7]
- optical **diagnostic suspicion** of invasive carcinoma at baseline colonoscopy: OR 2.4 [95%CI 1.3-4.5]
- **non– gastroenterologist** vs gastroenterologist management: OR 3.3 [95%CI 1.7-6.5]
- At least **one high risk histological feature** vs none: OR 3.7 [95%CI 1.8 -7.4]

Diagnostic accuracy for T staging

	EUS N=117	MRI N=191	Overall Staging (MRI and/or EUS) N=231
T1 correct	**59%**	**28,3%**	**32,9%**
Overstaging	41%	71,7%	**67,1%**

EUS	Reference center (N=100)	No reference center (N=17)	p
T1 correct	**62%**	**41,2%**	0,106
Overstaging	38%	59,8%	

MRI	Reference center (N=139)	No reference center (N=52)	p
T1 correct	**33,1%**	**15,4%**	0,015*
Overstaging	66,9%	84,6%	

Overall	Reference center (N=174)	No reference center (N=57)	p
T1 correct	**37,9%**	**17,5%**	0,004*
Overstaging	62,1%	82,5%	

Only patients with T1 – No information on understaging

Diagnostic accuracy for N staging

	EUS	RMN
N correct	**89,8%**	**77,9%**
Overstaging	6,1%	13,9%
Understaging	4,1%	8,2%

EUS	N+ or recurrence (all therapies) N=121	N+ (oncological surgery) N=49
Sensitivity %	0% (0/6)	0% (0/2)
Specificity %	96,5% (111/115)	93,6% (44/47)
PPV %	0% (0/4)	0% (0/3)
NPV %	94,9% (111/117)	95,6% (44/46)
Prevalence %	5 % (6/121)	4,1% (2/49)

MRI	N+ or recurrence (all therapies) N=243	N+ (oncological surgery) N=122
Sensitivity %	15,8% (3/19)	16,7% (2/12)
Specificity %	91,1% (204/224)	85,4% (94/110)
PPV %	13% (3/23)	11,1% (2/18)
NPV %	92,7% (204/220)	90,4% (94/104)
Prevalence %	7,8% (19/243)	9,8% (12/122)

Concordance for N Staging of MRI and EUS in those patients undergoing both tests and in relation with pathology in surgical specimen

T

	MRI+EUS	Both T Correct	Both T incorrect	MRI T corr/EUS T incorr	MRI T incorr/EUS T corr
N° pts (MRI+EUS)	**73**	19 (26%)	27 (37%)	4 (5,5%)	**23 (31,5%)**

N

	For N+ (Sensitivity)			For N0 (Specificity)		
	MRI Positive	**MRI Negative**	**Total**	**MRI Positive**	**MRI Negative**	**Total**
EUS Positive	0	0	0	0	3	3
EUS Negative	0	1	1	5	30	35
Total	0	1	1	5	33	38

Summary

- ✓ Staging done in **≈ 60%** patients
- ✓ Factors associated with staging that are depending on physician: management in a **reference center,** by a specialist **other than gastroenterologyst**, diagnostic **suspicion** at endoscopy
- ✓ **Diagnostic accuracy** of EUS and MRI **lower than expected** from literature
- ✓ **T1 rectal cancers** were **overstaged** for **T** in > 2/3 of cases
- ✓ For **T staging, EUS** had a **better diagnostic accuracy** than **MRI**
- ✓ For **N staging**, EUS and MRI had both high specificity but **very low sensitivity and PPV**

Study limitations

- **Retrospective** design
- Great **heterogeneity** among health centers involved
- Inclusion **only of pT1 stage**
- old serie (2007-2018) - Possible improvement in diagnostic accuracy in last 5 years (2018 new ESGAR guidelines)

Study strenghts

- Large cohort and long fup – **oncological outcomes**
- Picture of **real-life clinical practice,** very different from research settings
- **Special focus on pT1**
- Consecutive pT1 **irrespective of treatment modality**

Conclusions

Management of **pT1 rectal cancers is challenging and needs a multidisciplinary approach**

Correct diagnosis and staging is warranted to provide the best treatment approach

It's important to **know the limitations of EUS and MRI** when discussing the management strategies for suspected/known **T1 rectal cancers**

NEED FOR:

- **Innovation** to improve diagnosis and staging accuracy
- **Large, multidisciplinary, prospective studies** with estandardization of protocols and evaluating oncological outcomes
- **Multidisciplinary consensus and guidelines.**
- Enhancing the **standardization and quality control** of imaging techniques

Thank you!

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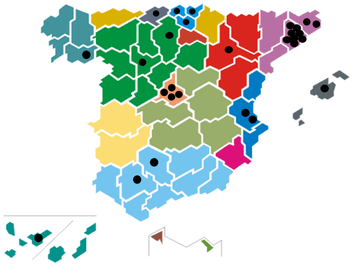
EpiT1 consortium



Financed by:

Asociación Española de Gastroenterología

Fundació La Marató de TV3

Project 201932

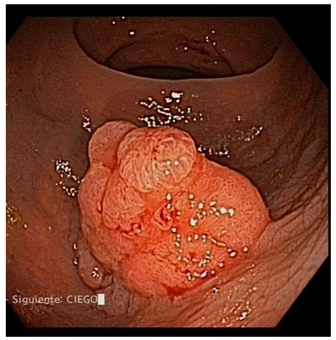
Ministerio de Ciencia e Innovación

Unión Europea

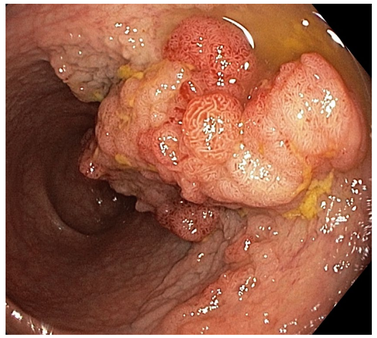
Fondo Europeo de Desarrollo Regional

Agencia Estatal de Investigación

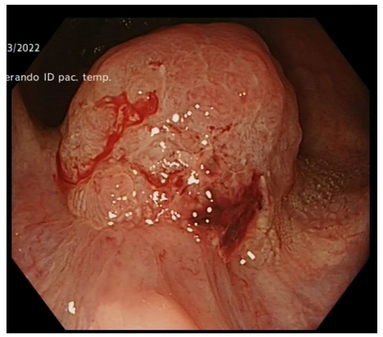
Project PI 19/01050



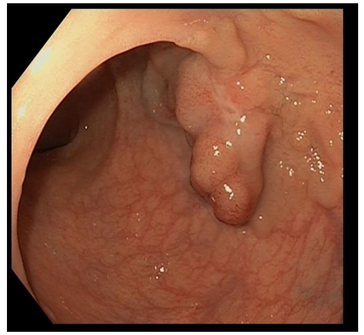
pT1 LR



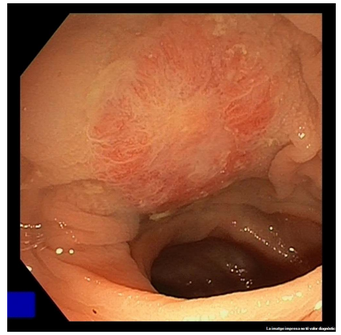
HGD TVA



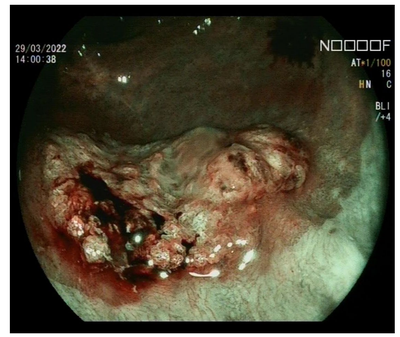
pT2N0



pT2N0



pT1 HR



pT2N0

Oncological outcome of patients in relation to staging and treatment