

GISCOR2014

# FINO A DOVE PUO' SPINGERSI L'ENDOSCOPIA

**Francesco Azzolini**

S.C. Gastroenterologia ed Endoscopia Digestiva  
I.R.C.C.S. - Arcispedale Santa Maria Nuova - Reggio  
Emilia



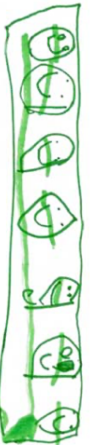
# IL RETTO SEDE FAVOREVOLE PER L'ESD

- il colon presenta angolature e curve
- è più difficile lavorare con lo strumento ben raddrizzato per avere la massima risposta dei tiranti
- la parete è più sottile rispetto allo stomaco e quindi il rischio perforativo e di insulto termico è maggiore
- in caso di perforazione il liquido residuo della preparazione colica può portare rapidamente ad una peritonite

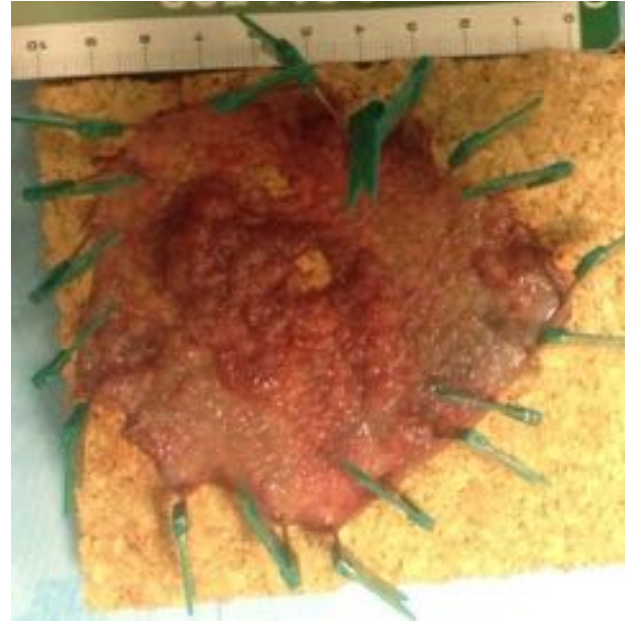
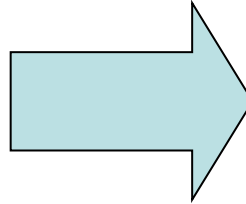
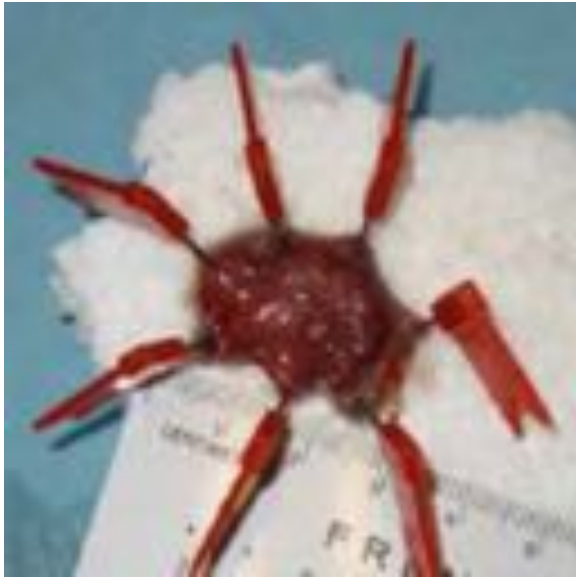


# QUALI SONO I LIMITI DELL'ENDOSCOPIA?

- DIMENSIONI DELLA LESIONE
- ESTENSIONE CIRCONFERENZIALE
- VICINANZA CON LE STRUTTURE DEL CANALE ANALE
- FIBROSI
- PROFONDITA' DI RESEZIONE ( m,sm,eftr)

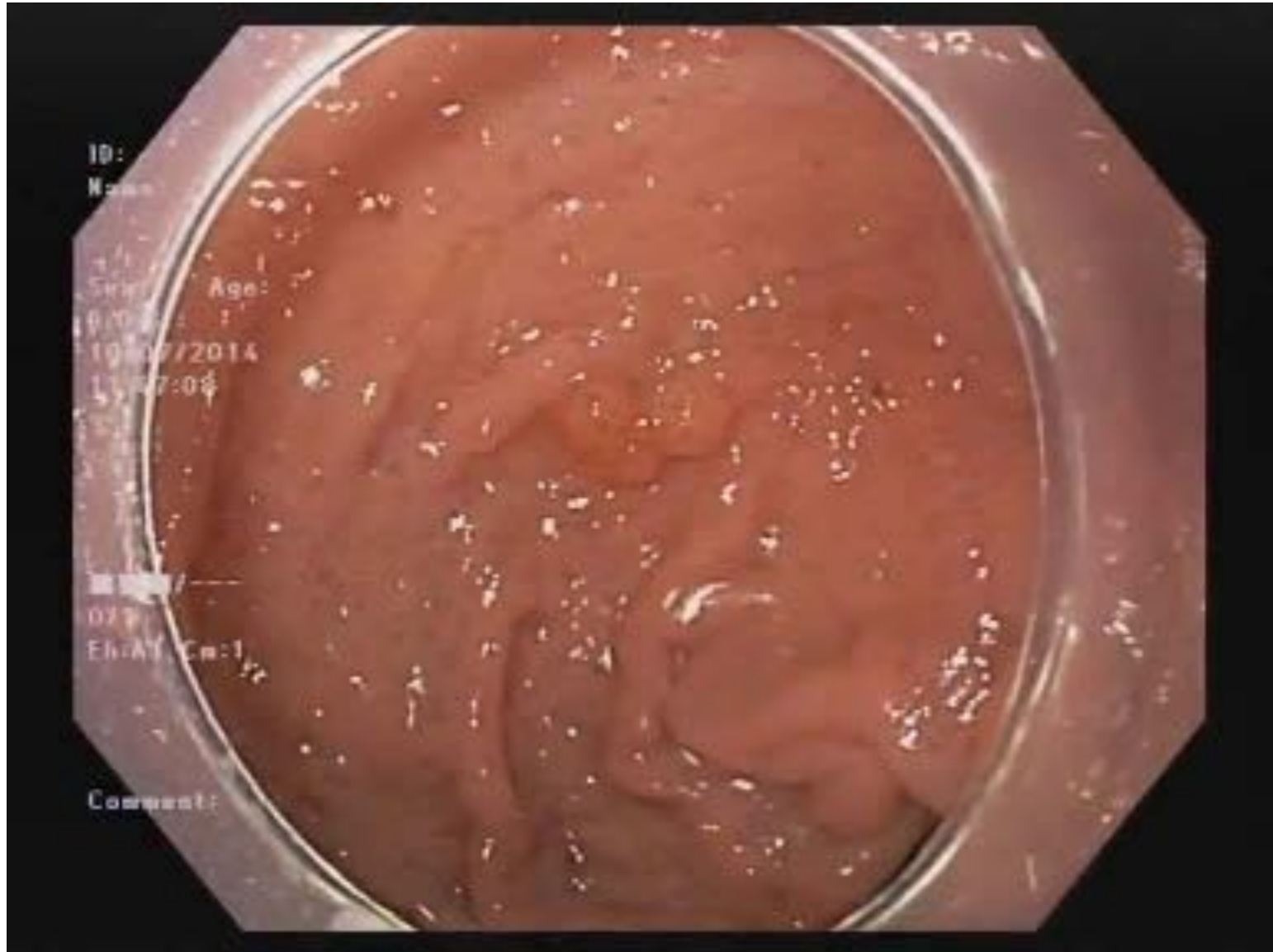


## DIMENSIONI “EN BLOC”



- Il pezzo resecato “EN BLOC” fornisce un esame istologico accurato (microstadiazione, stato dei margini laterali e profondi, l’entità di infiltrazione della sottomucosa, l’invasione vascolare e linfatica)
- Vista la delicatezza della sede indispensabile per lesioni ad alto rischio di cancerizzazione

# DIMENSIONI “PIECE-MEAL”



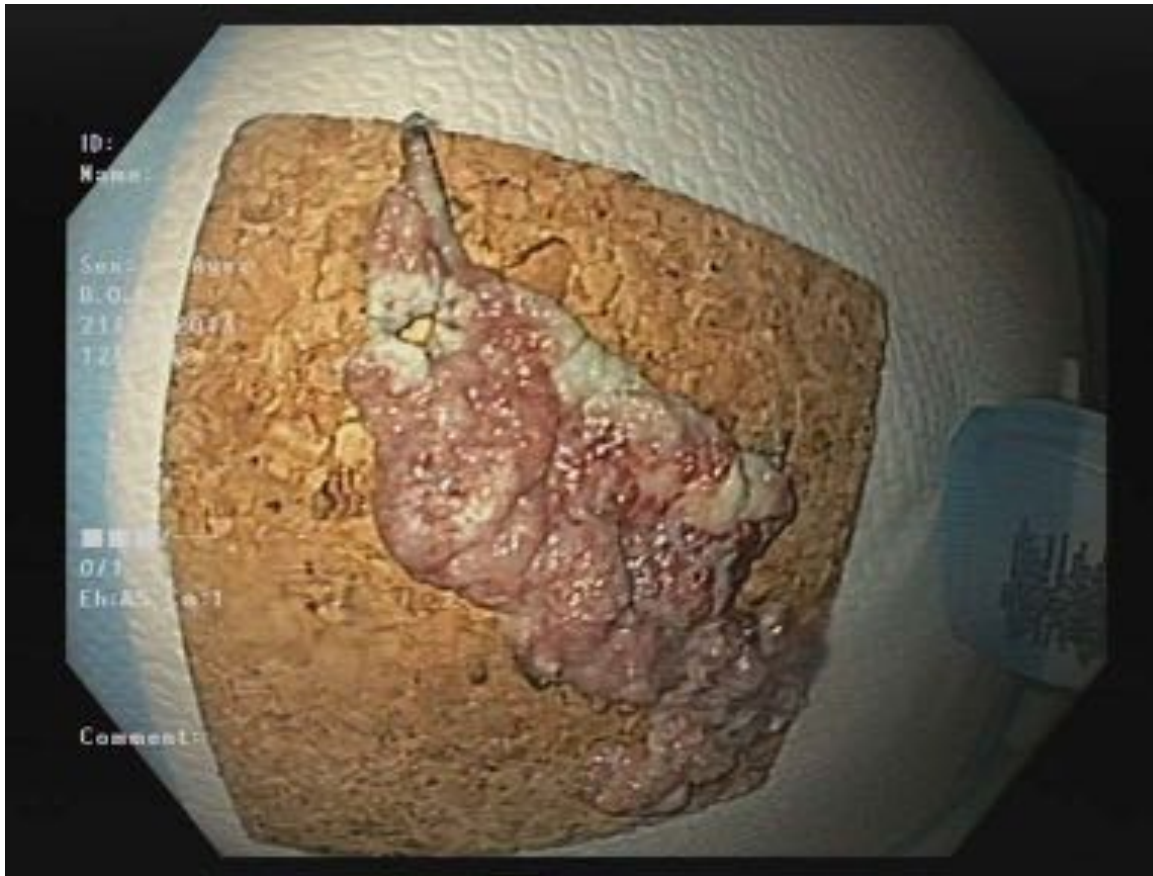
# QUALI SONO I LIMITI DELL'ENDOSCOPIA?

## ESTENSIONE CIRCONFERENZIALE "EN BLOC"



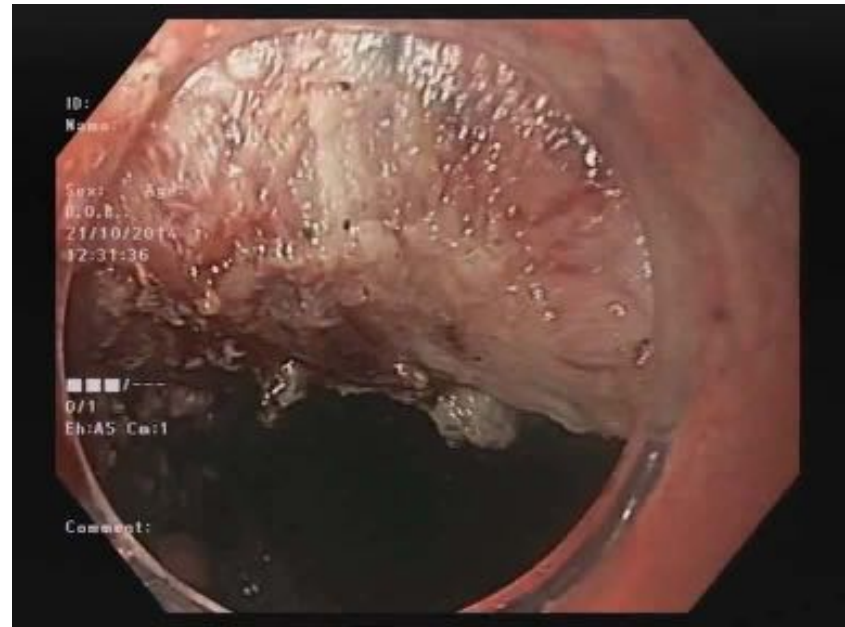
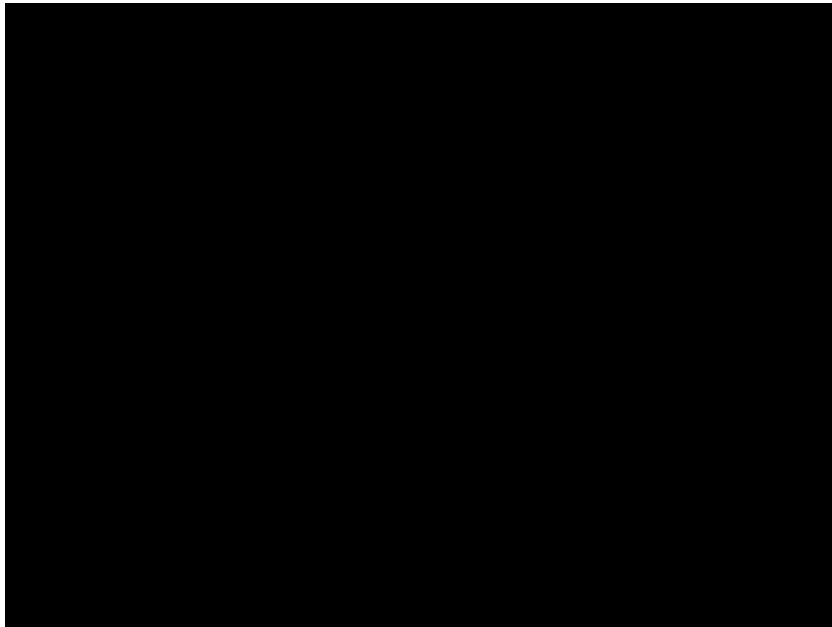
# QUALI SONO I LIMITI DELL'ENDOSCOPIA?

## ESTENSIONE CIRCONFERENZIALE "EN BLOC"



# QUALI SONO I LIMITI DELL'ENDOSCOPIA?

## VICINANZA CON LE STRUTTURE DEL CANALE ANALE



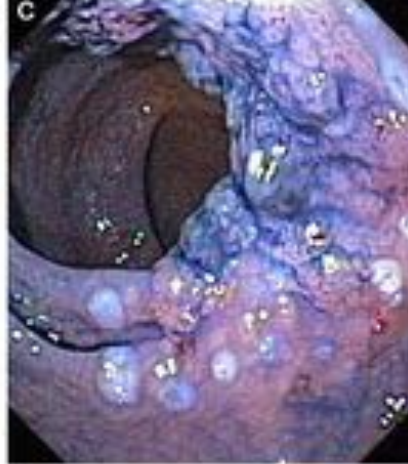


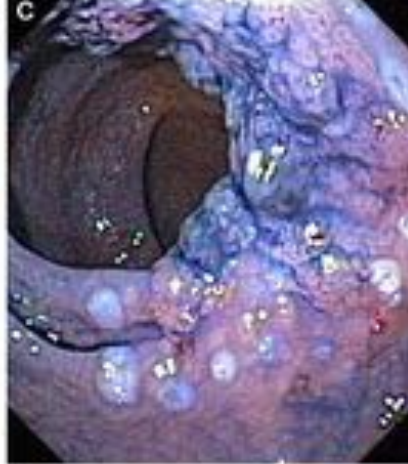


# QUALI SONO I LIMITI DELL'ENDOSCOPIA?

## FIBROSI

Table 4 Outcome of ESD of colorectal recurrent/refractory polyps, as reported in major published series.

	No EMR sessi before ESD		Bleedings (%)
Fujishiro et al. [19]	?		0
Hurlstone et al. [8]	≥ 2		16
Zhou et al. [10]	≥ 1		0
Kuroki et al. [24]	≥ 1		0
Present series	5 <sup>a</sup> (3-7)		0



<sup>a</sup> Median.  
<sup>b</sup> Two patients received further treatment.  
<sup>c</sup> Mean.

# ESD e FIBROSI

## Complete resection rate

Table 3 Association of tumor location and the presence of fibrosis with incomplete resection by ESD of the 292 colorectal epithelial neoplasms.

Tumor location	Fibrosis	
	Absent	Present
Rectum		
% (n/n)	94.6% (70/74)	75.0% (3/4)
OR (95%CI)	1 (reference)	5.83 (0.49 - 69.49)
Left-side colon		
% (n/n)	90.5% (57/63)	66.7% (2/3)
OR (95%CI)	1.84 (0.50 - 6.85)	8.75 (0.65 - 118.23)
Right-side colon		
% (n/n)	80.7% (113/140)	62.5% (5/8)
OR (95%CI)	4.18 (1.40 - 12.46)*	10.50 (1.82 - 60.46)*

OR, odds ratio; 95%CI, 95% confidence intervals  
\* P < 0.01

## Perforation rate

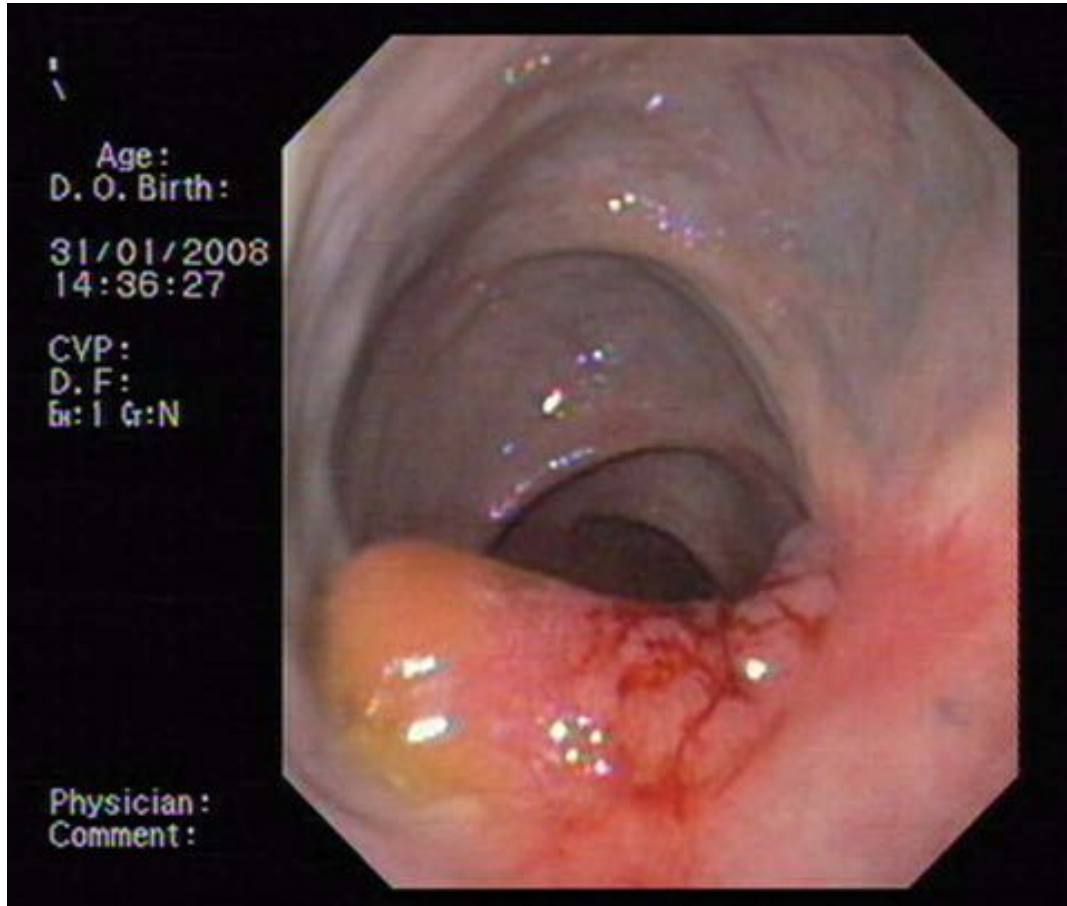
Table 4 Association of tumor size and the presence of fibrosis with perforation related to ESD, for the 292 colorectal epithelial neoplasms.

Tumor size	Fibrosis	
	Absent	Present
≤ 20 mm		
% (n/n)	3.4% (3/89)	0.0% (0/2)
OR (95%CI)	1 (reference)	0.00005 (0.00 - )
21 - 30 mm		
% (n/n)	5.1% (6/117)	33.3% (3/9)
OR (95%CI)	1.55 (0.38 - 6.38)	14.33 (2.37 - 86.87)*
> 31 mm		
% (n/n)	12.7% (9/71)	75.0% (3/4)
OR (95%CI)	4.16 (1.08 - 16.00)**	86.00 (6.79 - 1089.76)*

OR, odds ratio; 95%CI, 95% confidence intervals  
\* P < 0.05; \*\* P < 0.01

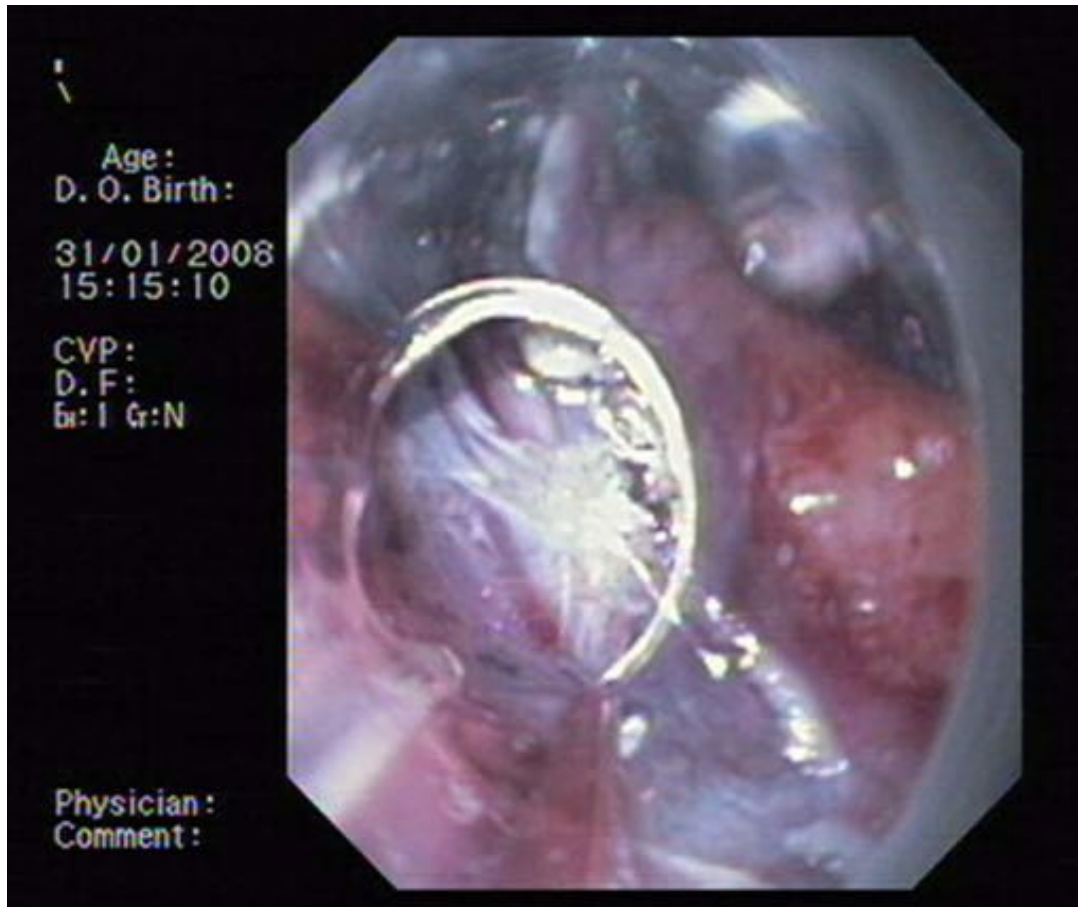
# QUALI SONO I LIMITI DELL'ENDOSCOPIA?

## FIBROSI



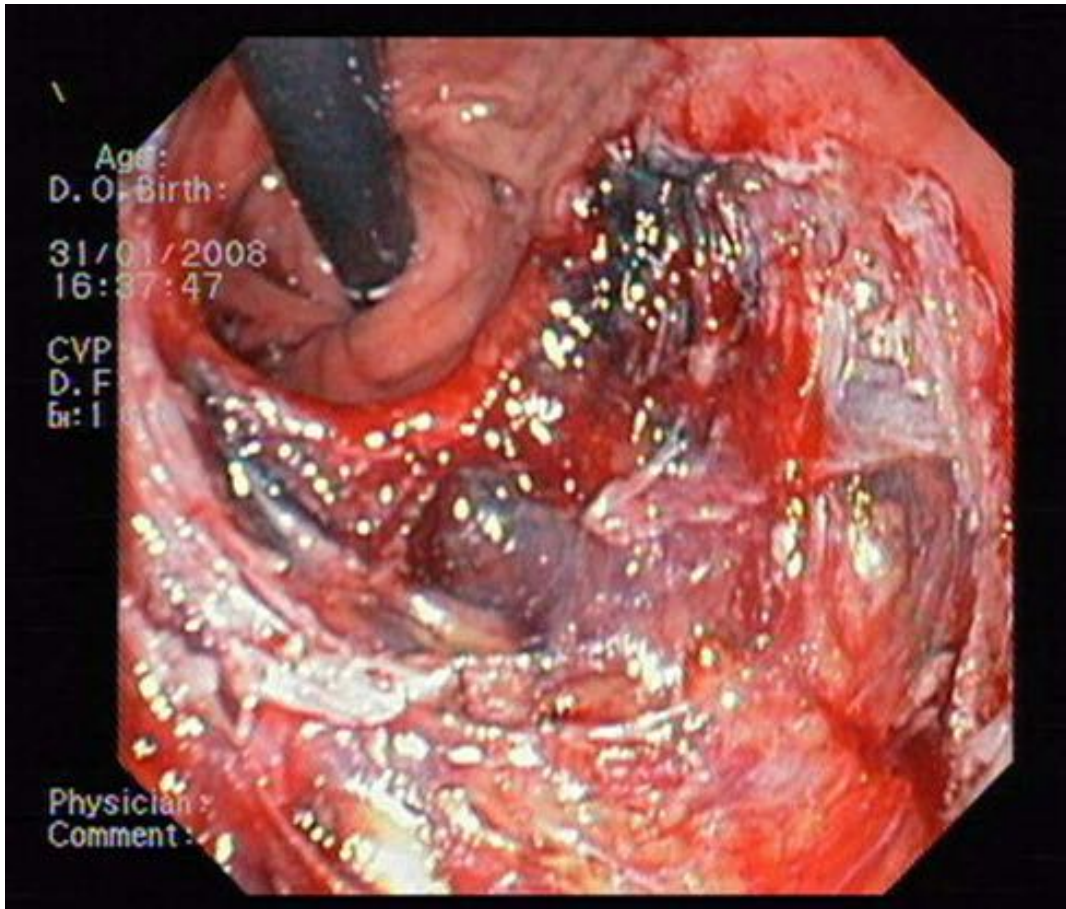
# QUALI SONO I LIMITI DELL'ENDOSCOPIA?

## FIBROSI



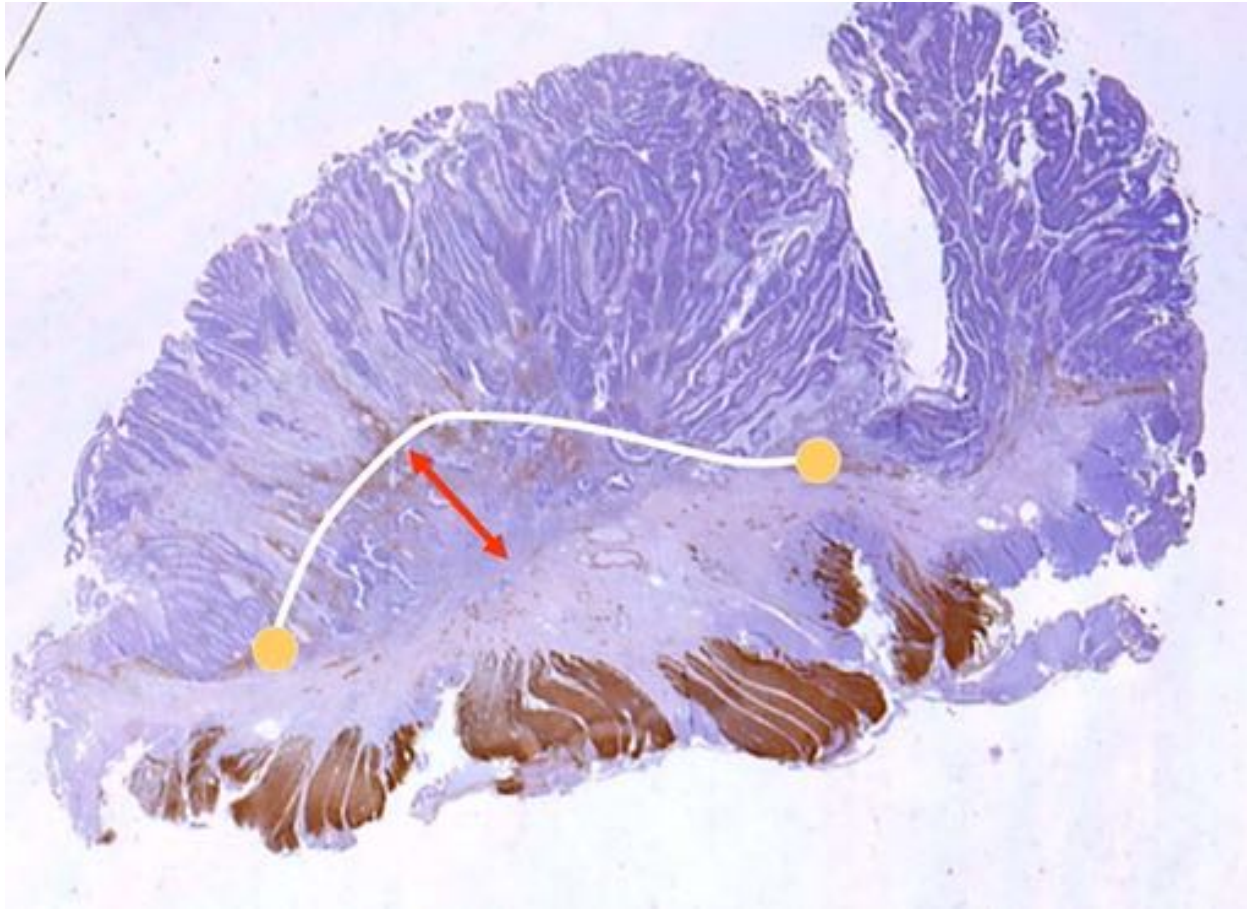
# QUALI SONO I LIMITI DELL'ENDOSCOPIA?

## FIBROSI



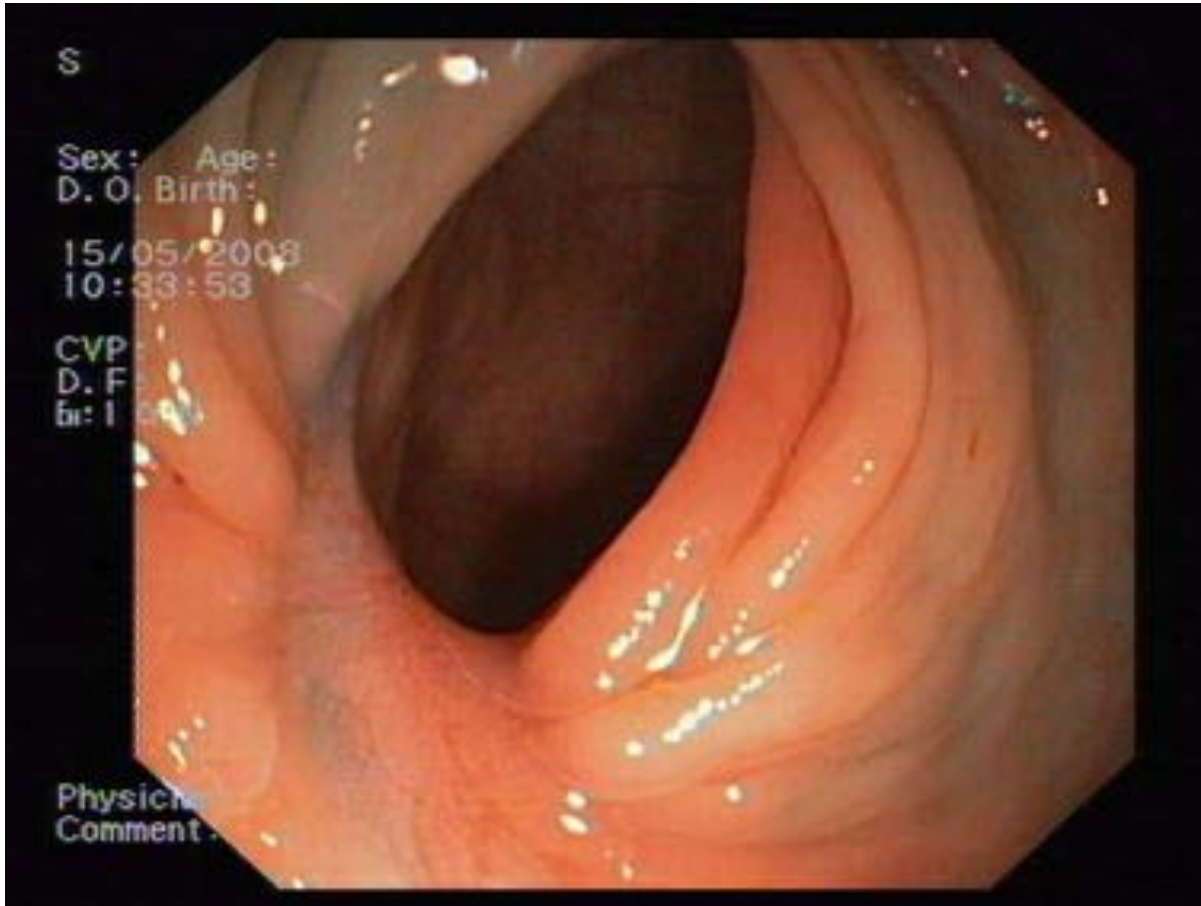
# QUALI SONO I LIMITI DELL'ENDOSCOPIA?

## FIBROSI



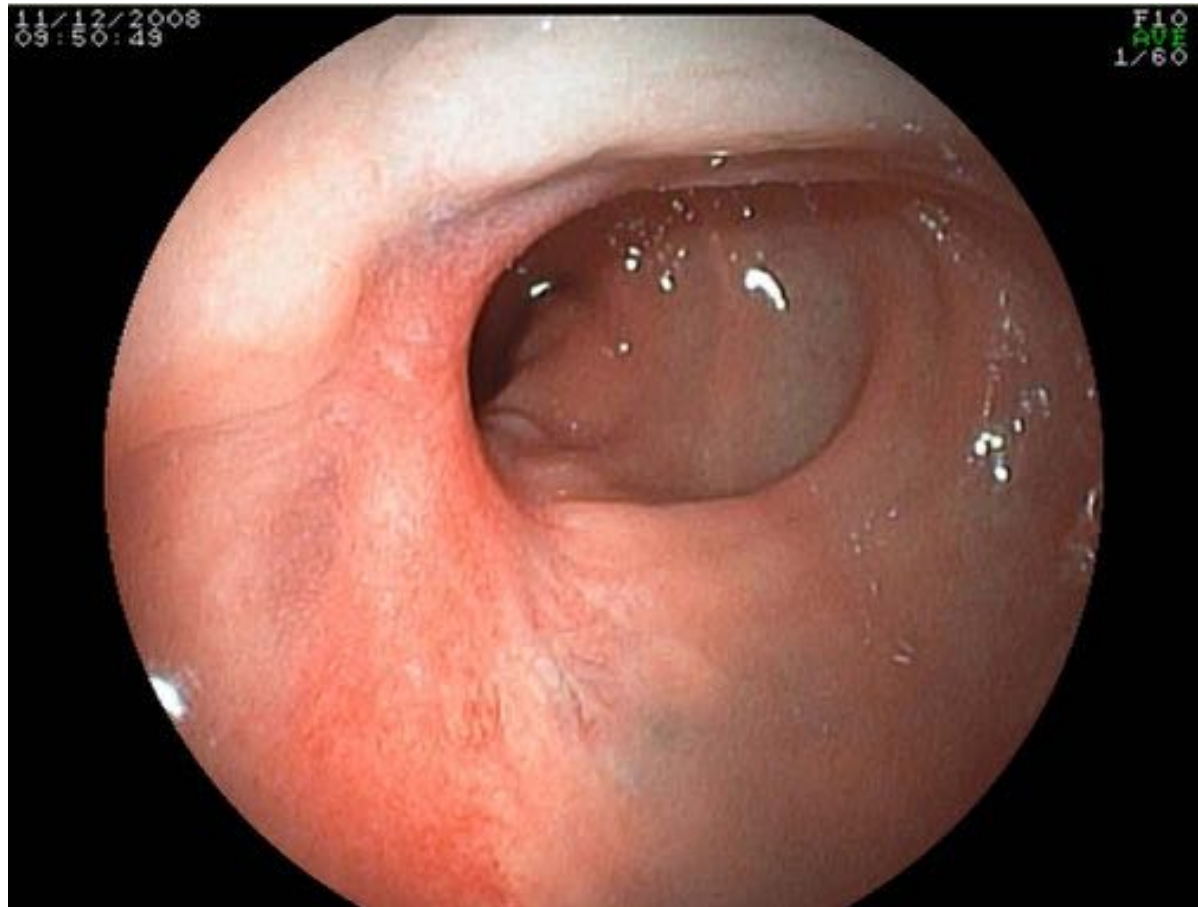
# QUALI SONO I LIMITI DELL'ENDOSCOPIA?

## FIBROSI



# QUALI SONO I LIMITI DELL'ENDOSCOPIA?

## FIBROSI





# QUALI SONO I LIMITI DELL'ENDOSCOPIA?

PROFONDITA' DI RESEZIONE ( m,sm,eftr)



# ESD VS TEM

	ESD 30 patients	TEM 33 patients	P value
<b>Clinical outcomes</b>			
En bloc resection, n (%)	29 (96.7%)	33 (100.0%)	0.476
Completeness of resection, n (%)			
R0 resection	29 (96.7%)	32 (97.0%)	1.000
Lateral margin involvement	1 (3.3%)	1 (3.0%)	1.000
Vertical margin involvement	0 (0.0%)	0 (0.0%)	—
Local recurrence, n (%)	0 (0.0%)	0 (0.0%)	—
Distant metastasis, n (%)	0 (0.0%)	0 (0.0%)	—
Follow-up period, mean (SD) months	20.1 (14.1)	27.2 (11.6)	0.058
<b>Complications</b>			
All complications, n (%)	1 (3.3%)	2 (6.1%)	1.000
Bleeding	0 (0.0%)	0 (0.0%)	
Perforation/postoperative leakage	1 (3.3%)	2 (6.1%)	
<b>Procedure-related variables</b>			
Need for general anesthesia, n (%)	0 (0.0%)	29 (87.9%)	<0.001
Antibiotic use, n (%)	11 (36.7%)	33 (100%)	<0.001
Procedure time, mean (SD), min			
Total	84.0 (51.2)	116.4 (58.5)	0.023
Net	66.0 (45.0)	67.1 (56.0)	0.933
Hospital stay, mean (SD), days	3.6 (1.2)	6.6 (3.5)	<0.001

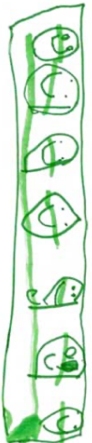


Park SU et al. ESD and TEM for early superficial rectal cancer... Endoscopy 2012; 44: 1031–1036

# ESD VS TEM

Outcomes	ESD 30 patients	TEM 33 patients	P value
Need for additional treatment, n (%)	7 (23.3%)	7 (21.2%)	0.840
Reason for additional treatment <sup>1</sup>			
Lateral margin involvement	1 (3.3%)	1 (3.0%)	1.000
Vertical margin involvement	0 (0.0%)	0 (0.0%)	–
Submucosal invasion > sm2 (1000 µm)	6 (20.0%)	4 (12.1%)	0.498
Lymphatic involvement	3 (10.0%)	3 (9.1%)	1.000
Vascular involvement	2 (6.7%)	2 (6.1%)	1.000
Tumor budding	1 (3.3%)	1 (3.0%)	1.000
Complication	0 (0.0%)	2 (6.1%)	0.493
Additional treatment given, n (% of patients with additional treatment)			0.624
Surgery	4 (57.1%)	3 (42.9%)	
Chemoradiotherapy	1 (14.3%)	1 (14.3%)	
Surgery + chemoradiotherapy	1 (14.3%)	3 (42.9%)	
Observation	1 (14.3%)	0 (0.0%)	

<sup>1</sup> Some patients had multiple reasons for needing additional treatment.



Park SU et al. ESD and TEM for early superficial rectal cancer... Endoscopy 2012; 44: 1031–1036

# ESD VS TEM

**Table 2** Comparison of clinical results

	ESD	TEM	<i>p</i> value
Macroscopic total resection rate	90.9 % (10/11)	92.3 % (12/13)	NS (0.51)
En bloc resection rate	90.9 % (10/11)	84.6 % (11/13)	NS (0.42)
En bloc R0 resection rate	81.8 % (9/11)	84.6 % (11/13)	NS (0.40)
Recurrence	9.1 % (1/11)	15.5 % (2/13)	NS (0.42)
Procedure time (min)	133 ± 94.8	150 ± 66.3	NS (0.69)
Hospital stay (days)	3.8 ± 3.3	4.08 ± 1.7	NS (0.81)

*ESD* endoscopic submucosal dissection, *TEM* transanal endoscopic microsurgery, *NS* not significant

Kawaguti Surg Endosc 2014; 28:1173–1179



# ESD VS TEM

**Table 3** Comparison of complications in ESD and TEM groups

	ESD	TEM	<i>p</i> value
Perforation	2	NA	NA
Pneumothorax	2	0	NS (0.2)
Postpolypectomy syndrome	1	0	NS (0.4)
Liquid incontinence	0	1	NS (1.0)
Subclinical rectal stricture	0	1	NS (1.0)
Perforation of peritoneum	0	2	NS (0.5)
Pneumoperitoneum	0	1	NS (1.0)

*ESD* endoscopic submucosal dissection, *TEM* transanal endoscopic microsurgery, *NA* not applicable

Kawaguti Surg Endosc 2014; 28:1173–1179

# ESD VS TEM

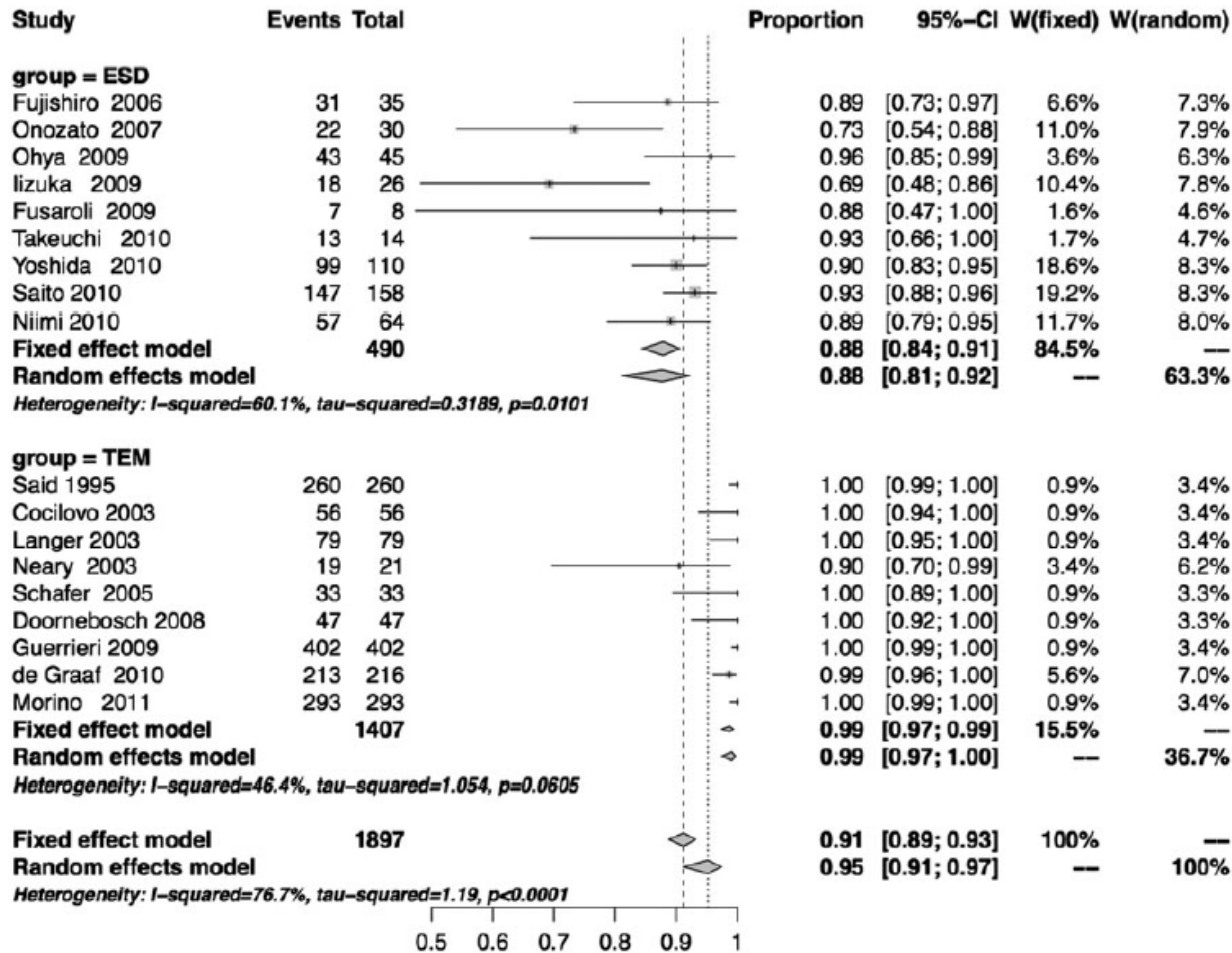
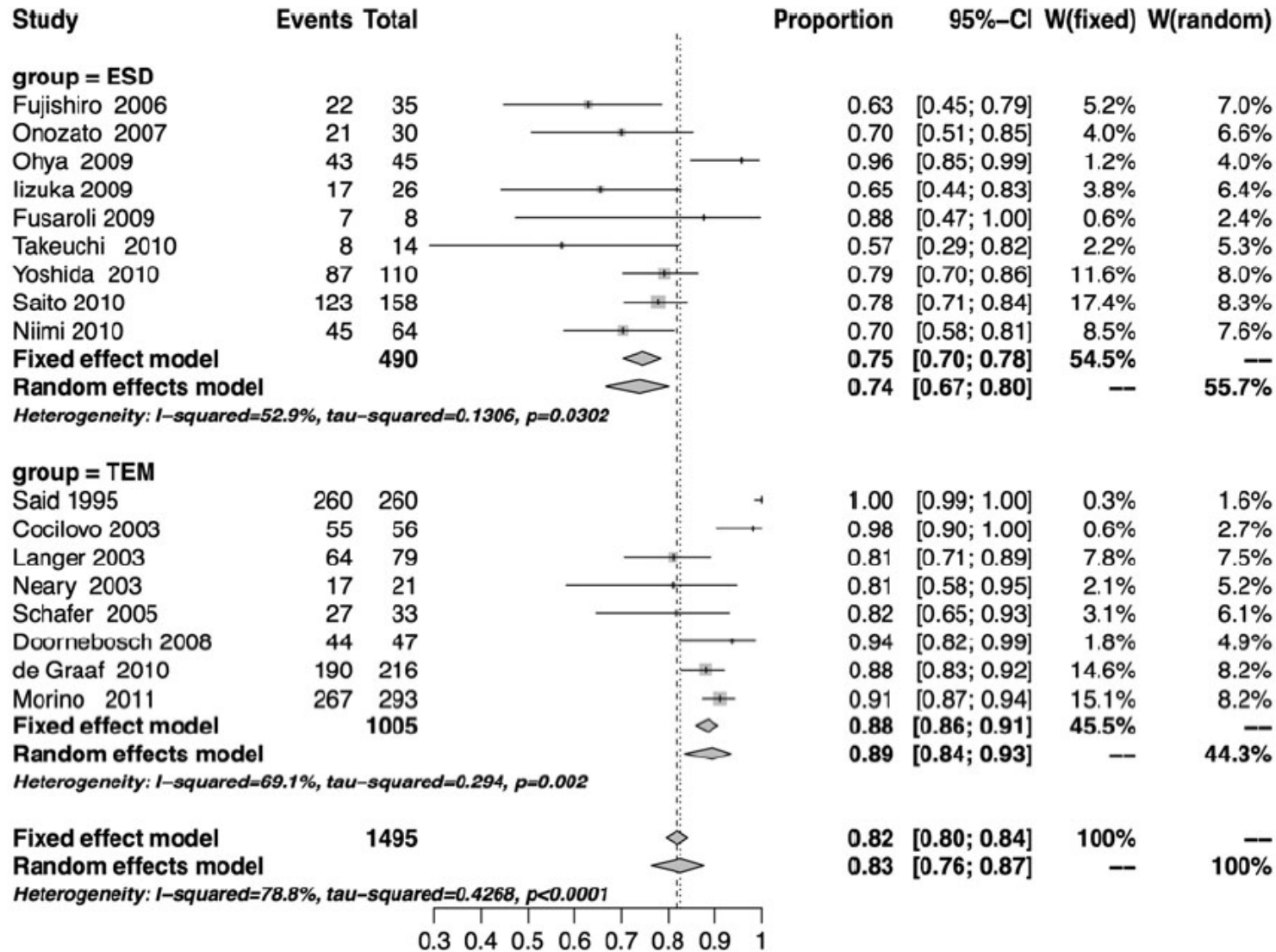


Fig. 2 En bloc resection rates for ESD and TEM, showing a statistically significant advantage of TEM ( $P < 0.001$ )

# ESD VS TEM



R0 resection rates for ESD and TEM, showing a statistically significant advantage of TEM ( $P < 0.001$ )

# ESD VS TEM

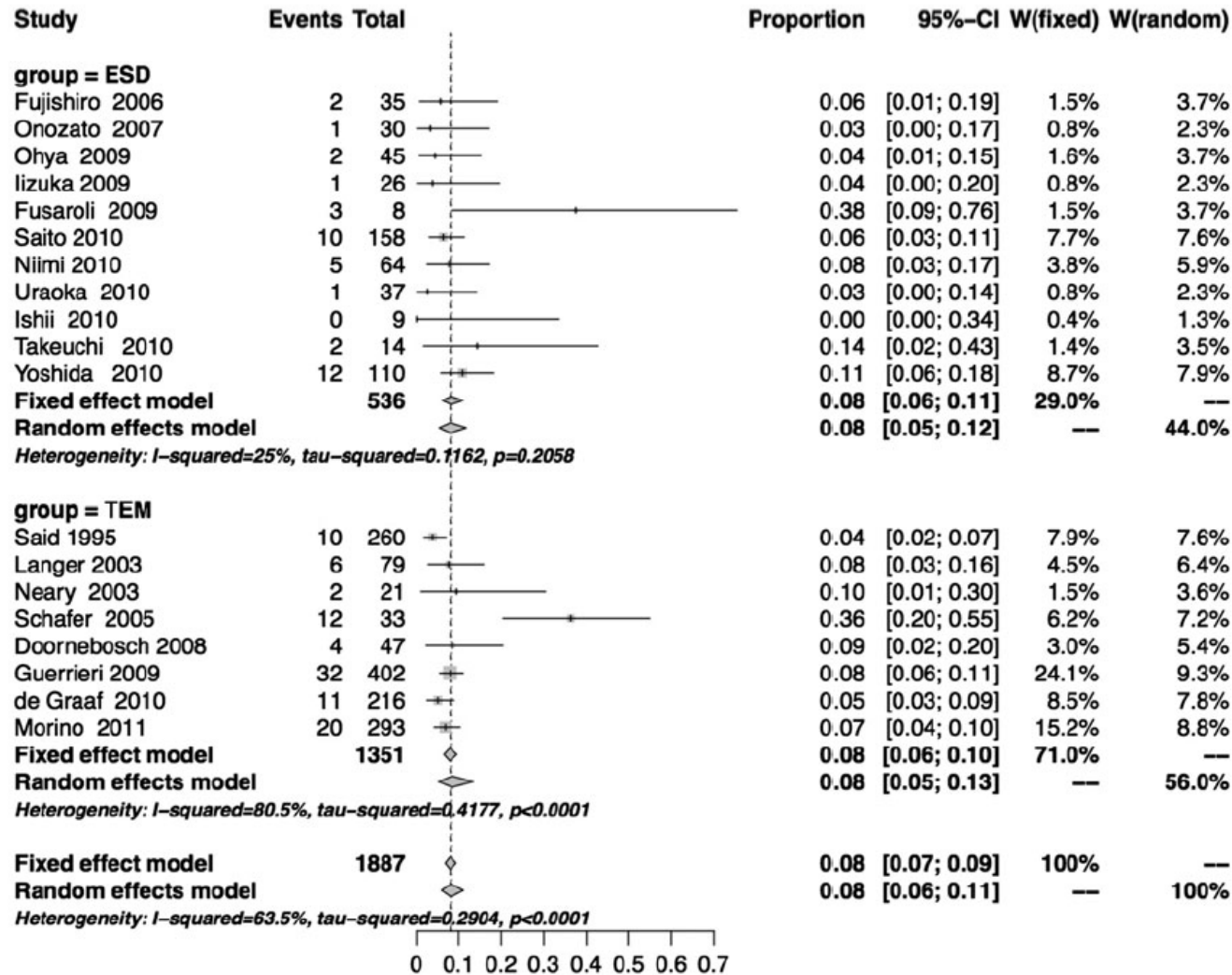


Fig. 4 Perioperative complication rates after ESD and TEM, showing substantial equivalence between the two groups ( $P = 0.874$ )



# ESD VS TEM

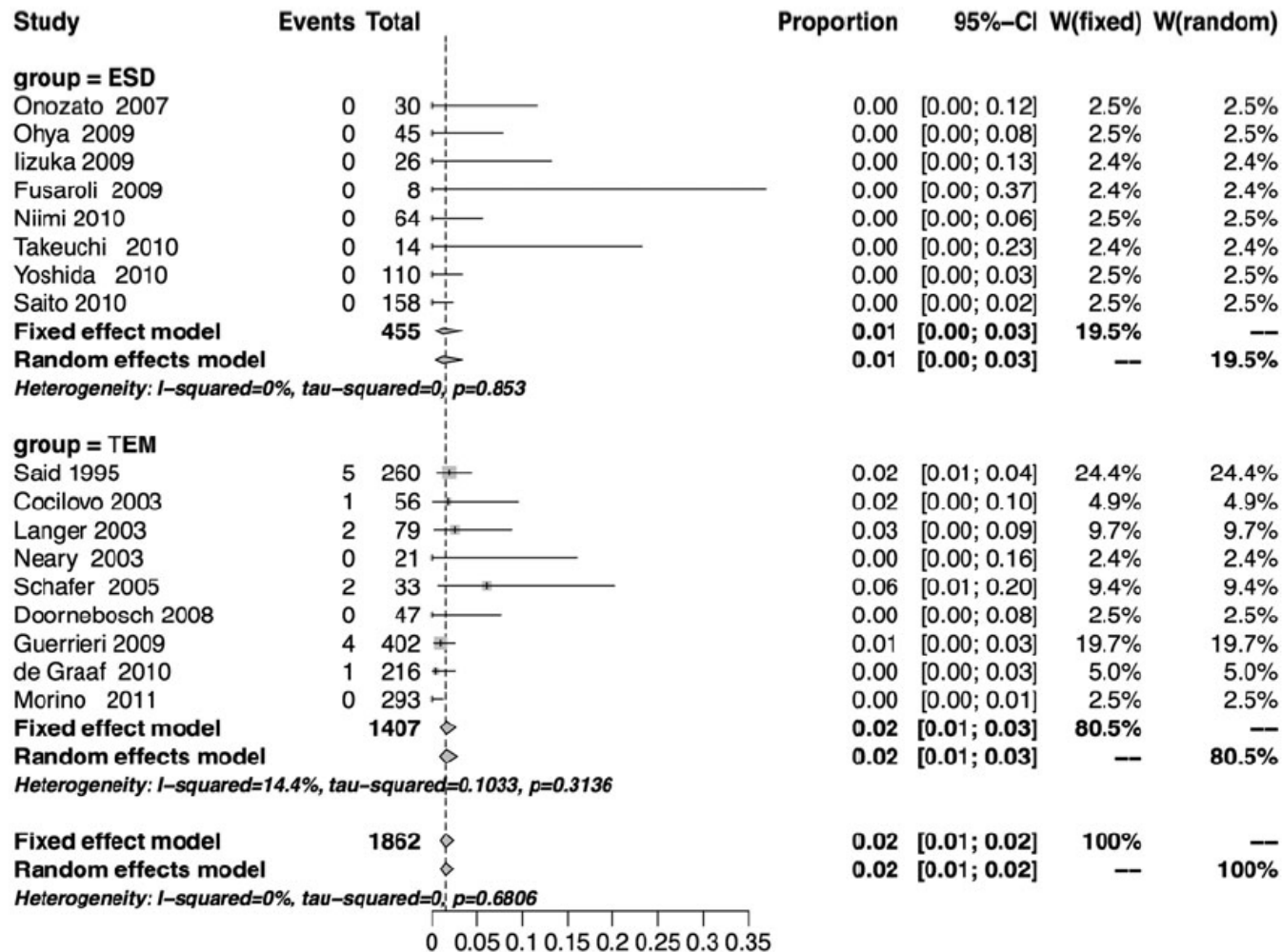
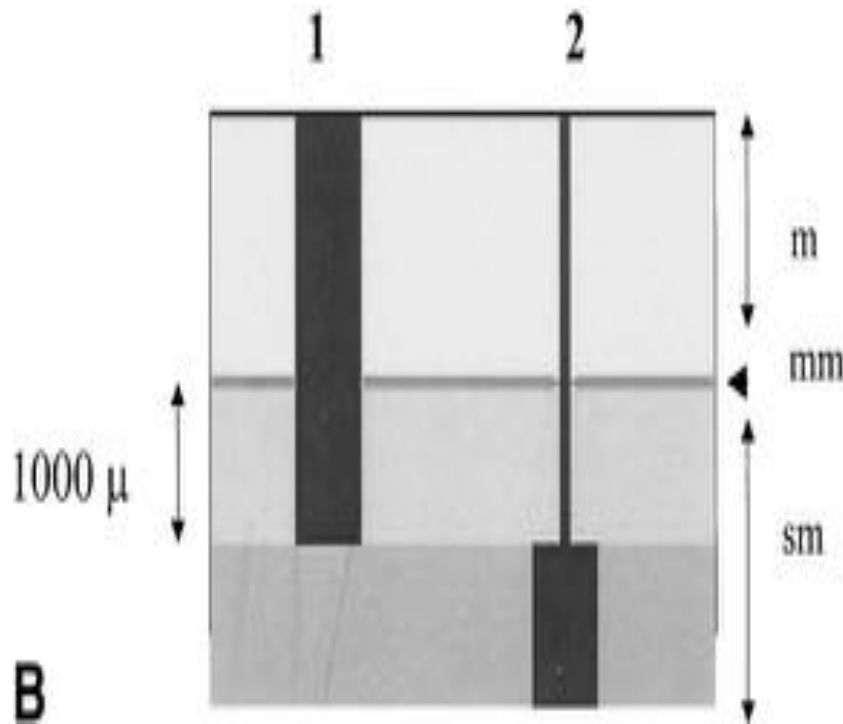


Fig. 5 Need for additional abdominal surgery for control of complications after ESD and TEM, showing a substantial equivalence between the two groups ( $P = 0.665$ )



# Profondità di invasione della sottomucosa e rischio di metastasi linfonodali



	Totali	Con linfonodi positivi (%)
sm1	147	1 (0.7%)
sm2	105	7 (6.7%)
sm3	71	10 (14.3%)

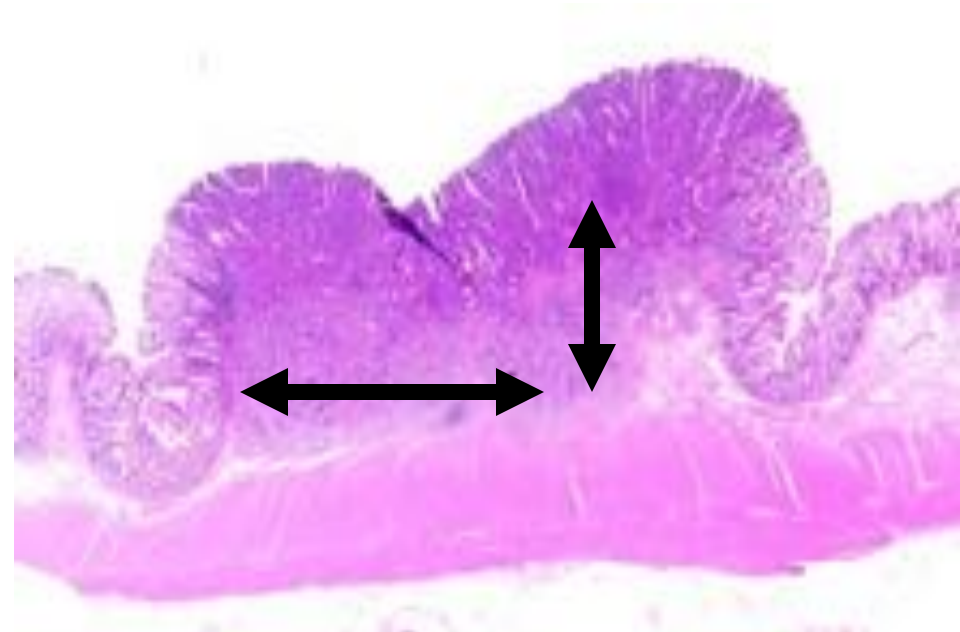
*Kudo et al. in Lambert R, Lightdale CJ editors, GIE 2003*

Nelle lesioni neoplastiche superficiali del colon il rischio di metastasi linfonodali è alto quando l'invasione raggiunge sm3. Nei campioni EMR il rischio di metastasi linfonodali è basso o nullo quando l'invasione nella sottomucosa è < 1000 μ

# Profondità di invasione della sottomucosa e rischio di metastasi linfonodali

## Lymph Node Metastasis

Width sm < 4000 $\mu\text{m}$	2.5%
Width sm > 4000 $\mu\text{m}$	18.2%
Depth sm < 2000 $\mu\text{m}$	3.9%
Depth sm > 2000 $\mu\text{m}$ :	17.1%



**Table 1. Depth of local tumor invasion of early rectal cancer: comparison of endorectal ultrasonography and histopathologic findings.**

Histology	n	No. classified by endorectal ultrasonography				
		uTis	uT1-slight	uT1-massive	uT2	uT3-4
pTis	35	26	6	3		
pT1-slight	8	2	4	2		
pT1-massive	37	1	2	28	4	2
pT2	74	1	1	6	40	26
pT3-4	155				6	149

uT: ultrasonographic classification; pT: pathologic classification.

*Akasu T, et al. World J Surg 2000*

**309 neo. rettali, giudicate non trattabili endoscopicamente.**

**Infiltrazione sm: sens. 99%; spec. 74%; PPV 97%; NPV 87%.**

**Infiltrazione musc. propria: sens. 97%; spec. 93%; PPV 97%; NPV 90%.**

**TABLE 3****Summary Estimates of Sensitivity and Specificity for Endoluminal US, CT, and MR Imaging in the Staging of Rectal Cancer**

Stage	Imaging Modality	Sensitivity (%)	Specificity (%)
Muscularis propria invasion	EUS	94 (90, 97)	86 (80, 90)
	CT	NA	NA
	MR imaging	94 (89, 97)	69 (52, 82)*
Perirectal tissue invasion	EUS	90 (88, 92)	72 (69, 81)
	CT	79 (74, 84)*	78 (73, 83)
	MR imaging	82 (74, 87)*	76 (65, 84)
Adjacent organ invasion	EUS	70 (62, 77)	97 (96, 98)
	CT	72 (64, 79)	96 (95, 97)
	MR imaging	74 (63, 83)	96 (95, 97)
Lymph node involvement	EUS	67 (60, 73)	78 (71, 84)
	CT	55 (43, 67)	74 (67, 80)
	MR imaging	66 (54, 76)	76 (59, 87)

Note.—Numbers in parentheses are 95% CIs. EUS = endoluminal US, NA = not applicable.

\* Significantly lower than EUS.

**Polipo con sospetta cancerizzazione (Pit  
Pattern V sec. Kudo)**



**EUS**

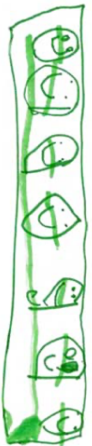
T1

T2

**ESD/TEM**

**CHIRURGIA**

# ESD VS TEM



# CONCLUSIONI

- Il retto è una sede estremamente favorevole per spingersi alle possibilità operative estreme dell'endoscopia operativa
- Lesioni del retto distale con alta probabilità di essere degenerate devono essere trattate in modo aggressivo per evitare interventi demolitivi praticati per istologia inadeguata

