



QUALITY IN ENDOSCOPY

**UPPER GI ENDOSCOPY
& NEOPLASIA**

FOLLOW-UP

When is CT-scan necessary?

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Follow-up

When is CT-scan necessary?

- Follow-up (F-up) with CT-scan may eventually be necessary when a substantial risk of loco-regional or distant metastasis exists after endoscopic resection (ER)
- No study has clearly defined a effective and validated protocol for imaging F-up in this context
- Guidelines on surveillance after ER are mainly focused on luminal disease

Follow-up

When is CT-scan necessary?

- Two different scenarios to consider:
 - Endoscopic *curative* resection
 - Endoscopic *non-curative* resection
 - Variable criteria according to type and location of neoplasia



Follow-up

When is CT-scan necessary?

Gastric Cancer

Follow-up

When is CT-scan necessary?

- Two different scenarios to consider:
 - Endoscopic *curative* resection
 - Absolute criteria

	Mucosal Cancer				Submucosal Cancer	
	UL -		UL +		sm 1	sm 2
	≤ 20	> 20	≤ 30	> 30	≤ 30	Any size
Differentiated						
Undifferentiated						

Follow-up

When is CT-scan necessary?

- Two different scenarios to consider:
 - Endoscopic *curative* resection
 - Absolute criteria
 - Virtually no risk of metastases
 - *No indication for imaging F-up*

Follow-up

When is CT-scan necessary?

- Two different scenarios to consider:
 - Endoscopic *curative* resection
 - Absolute criteria
 - 2010 Gastric Cancer: ESMO clinical practice guidelines for diagnosis, treatment and follow-up
 - 2011 JGCA Gastric Cancer Treatment Guidelines
 - 2011 BSG Guidelines on management of gastric Ca
 - 2013 National Comprehensive Cancer Network
 - Clinical Practice Guidelines in Oncology

Follow-up








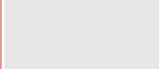
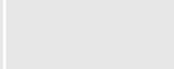
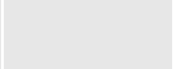
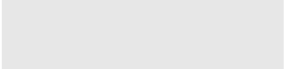
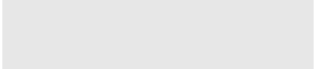
When is CT-scan necessary?

- Two different scenarios to consider:
 - Endoscopic *curative* resection
 - Absolute criteria
 - History & physical examination
 - Endoscopic surveillance
 - *Imaging only if clinically indicated*

Follow-up

When is CT-scan necessary?

- Two different scenarios to consider:
 - Endoscopic *curative* resection
 - Expanded criteria

	Mucosal Cancer				Submucosal Cancer	
	UL -		UL +		sm 1	sm 2
	≤ 20	> 20	≤ 30	> 30	≤ 30	Any size
Differentiated						
Undifferentiated						



Absolute criteria



Expanded criteria

Follow-up

When is CT-scan necessary?

- Two different scenarios to consider:
 - Endoscopic *curative* resection
 - Expanded criteria
 - 2011 JGCA Gastric Cancer Treatment Guidelines
- “... an expanded indication for ESD as **an investigational treatment...**
- ... the users of these guidelines are reminded **that the evidence regarding the curability** of the latter technique (i.e., ESD under the expanded criteria) **remains insufficient**, and the procedure should be offered with caution.”

Follow-up

When is CT-scan necessary?

- Two different scenarios to consider:
 - Endoscopic *curative* resection
 - Expanded criteria
 - 2011 JGCA Gastric Cancer Treatment Guidelines
 - *F-up: abdominal US or CT-scan are recommended*

Follow-up

When is CT-scan necessary?

- Two different scenarios to consider:
 - Endoscopic *curative* resection
 - Expanded criteria – *surgical validation series*
 - *Undifferentiated* gastric Ca < 2cm, UL-
 - LNM 3/261 cases; **1,15%** (95% CI 0-2,44%)

Chung JW, et al. *J Gastroenterol Hepatol* 2011

Follow-up

When is CT-scan necessary?

- Two different scenarios to consider:
 - Endoscopic *curative* resection
 - Expanded criteria – *treatment outcomes*
 - Similar long-term survival and outcomes

Isomoto H, *et al. Gut* 2009

Gotoda T, *et al. Br J Surg* 2010

Tanabe S, *et al. Gastric Cancer* 2013

Follow-up

When is CT-scan necessary?

- Two different scenarios to consider:
 - Endoscopic *curative* resection
 - Expanded criteria – *case reports*
 - LNM in R0, *sm1* gastric Ca, differentiated, Ly-V-
 - 2 and 4 years later

Nagano H, et al. *Gastric Cancer* 2008

Oya H, et al. *Gastric Cancer* 2012

Follow-up

When is CT-scan necessary?

- Two different scenarios to consider:
 - Endoscopic ***non-curative*** resection
 - Positive lateral margin/piecemeal resection
 - Eventually manageable by further endoscopic therapy
 - Possible risk of LNM
 - ***Additional surgery indicated***

Follow-up

When is CT-scan necessary?

- Two different scenarios to consider:
 - Endoscopic ***non-curative*** resection
 - Possible risk of LNM
 - n=226 patients, **surgery in 144**
 - 4 local tumors without LNM
 - ***2 local tumors with LNM and 7 cases of LNM alone***
 - LNM rate 6,3%

Follow-up

When is CT-scan necessary?

- Two different scenarios to consider:
 - Endoscopic **non-curative** resection
 - Possible risk of LNM
 - n=428 patients > 75 years-old

	Curative ER	Non-curative ER with additional surgery	Non-curative ER without additional surgery
n	308	38	82

- ***F-up: EUS or CT-scan twice a year***

Follow-up

When is CT-scan necessary?

- Two different scenarios to consider:
 - Endoscopic ***non-curative*** resection
 - Possible risk of LNM
 - n=428 patients > 75 years-old

	Curative ER	Non-curative ER with additional surgery	Non-curative ER without additional surgery
n	308	38	82
5-yr survival	85%	92%	63%
Metastasis	-	-	4 cases (4,8%)

Follow-up

When is CT-scan necessary?

- Two different scenarios to consider:
 - Endoscopic ***non-curative*** resection
 - Possible risk of LNM
 - n=428 patients > 75 years-old
 - ***Non-curative ER without surgery***
 - Significantly lower overall and disease-free survivals
 - ++ Ly+ and/or V+; submucosal deep (sm2) invasion

Follow-up

When is CT-scan necessary?

- Two different scenarios to consider:
 - Endoscopic ***non-curative*** resection
 - Possible risk of LNM
 - In the absence of surgery
 - ***Imaging F-up may eventually be indicated***



Follow-up

When is CT-scan necessary?

Esophageal Cancer

Follow-up

When is CT-scan necessary?

- **Barrett's adenocarcinoma**
 - 2010 Esophageal Cancer: ESMO clinical practice guidelines for diagnosis, treatment and follow-up
 - 2011 AGA Technical Review on Management of Barrett's Esophagus
 - 2012 Consensus Statements for Management of Barrett's Dysplasia and Early-Stage Esophageal Adenocarcinoma, Based on a Delphi Process
 - 2013 National Comprehensive Cancer Network
 - Clinical Practice Guidelines in Oncology

Follow-up

When is CT-scan necessary?

- **Barrett's adenocarcinoma**

- No recommendations concerning imaging F-up
- Supported by excellent long-term survival free of disease

Pech O et al. Gut 2008

- Is there a role in ER expanded indication (sm1?) or endoscopic non-curative resection?

Follow-up

When is CT-scan necessary?

- **Esophageal squamous cell cancer**
 - 2012 Japan Esophageal Society
 - Clinical Practice Guidelines for Esophageal Cancer
 - Recommends F-up at 6-12 months intervals after ER:
 - CT-scan chest and abdomen
 - US neck and abdomen
 - EUS

Follow-up

When is CT-scan necessary?

- **Esophageal squamous cell cancer**

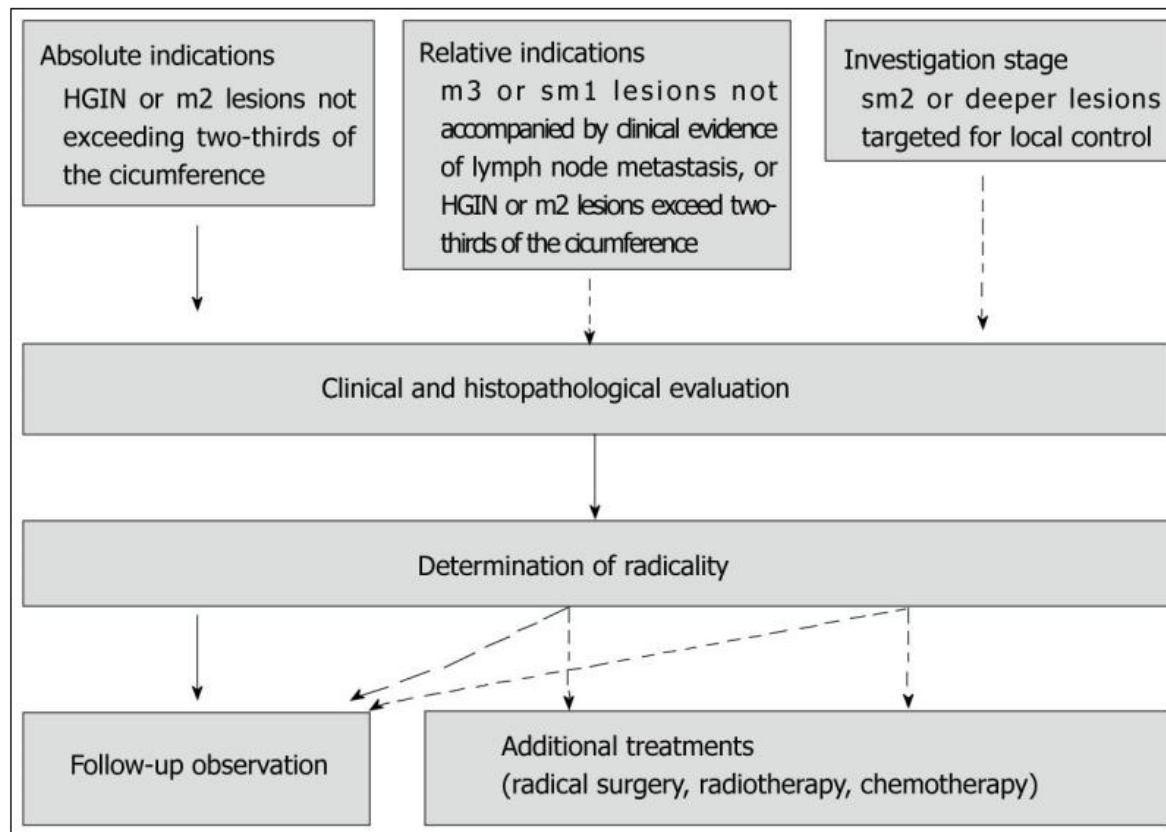


Figure 1

Indication for endoscopic resection in the Japan Esophageal Society guideline.

Follow-up

When is CT-scan necessary?

- **Esophageal squamous cell cancer**

- Higher propensity for metastatic spread
 - Stricter criteria of curative resection (m1,m2)
- Some studies evaluating expansion of criteria (m3,sm1)

	LNM (%)					
	m1	m2	m3	sm1	sm2	sm3
Kodama <i>et al.</i>	<2		19		44	
Eguchi <i>et al.</i>	0	5,6	18	53,1	53,9	
Oyama <i>et al.</i>			9,3	16,9		

Follow-up

When is CT-scan necessary?

- **Esophageal squamous cell cancer**
 - Long-term outcomes (**EMR**)
 - pts with **m3 or deeper** ESCC (prospective, non-random.)
 - 22 pts EMR versus 44 pts esophagectomy (control)
 - *F-up: CT chest, abdomen; US neck, abdomen (+/-EUS)*
 - 5-year cause-specific survival
 - 95% versus 93,5%

Shimizu Y *et al. Gastrointest Endosc* 2002

Follow-up

When is CT-scan necessary?

- **Esophageal squamous cell cancer**
 - Long-term outcomes (**EMR**)
 - pts with **m3 or deeper** ESCC (prospective, non-random.)
 - 16 pts **EMR+CRT** versus 39 pts esophagectomy
 - No recurrence on F-up
 - 5-year overall survival
 - 100% versus 87,5%

Shimizu Y *et al. Gastrointest Endosc* 2004

Follow-up

When is CT-scan necessary?

- **Esophageal squamous cell cancer**
 - Long-term outcomes (**EMR**)
 - 104 pts with **m3** ESCC (multicenter, retrospective)
 - 86 pts no additional treatment
 - **F-up: CT neck, chest, abdomen (+/- EUS)**
 - 2 cases of LNM at 21 and 48 months
 - 5-year cause-specific survival 95%

Katada C *et al.* *Endoscopy* 2007

Follow-up

When is CT-scan necessary?

- **Esophageal squamous cell cancer**
 - Long-term outcomes (**ESD**)
 - 19 pts with **m3,sm1** ESCC (4 pts RT/CRT; 3 pts surgery)
 - **No imaging F-up**
 - 2 cases of distant metastasis at 9 and 18 months
 - Cause-specific survival 85% (**vs** 100% absolute ind.)

Ono et al. Gastrointest Endosc 2009

Follow-up

When is CT-scan necessary?

- **Esophageal squamous cell cancer**
 - JCOG 0508 phase II trial (multicentric, single arm)
 - pts with **sm1, sm2** ESCC
 - EMR+CRT
 - **F-up: CT-scan neck, chest and abdomen**
 - **4/4 months for 3 years**
 - End of F-up period 2014

Kurokawa Y *et al.* *Jpn J Clin Oncol* 2009

Follow-up

When is CT-scan necessary?

- **Conclusions**

- No guidelines (except Japanese for esophageal squamous cancer) recommend post-ER imaging follow-up
- Might be considered/evaluated in specific scenarios
 - Expanded indications, non-curative resection

Follow-up

When is CT-scan necessary?

- **Conclusions**

- Actual and possible **limitations**
 - Undefined modalities and protocol
 - Unknown accuracy
 - Uncertainty about effect of therapy on the natural course of metastatic disease
 - Cost-effectiveness