EXTEND OF LYMPH NODE DISSECTION IN ESOPHAGEAL CANCER SURGERY

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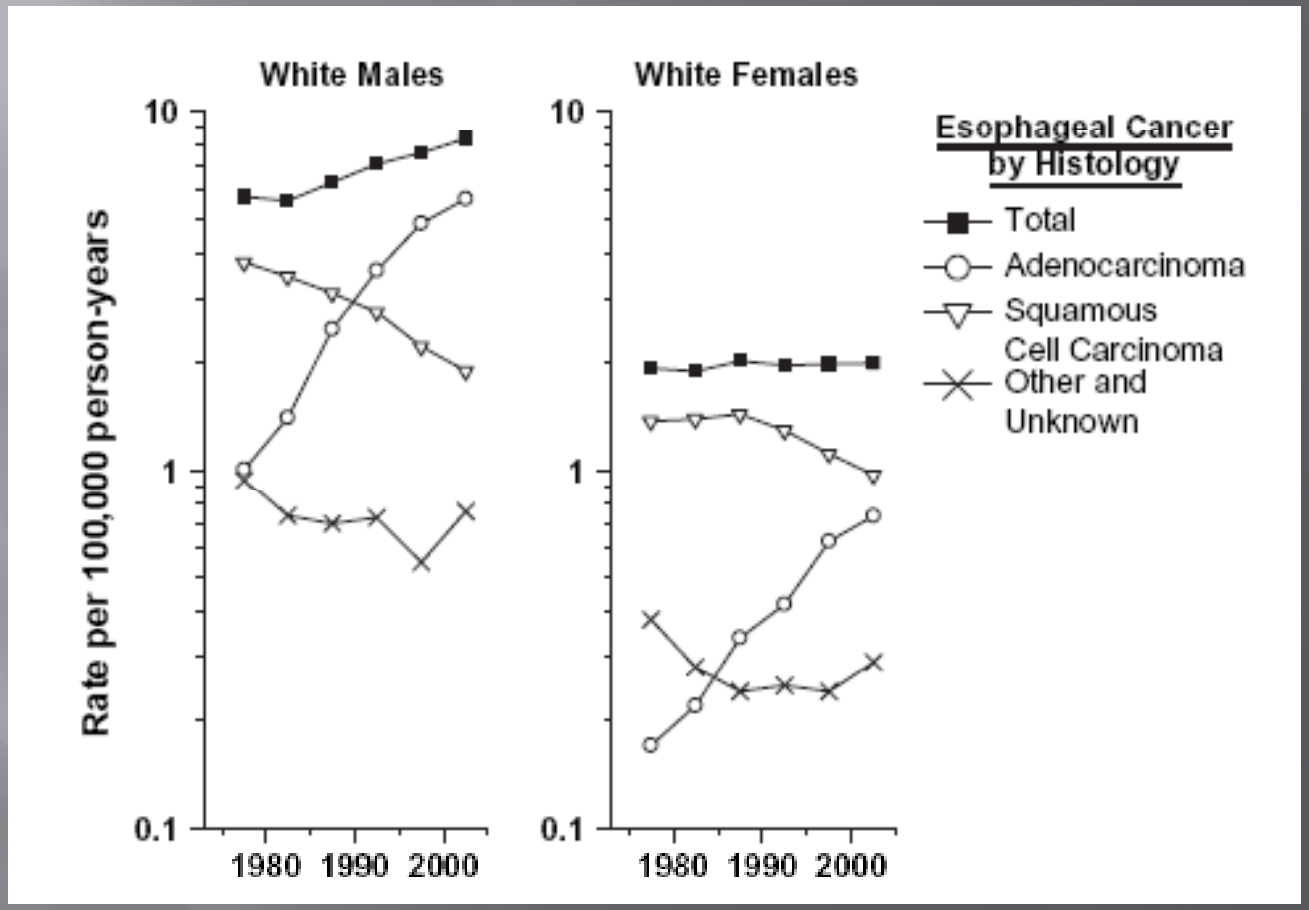
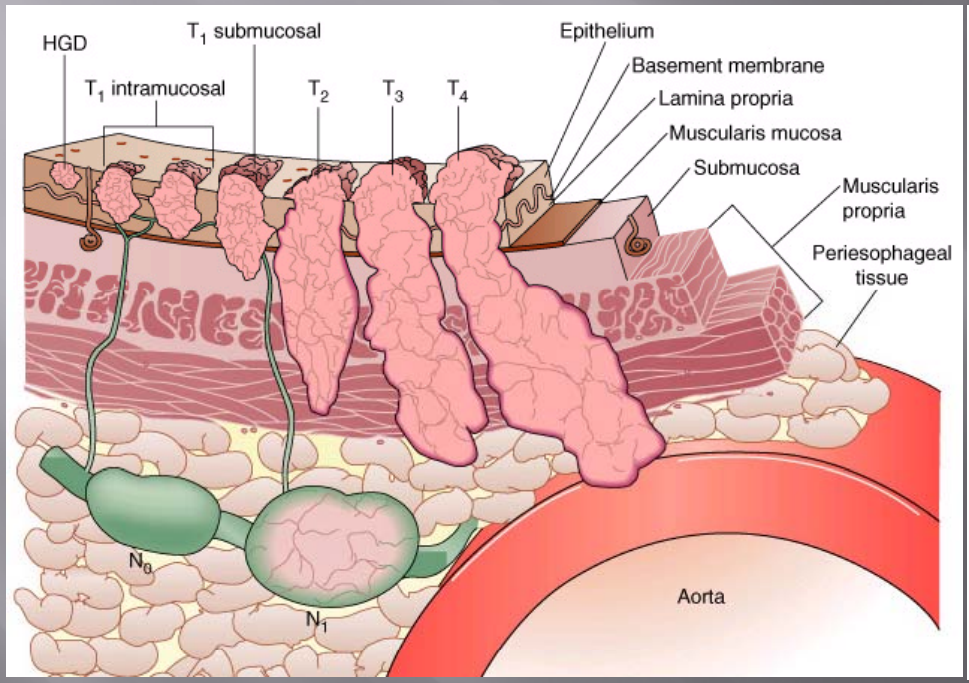
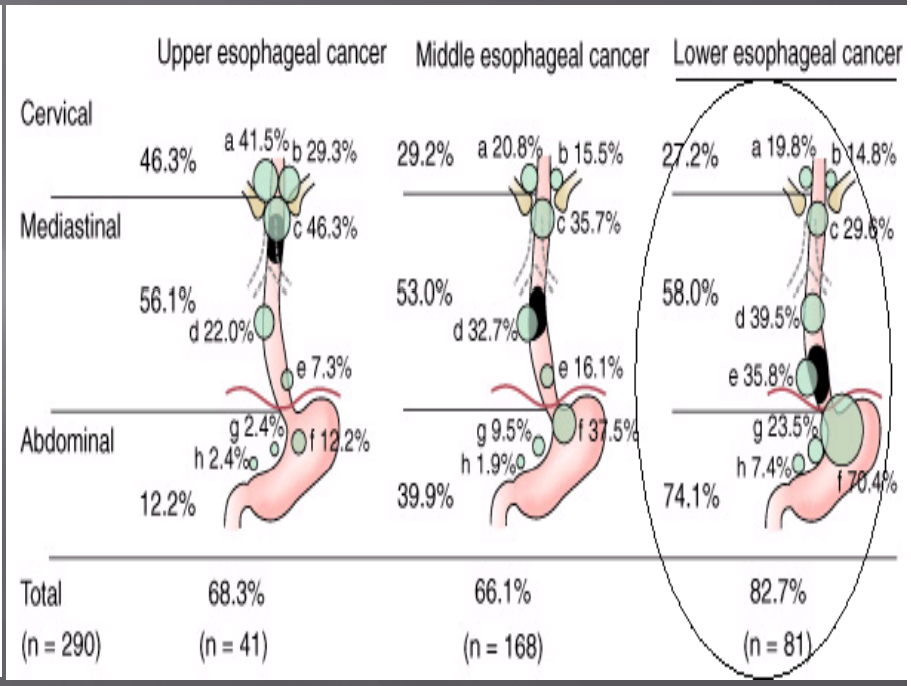
- Esophageal Cancer is still a rare disease (5-16/100000) so it is difficult to develop evidence based guidelines



J Natl Cancer Inst 2008;100:1184–1187


HGD
T1 submucosal
T1 intramucosal
T2
T3
T4
Epithelium
Basement membrane
Lamina propria
Muscularis mucosa
Submucosa
Muscularis propria
Periesophageal tissue
N0
N1
Aorta


Upper esophageal cancer
Middle esophageal cancer
Lower esophageal cancer
Cervical
Mediastinal
Abdominal
46.3%
a 41.5%
b 29.3%
c 46.3%
56.1%
d 22.0%
e 7.3%
g 2.4%
h 2.4%
f 12.2%
12.2%
29.2%
a 20.8%
b 15.5%
c 35.7%
53.0%
d 32.7%
e 16.1%
g 9.5%
h 1.9%
f 37.5%
39.9%
27.2%
a 19.8%
b 14.8%
c 29.6%
58.0%
d 39.5%
e 35.8%
g 23.5%
h 7.4%
f 76.4%
74.1%
Total
(n = 290)
68.3%
(n = 41)
66.1%
(n = 168)
82.7%
(n = 81)

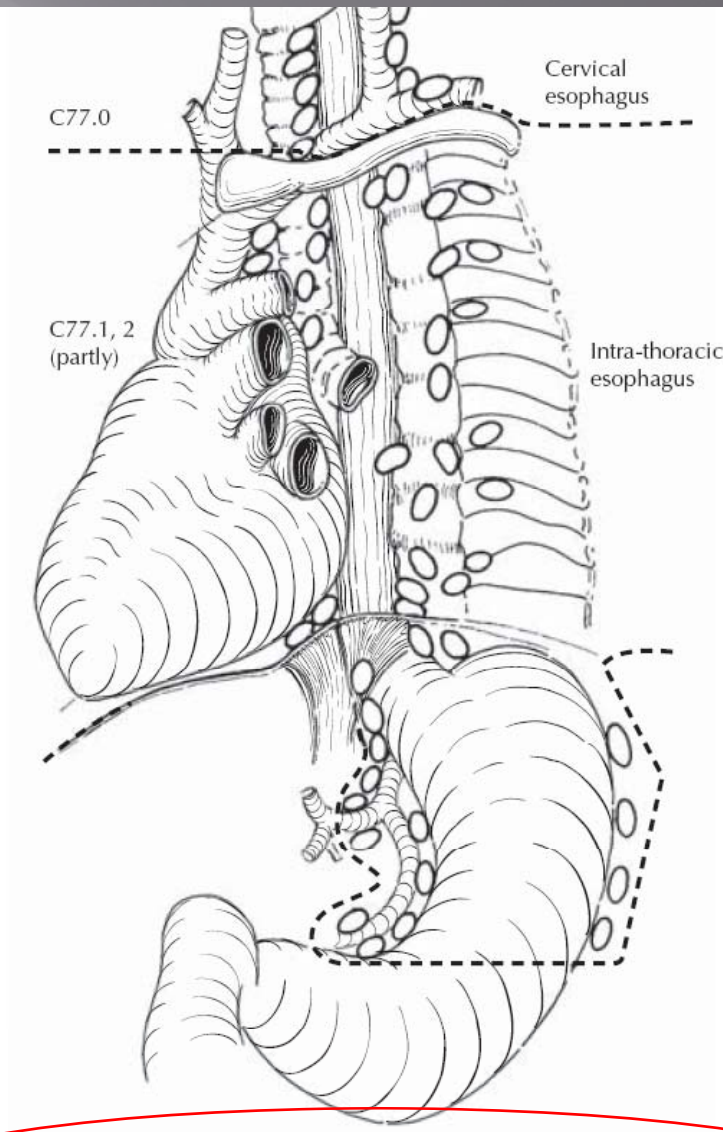
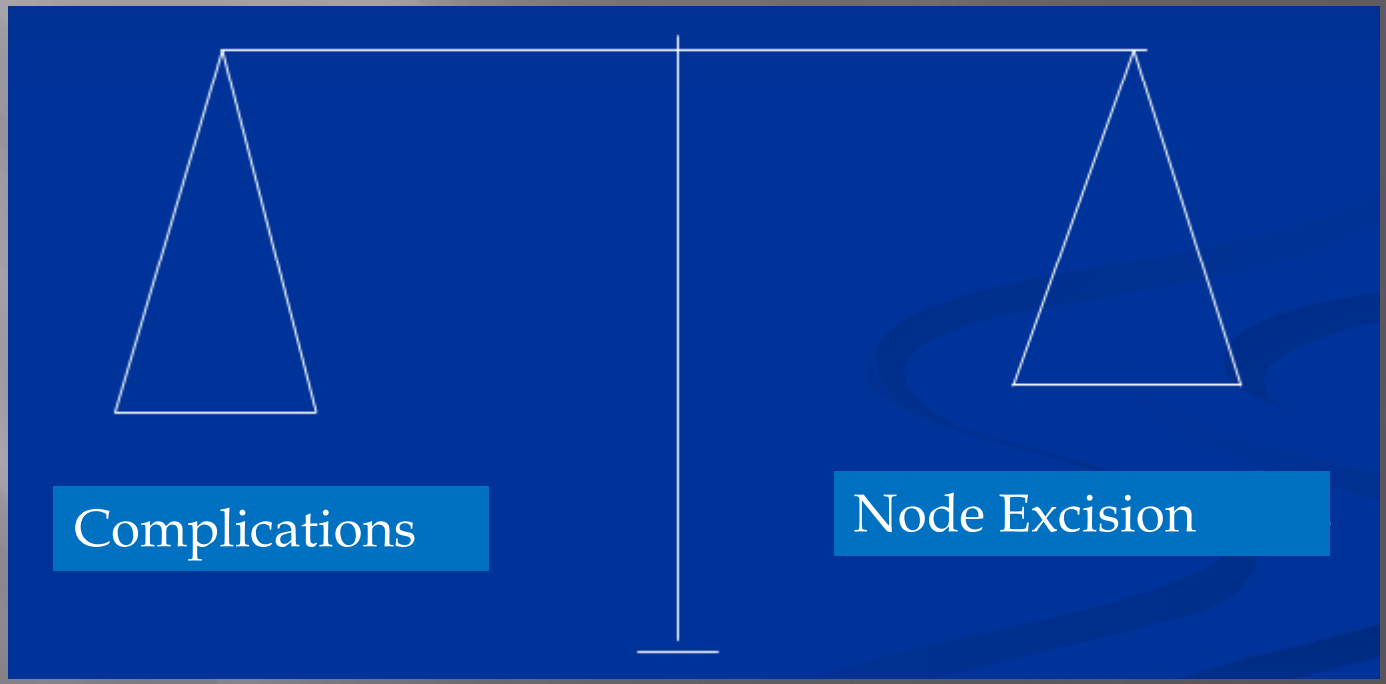


FIGURE 9.2. For intrathoracic tumors involvement of more distant lymph nodes (such as cervical or celiac axis nodes) is currently considered distant metastasis (M1a).

American Joint Committee on Cancer • 2006


Complications
Node Excision

- Transhiatal resection with abdominal lymph node dissection (one field)
- Transthoracic resection with thoracic and abdominal lymph node dissection (two fields)

Transhiatal (one field)

- First described in 1913 by Denk in cadavers
- First clinical application in 1933 by Turner
- Popularized by Orringer

Transhiatal (one field)

Transhiatal Esophagectomy: Clinical Experience and Refinements

Mark B. Orringer, MD, Becky Marshall, and Mark D. Iannettoni, MD

ANNALS OF SURGERY
Vol. 230, No. 3, 392–403

Transhiatal (one field)

Table 5. KAPLAN-MEIER SURVIVAL AFTER TRANSHIATAL ESOPHAGECTOMY BY TUMOR STAGE

TNM Stage	No. of Patients	Survival (%)	
		2 Years	5 Years
0	72	83	51
I	94	84	59
IIA	189	50	22
IIB	79	51	29
III	296	32	10
IVA	28	17	7
IVB	39	6	0

TOTAL 23%

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Transthoracic (two fields)

- Referred also as Enblock
- First described by Logan in 1968
- Popularized by Skinner τo 1983 and Tom DeMeester

Transthoracic (two fields)

Curative Resection for Esophageal Adenocarcinoma

Analysis Of 100 En Bloc Esophagectomies

Jeffrey A. Hagen, MD, Steven R. DeMeester, MD, Jeffrey H. Peters, MD, Para Chandrasoma, MD, and Tom R. DeMeester,

From the Department of Surgery, Keck School of Medicine, University of Southern California, Los Angeles, California

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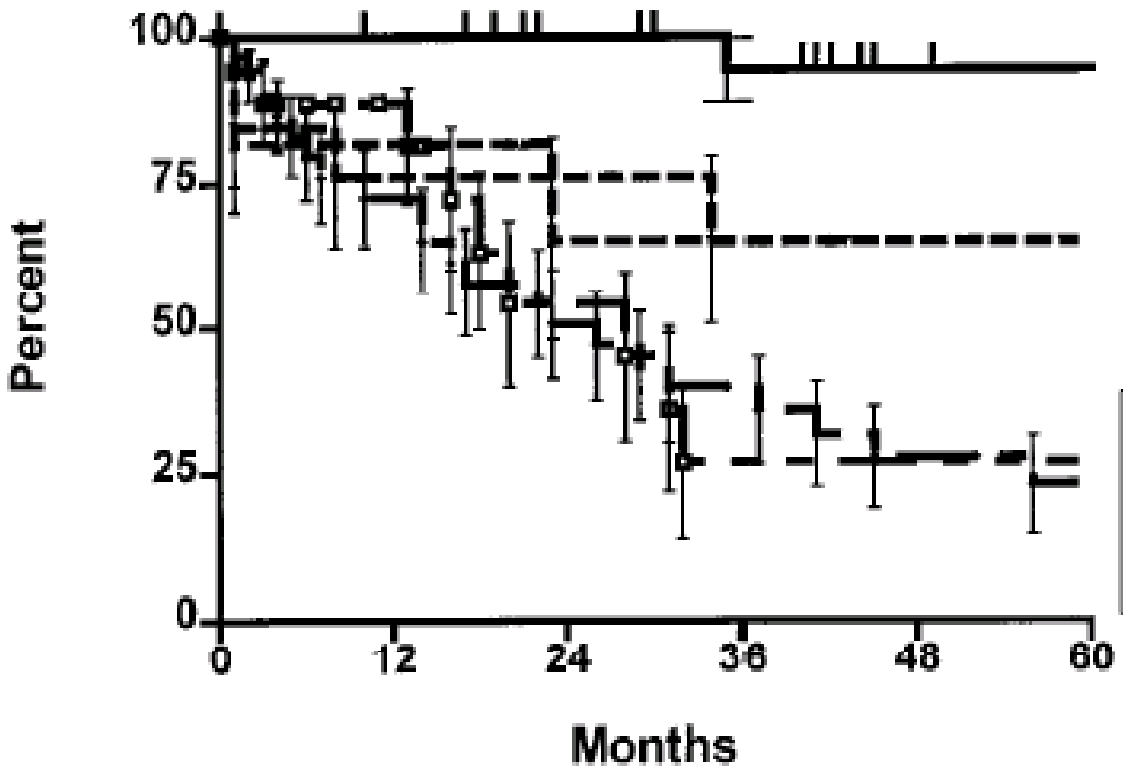
Transthoracic (two fields)



	Number at risk				
	12mo	24mo	36mo	48 mo	60mo
Stage I	26	21	18	10	9
Stage IIa	8	5	5	4	4
Stage IIb	10	10	7	5	4
Stage III	21	15	11	8	6
Stage IV	13	7	4	4	4

ΟΛΙΚΗ 53%

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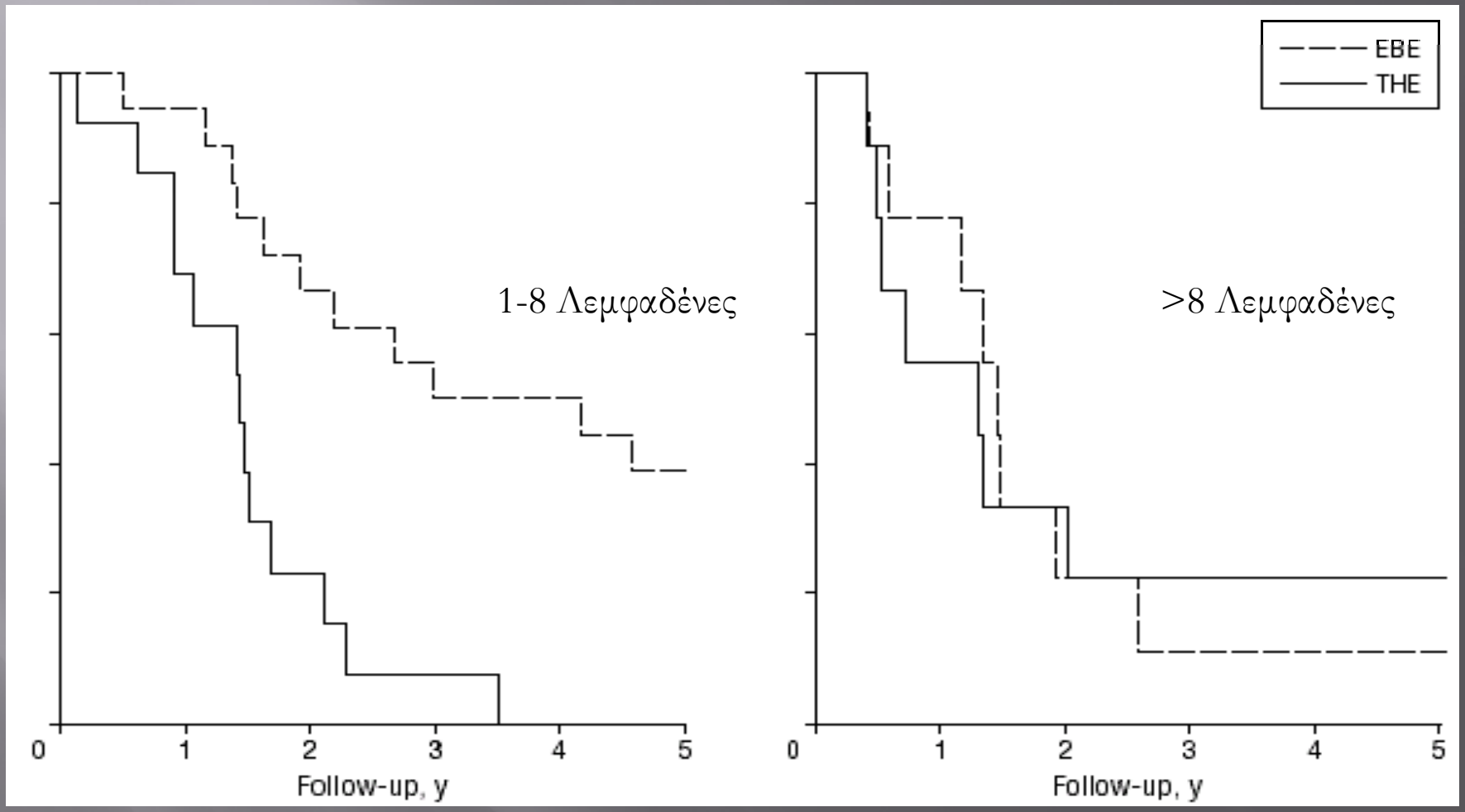
Vol. 234, No. 4, 520–531

En Bloc vs Transhiatal Esophagectomy for Stage T3 N1 Adenocarcinoma of the Distal Esophagus

Jan Johansson, MD; Tom R. DeMeester, MD; Jeffrey A. Hagen, MD; Steven R. DeMeester, MD; Jeffrey H. Peters, MD; Stefan Öberg, MD; Cedric G. Bremner, MD

27%

Arch Surg. 2004;139:627-633



Arch Surg. 2004;139:627-633

Evidence

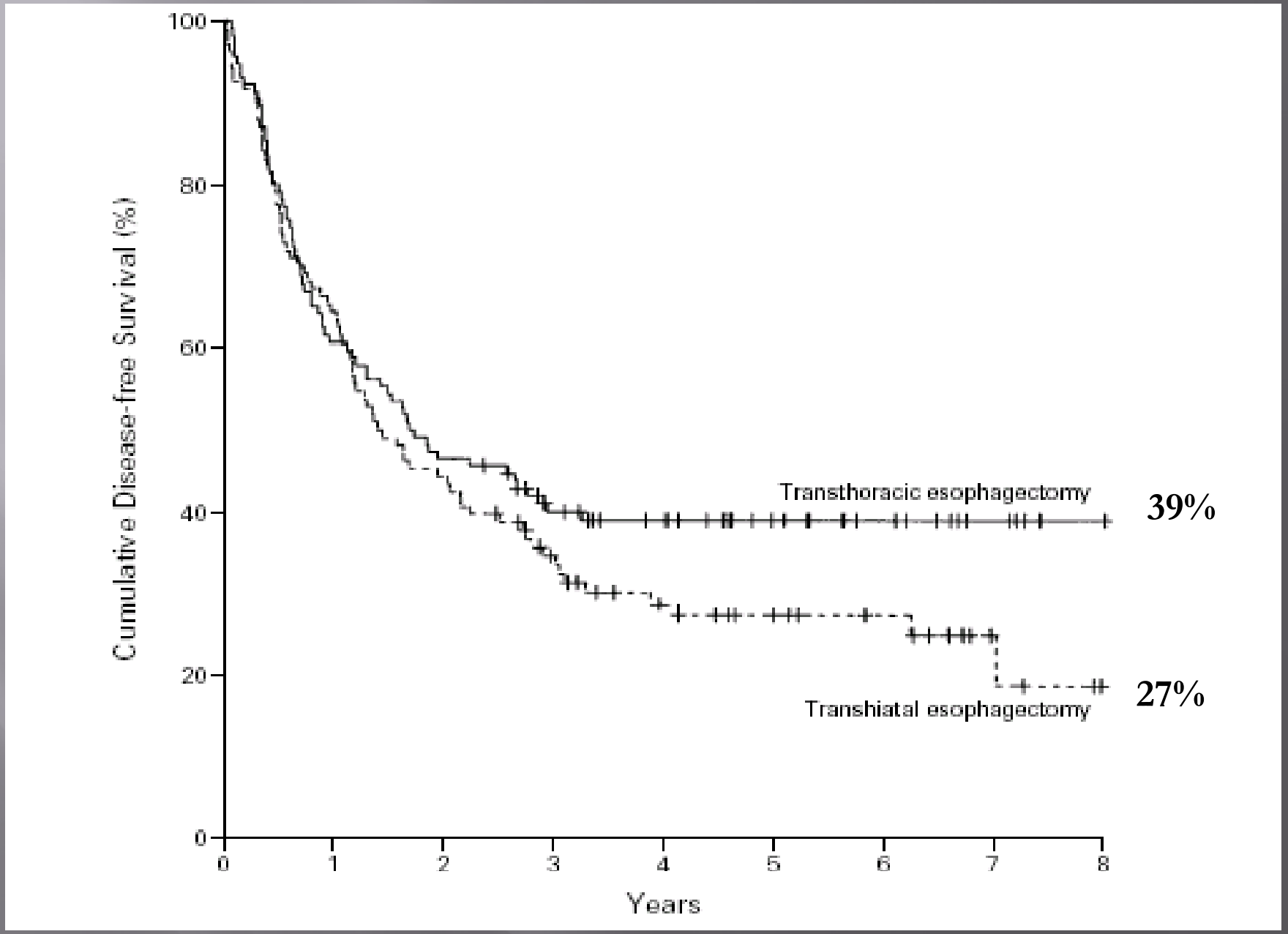
The New England Journal of Medicine

EXTENDED TRANSTHORACIC RESECTION COMPARED WITH LIMITED TRANSHIATAL RESECTION FOR ADENOCARCINOMA OF THE ESOPHAGUS

JAN B.F. HULSCHER, M.D., JOHANNA W. VAN SANDICK, M.D., ANGELA G.E.M. DE BOER, PH.D., BAS P.L. WIJNHOVEN, M.D., JAN G.P. TIJSSEN, PH.D., PAUL FOCKENS, M.D., PEEP F.M. STALMEIER, PH.D., FIEBO J.W. TEN KATE, M.D., HERMAN VAN DEKKEN, M.D., HUUG OBERTOP, M.D., HUGO W. TILANUS, M.D., AND J. JAN B. VAN LANSCHOT, M.D.

N Engl J Med, Vol. 347, No. 21 · November 21, 2002

VARIABLE	TRANSHIATAL ESOPHAGECTOMY (N= 106)	TRANSTHORACIC ESOPHAGECTOMY (N= 114)	P VALUE
Postoperative complications — no. (%)			
Pulmonary complications*	29 (27)	65 (57)	<0.001
Cardiac complications	17 (16)	30 (26)	0.10
Anastomotic leakage†	15 (14)	18 (16)	0.85
Subclinical	9 (8)	8 (7)	
Clinical	6 (6)	10 (9)	
Vocal-cord paralysis‡	14 (13)	24 (21)	0.15
Chylous leakage	2 (2)	11 (10)	0.02
Wound infection	8 (8)	11 (10)	0.53
Ventilation time — days			<0.001
Median	1	2	
Range	0–19	0–76	
ICU–MCU stay — days§			<0.001
Median	2	6	
Range	0–38	0–79	
Hospital stay — days¶			<0.001
Median	15	19	
Range	4–63	7–154	
In-hospital mortality — no. (%)	2 (2)	5 (4)	0.45



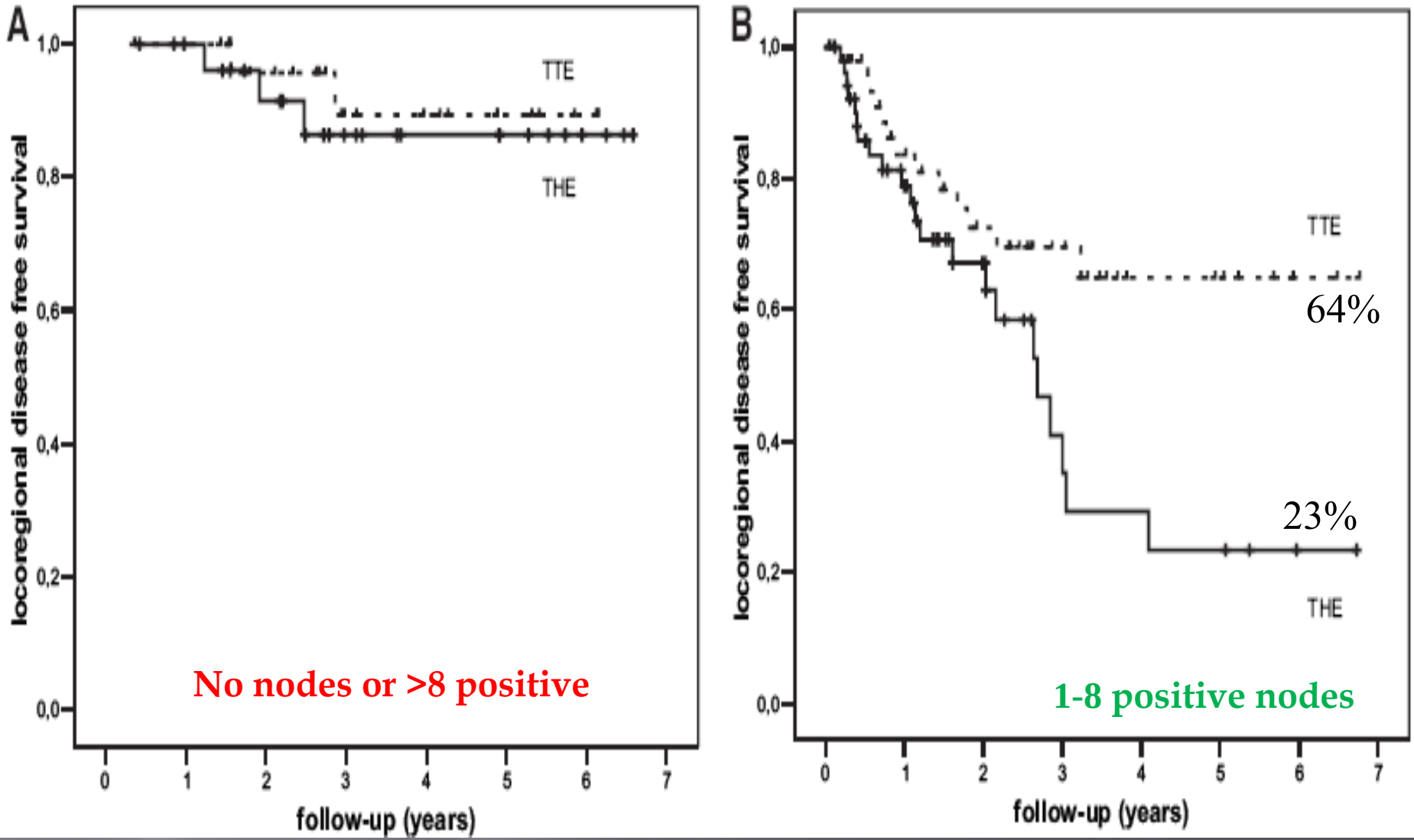
N Engl J Med, Vol. 347, No. 21 · November 21, 2002

Extended Transthoracic Resection Compared With Limited Transhiatal Resection for Adenocarcinoma of the Mid/Distal Esophagus

Five-Year Survival of a Randomized Clinical Trial

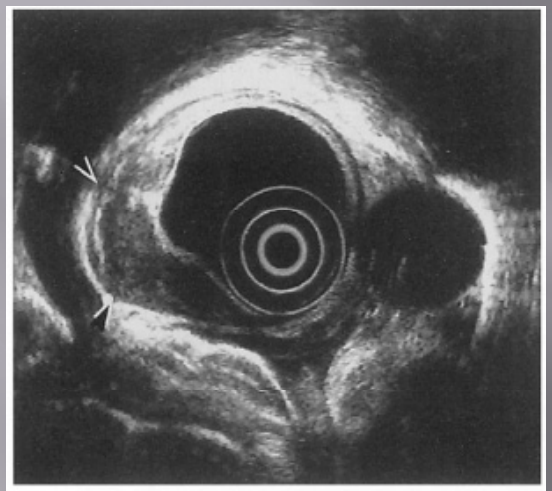
Jikke M. T. Omloo, MD, Sjoerd M. Lagarde, MD,* Jan B. F. Hulscher, MD,* Johannes B. Reitsma, MD, PhD,† Paul Fockens, MD, PhD,‡ Herman van Dekken, MD, PhD,§ Fiebo J. W. ten Kate, MD,¶ Huug Obertop, MD,‖ Hugo W. Tilanus, MD, PhD,‖ and J. Jan B. van Lanschot, MD‖*

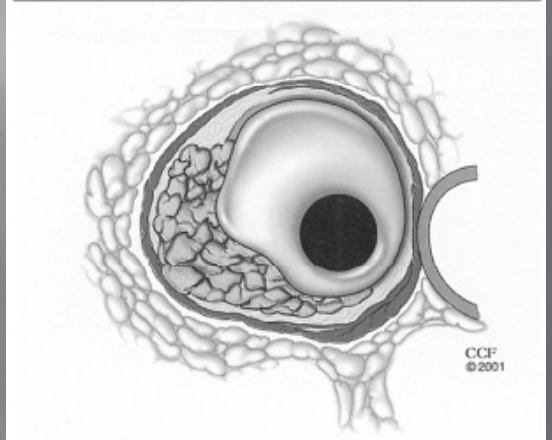
Ann Surg 2007;246: 992–1001

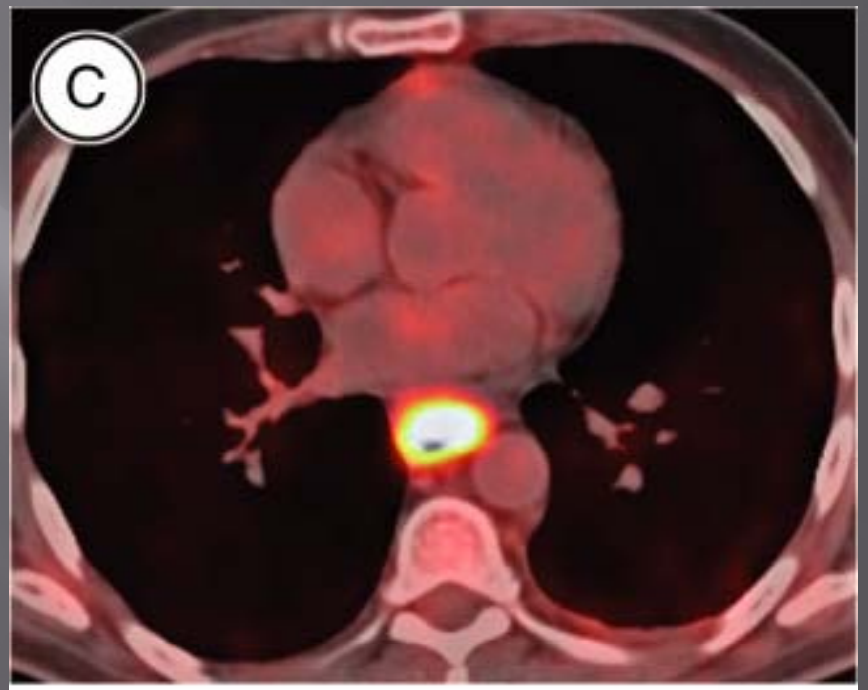


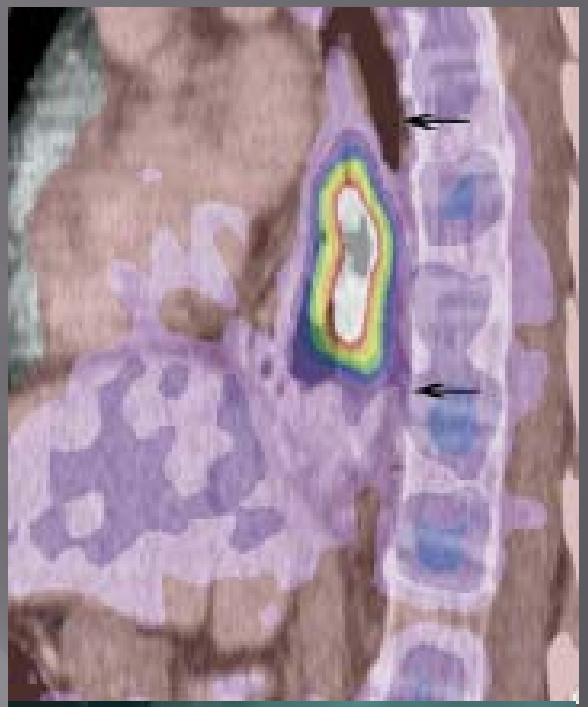
Ann Surg 2007;246: 992–1001

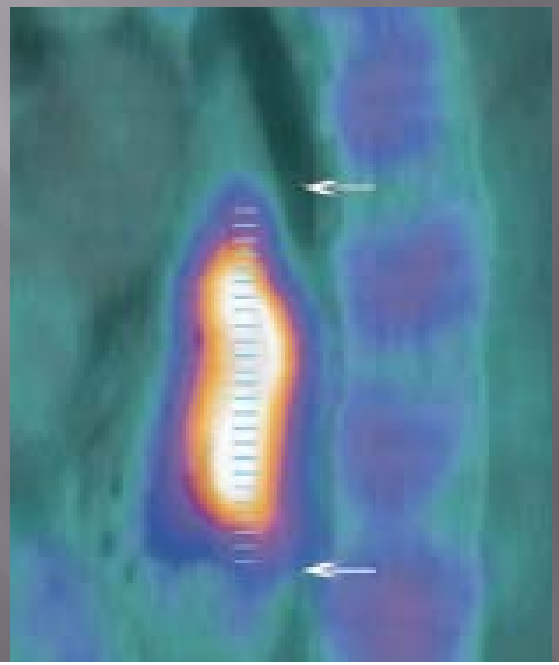
Preop Evaluation











British Journal of Cancer (2008) 98, 547 – 557

www.bjcancer.com

Staging investigations for oesophageal cancer: a meta-analysis

EPM van Vliet[*,1], MH Heijenbrok-Kal[2,3], MGM Hunink[2,3], EJ Kuipers[1,4] and PD Siersema[1,5]

[1]Department of Gastroenterology and Hepatology, Erasmus MC – University Medical Center Rotterdam, Rotterdam, The Netherlands; [2]Department of Epidemiology and Biostatistics, Erasmus MC – University Medical Center Rotterdam, Rotterdam, The Netherlands; [3]Department of Radiology, Erasmus MC – University Medical Center Rotterdam, Rotterdam, The Netherlands; [4]Department of Internal Medicine, Erasmus MC – University Medical Center Rotterdam, Rotterdam, The Netherlands; [5]Department of Gastroenterology and Hepatology, University Medical Center Utrecht, Utrecht, The Netherlands

Disease	Investigation	Number of included studies	Total number of patients	Pooled sensitivity (95% CI)	Pooled specificity (95% CI)	Pooled log odds ratio (95% CI)
Regional lymph node metastases	EUS	31	1841	0.80 (0.75–0.84)	0.70 (0.65–0.75	1.94 (1.71–2.17)
Regional lymph node metastases	CT	17	943	0.50 (0.41–0.60)	0.83 (0.77–0.89)	1.40 (1.08–1.72)
Regional lymph node metastases	FDG-PET	10	424	0.57 (0.43–0.70)	0.85 (0.76–0.95)	1.71 (1.22–2.20)
Celiac lymph node metastases	EUS	5	339	0.85 (0.72–0.99)	0.96 (0.92–1.00)	3.89 (2.67–5.11)
Abdominal lymph node metastases	CT	5	254	0.42 (0.29–0.54)	0.93 (0.86–1.00)	1.74 (0.45–3.04)
Distant metastases	CT	7	437	0.52 (0.33–0.71)	0.91 (0.86–0.96)	2.10 (1.59–2.62)
Distant metastases	FDG-PET	9	475	0.71 (0.62–0.79)	0.93 (0.89–0.97)	2.93 (2.41–3.45)

British Journal of Cancer (2008) 98, 547–557

Review

Digestive Surgery

Dig Surg 2005;22:130–134
DOI: 10.1159/000086161

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Individualised Surgical Treatment of Patients with an Adenocarcinoma of the Distal Oesophagus or Gastro-Oesophageal Junction

J.B.F. Hulscher J.J.B. van Lanschot

Department of Surgery, Academic Medical Centre, University of Amsterdam, Amsterdam, The Netherlands

Conclusion

- Extended lymph node dissection is very effective in a certain group of patients
- With the current technology we can not accurately identify this group
- Individualized tailoring of the approach is recommended
- We believe that PET CT will give answers in the future