Oesophageal cancer

- Welcome
- G-ECHO is hosted by the Gastro Foundation in association with Project ECHO, University of New Mexico
- G-ECHO Fellows is run every Monday at 16:30
- The chat will be open for questions

Introduction

- Top ten cancer
  - World-wide
  - South Africa
- Two biologically distinct subtypes
  - Hampered accumulation of evidence
- Squamous cell carcinoma predominant in SA
- Eastern Cape and KZN
  - Gauteng and Western Cape see patients from these provinces
- Late presentation and poor prognosis
  - <20% eligible for curative treatment (5% in SA)

Diagnosis

- Dysphagia and weight loss are cardinal symptoms
- Late symptoms due to expansive nature of oesophagus
  - No serosa
  - Locally advanced
- Endoscopy with biopsy is gold standard
  - Exact site
  - Length
  - Circumferential
  - Obstruction
  - 6 biopsies

Smyth Nature reviews 2017
Graham Gastroenterology 1982

Staging

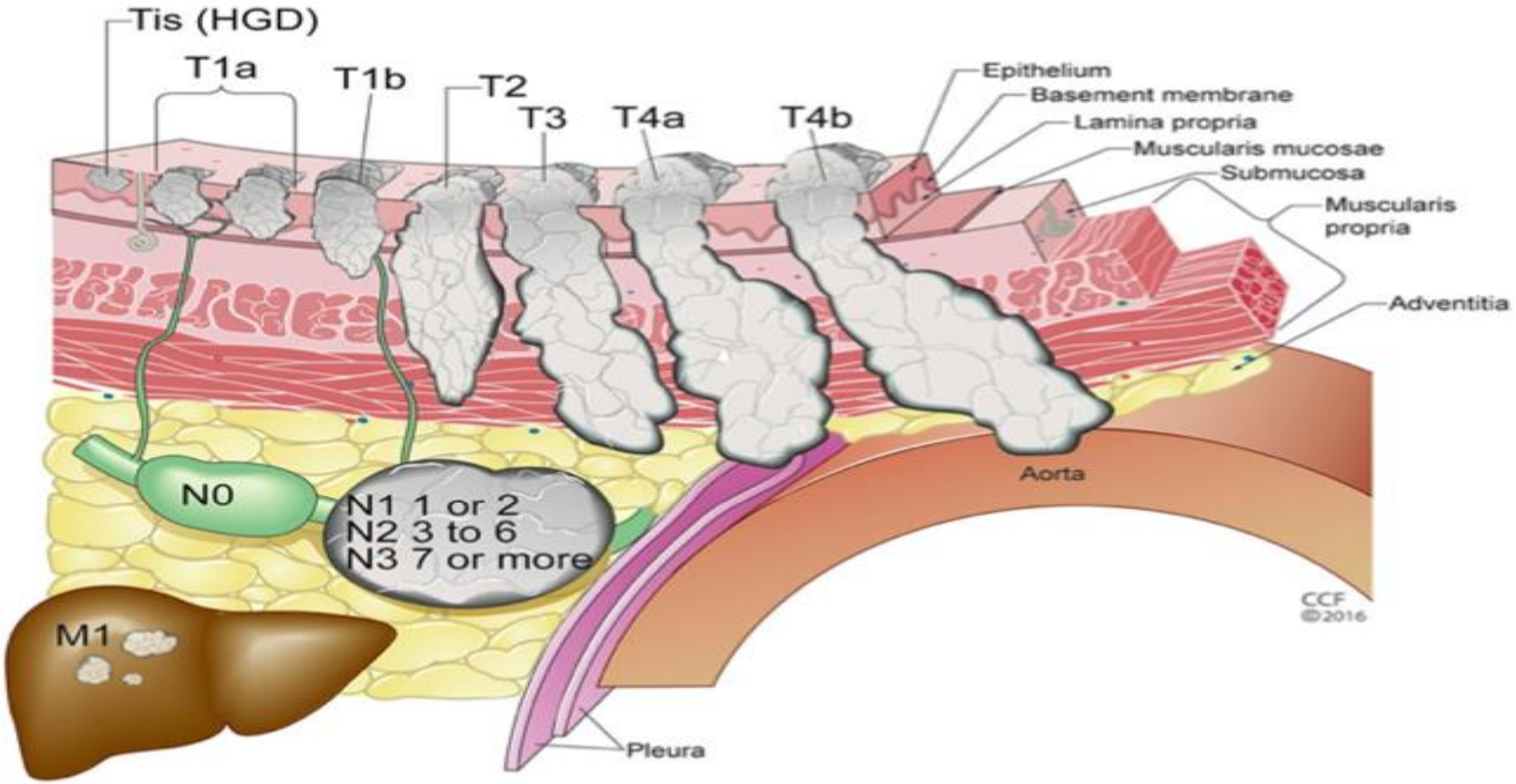
Clinical scenario 1

- 56 year old female
- Dysphagia and weight loss
- No co-morbidities
- ECOG 1
- Upper endoscopy – Tumour 28-34cm
- Histology – SCC
- With regards to staging investigations for this patient

True or False

- N stage is defined by the number rather than the location of nodes **T**
- EUS is superior to CT scan for N staging **F**
- EUS is least accurate for T-stage in T2 lesions **T**
- The specificity of CT for N staging is superior EUS **T**
- A barium swallow should be performed to exclude TOF/axis deviation or angulation **F**

Union for International Cancer control (UICC)



Rice J Thorac Oncol 2017

Modalities for staging

- CT scan
- EUS
- FDG-PET CT
- EMR/ESD
- Other
  - Bronchoscopy
  - MRI
  - Bone scan

Project ECHO
Gastroenterology Foundation of sub Saharan Africa

G-ECHO
GI HEPATOLOGY ECHO OF SUB-SAHARAN AFRICA
ESTABLISHED 2020

National Comprehensive Cancer Network®

NCCN Guidelines Version 1.2022
Esophageal and Esophagogastric Junction Cancers

NCCN Guidelines Inc
Table of Conte
Discuss

WORKUP

- H&P
- Upper GI endoscopy and biopsy[a]
- Chest/abdominal CT with oral and IV contrast
- Pelvic CT with contrast as clinically indicated
- FDG-PET/CT evaluation (skull base to mid-thigh) if no evidence of M1 disease
- CBC and comprehensive chemistry profile
- Endoscopic ultrasound (EUS), if no evidence of M1 unresectable disease
- Endoscopic resection (ER) is essential for the accurate staging of early-stage cancers (T1a or T1b).[a,b] Early-stage cancers can best be diagnosed by ER
- Biopsy of metastatic disease as clinically indicated
- Microsatellite instability (MSI) and PD-L1 testing if metastatic disease is documented/suspected[c]
- HER2 testing if metastatic adenocarcinoma is documented/suspected[c]
- Next-generation sequencing (NGS) may be considered[c]
- Bronchoscopy, if tumor is at or above the carina with no evidence of M1 disease
- Assign Siewert category[d]
- Nutritional assessment and counseling
- Smoking cessation advice, counseling, and pharmacotherapy as indicated[e]
- Screen for family history[f]
- If anemia is suspected, See NCCN Guidelines for Hematopoietic Growth Factors

CLINICAL STAGE[g] / HISTOLOGIC CLASSIFICATION[c]

- **Stage I–IVA[g,h]** (locoregional disease, except T4b or unresectable N3[h])
  - Squamous cell carcinoma → See ESOPH-2
  - Adenocarcinoma → See ESOPH-1
- **Stage IVA[g]** (includes T4b or unresectable N3 only) and IVB (metastatic disease)
  - Squamous cell carcinoma → See ESOPH-1
  - Adenocarcinoma → See ESOPH-1

[a] See Principles of Endoscopic Staging and Therapy (ESOPH-A)

True or False

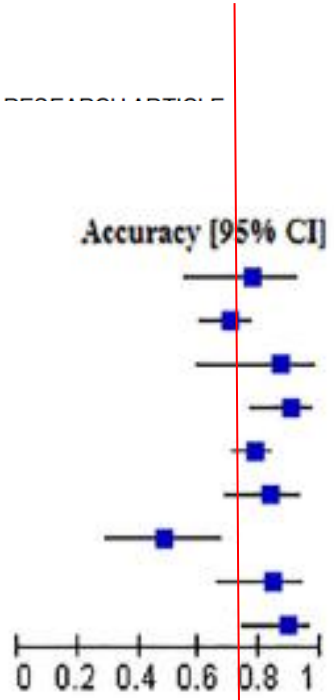
- N stage is defined by the number rather than the location of nodes **T**
- EUS is superior to CT scan for N staging **F**
- EUS is least accurate for T-stage in T2 lesions **T**
- The specificity of CT for N staging is superior EUS **T**
- A barium swallow should be performed to exclude TOF/axis deviation or angulation **F**

PLOS ONE

EUS for T staging

Study	TP	FP	FN	TN	Accuracy [95% CI]
Heintz	17	0	5	1	0.77 [0.55, 0.92]
Kienle	81	0	36	1	0.69 [0.60, 0.77]
Lee	13	0	2	1	0.87 [0.60, 0.98]
Massari	36	0	4	1	0.90 [0.76, 0.97]
Nishimaki	128	0	36	1	0.78 [0.71, 0.84]
Tio(Endo)	35	0	7	1	0.83 [0.69, 0.93]
Wakelin	14	0	15	1	0.48 [0.29, 0.67]
Wu	26	0	5	1	0.84 [0.66, 0.95]
Ziegler	33	0	4	1	0.89 [0.75, 0.97]

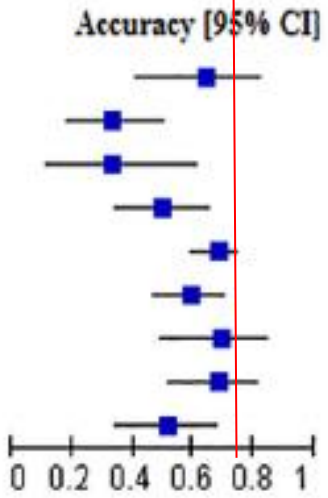
Pooled diagnostic accuracy: 0.77 [0.73,0.81]
P=0.001



CT for T staging

Study	TP	FP	FN	TN	Accuracy [95% CI]
Heintz	14	0	8	1	0.64 [0.41, 0.83]
Kienle	12	0	24	1	0.33 [0.19, 0.51]
Lee	5	0	10	1	0.33 [0.12, 0.62]
Massari	20	0	20	1	0.50 [0.34, 0.66]
Nishimaki	100	0	48	1	0.68 [0.59, 0.75]
Tio(Endo)	39	0	27	1	0.59 [0.46, 0.71]
Wakelin	20	0	9	1	0.69 [0.49, 0.85]
Wu	28	0	13	1	0.68 [0.52, 0.82]
Ziegler	19	0	18	1	0.51 [0.34, 0.68]

Pooled diagnostic accuracy: 0.59 [0.54,0.64]
P=0.003



sound for Preoperative mous Cell Carcinoma: a

4☯, Xiao-yan Gao[1,2,3,4☯], Xin-xin Huang[1,2,3,4], Hong-Yin Li[1,2,3,4], Shi-yong Lin[1,2,3,4], Guo-bao Wang[1,2,3,4], 3,4*, Jian-jun Li[1,2,3,4*]

n University Cancer Center, Guangzhou, China, 2 State Key uangzhou, China, 3 Guangdong Esophageal Cancer Institute, vation Center for Cancer Medicine, Guangzhou, China

Luo PLoS One 2016

Table 2. Diagnostic accuracy of EUS in T/N staging for ESCC.

	Staging	No.	Sensitivity(95%CI)	P value	Specificity(95%CI)	P value	DOR	P value	AUC (SE)	Q (SE)
Overall accuracy	T	42	79%* (77,80)	<0.001	-	-	-	-	-	-
	N	30	71%* (69,73)	<0.001	-	-	-	-	-	-
Staging	T1	24	77% (73,80)	<0.05	95% (94,96)	<0.001	66.43 (28.83,153.05)	<0.001	0.89 (0.03)	0.82 (0.03)
	T2	32	66% (61,70)	<0.001	88% (86,89)	<0.001	21.36 (12.20,37.40)	<0.001	0.83 (0.04)	0.76 (0.04)
	T3	26	87% (85,89)	<0.05	87% (84,89)	<0.001	42.42 (25.90,69.46)	<0.001	0.93 (0.01)	0.87 (0.01)
	T4	24	84% (79,89)	<0.05	96% (95,97)	<0.001	114.87 (60.86,217.46)	0.184	0.98 (0.01)	0.94 (0.01)
	N	34	81% (79,82)	<0.001	76% (73,78)	<0.001	9.82 (5.37,17.95)	<0.001	0.83 (0.03)	0.76 (0.02)
Sub-staging	T1a	12	84% (80,88)	<0.05	91% (88,94)	<0.001	39.74 (16.91,93.40)	<0.05	0.92 (0.02)	0.85 (0.03)
	T1b	12	83% (80,86)	<0.05	89% (86,92)	<0.001	26.97 (11.11,65.47)	<0.05	0.90 (0.02)	0.83 (0.02)

Luo PLoS One 2016

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

www.bjcancer.com

Staging investigations for oesophageal cancer: a meta-analysis

Table 4 Summary of the number of included studies, the total number of patients, pooled sensitivity, pooled specificity, and the pooled log odds ratio given per disease and investigation

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)

CI = confidence interval; EUS = endoscopic ultrasonography; CT = computed tomography; FDG = ^{18}F-fluoro-2-deoxy-D-glucose positron emission tomography.

Vliet BJC 2008

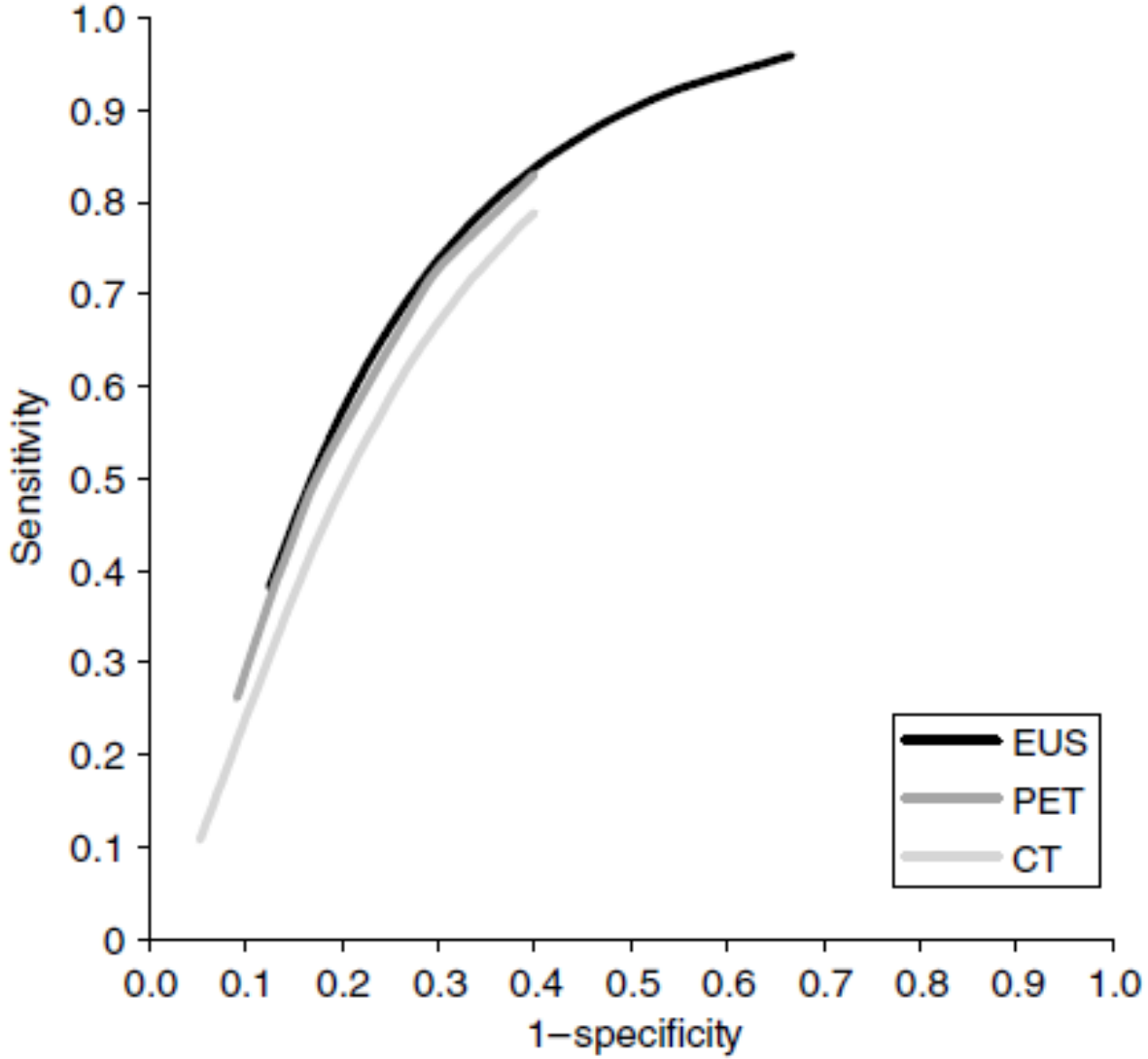
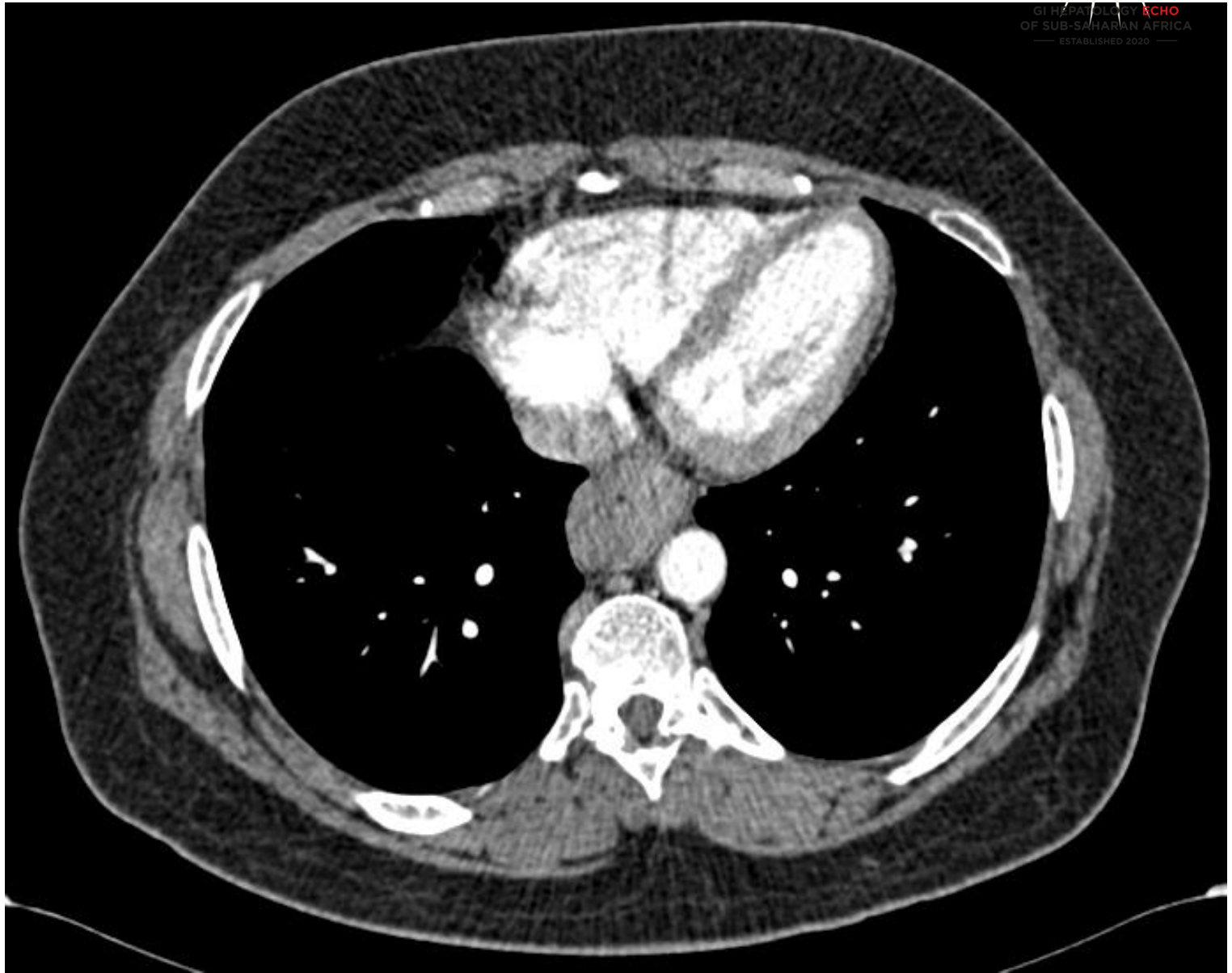


Figure 3 Summary receiver operating characteristic curves for EUS, FDG-PET, and CT for detection of regional lymph node metastases. *P* = not significant.

Clinical scenario

- 60 year old male
- Dysphagia/weight loss
- No co-morbidities
- ECOG 0
- Tumour 26-32cm
- SCC on histo
- T2/T3 N0 M0
- What next?
- Adequate staging?



Original article

Pragmatic staging of oesophageal cancer using decision theory involving selective endoscopic ultrasonography, PET and laparoscopy

J. M. Findlay[1,2], K. M. Bradley[3], E. J. Maile[1], B. Braden[4], J. Maw[1], J. Phillips-Hughes[3], R. S. Gillies[1], N. D. Maynard[1] and M. R. Middleton[2,5]

Conclusion: Although EUS provided additional information on T and N category, its risk outweighed potential benefit in patients with T2–T4a disease on CT. Laparoscopy seemed justified for distal oesoph

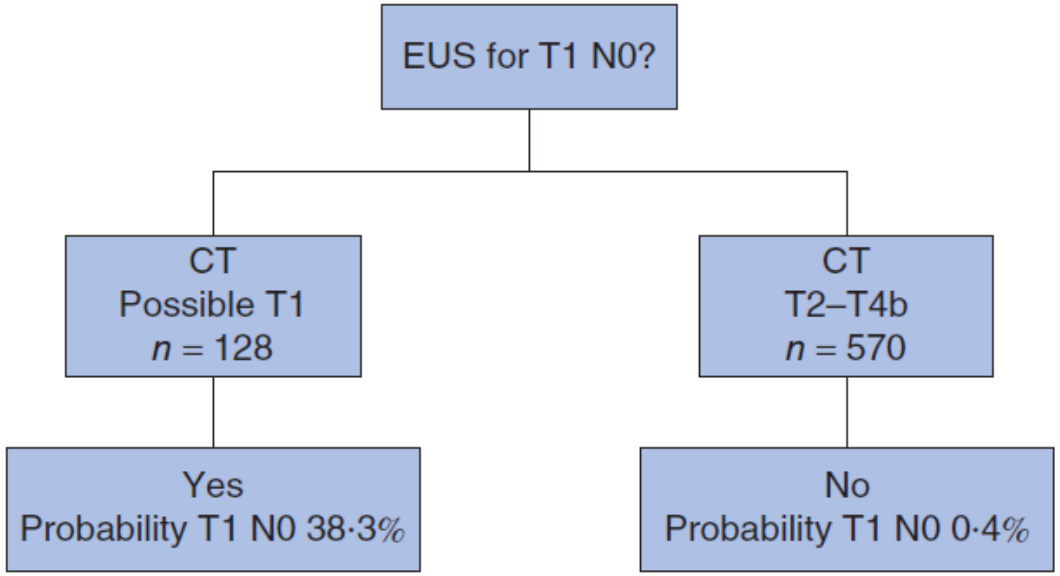


Fig. 1 CT-guided algorithm (and decision tree analysis 1) for performing endoscopic ultrasonography (EUS) for T1 N0 disease before PET–CT. Numbers relate to development set

Is there any point in performing an EUS for T2-T4 tumours on CT?

Findlay BJS 2015

Which investigation is most accurate for detection of distant mets?

- EUS
- CT
- PET
- MRI

Which investigation is most accurate for detection of distant mets?

- PET

M stage

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]

Disease	Investigation	Number of included studies	Total number of patients	Pooled sensitivity (95% CI)	Pooled specificity (95% CI)	Pooled log odds ratio (95% CI)
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)

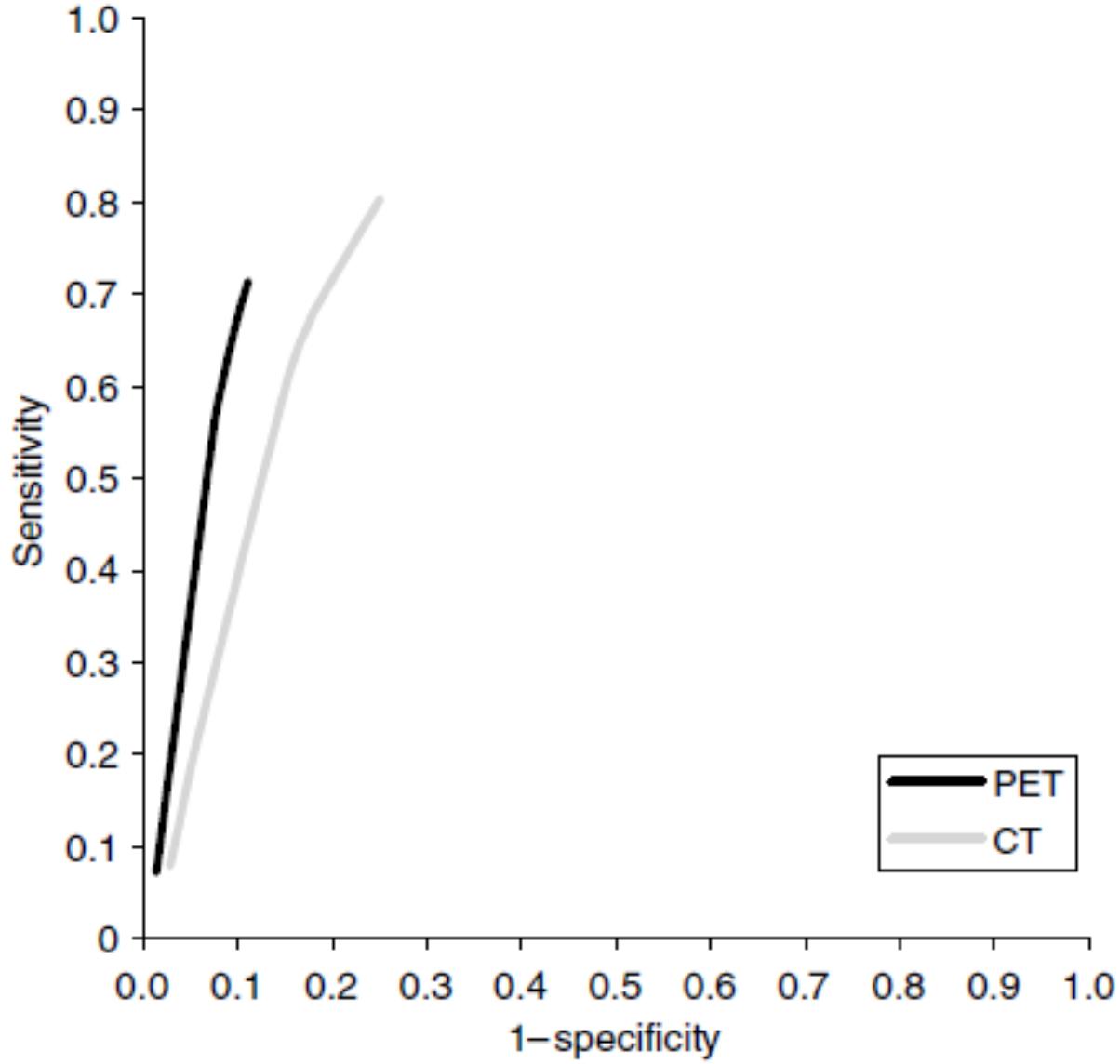
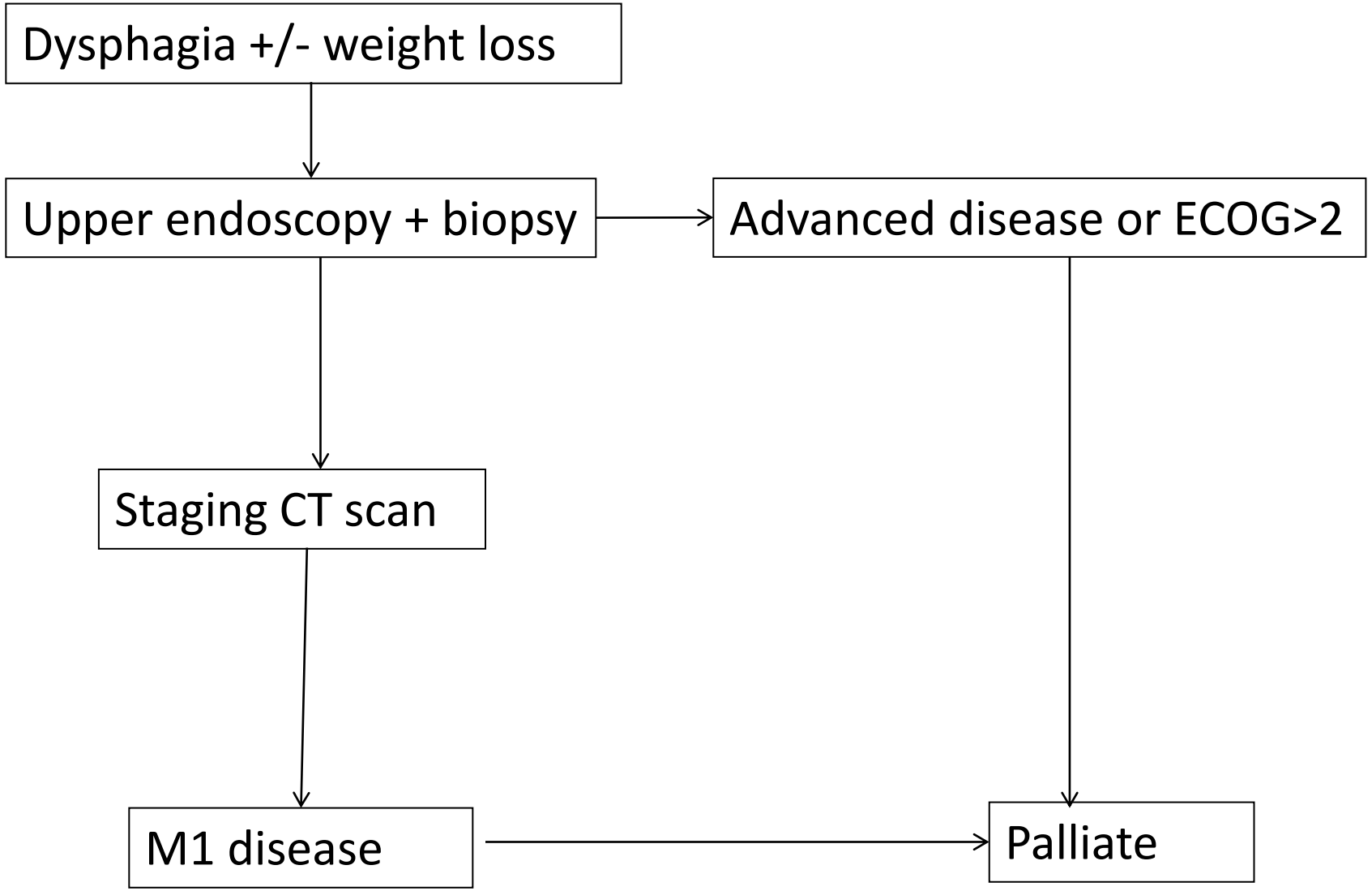
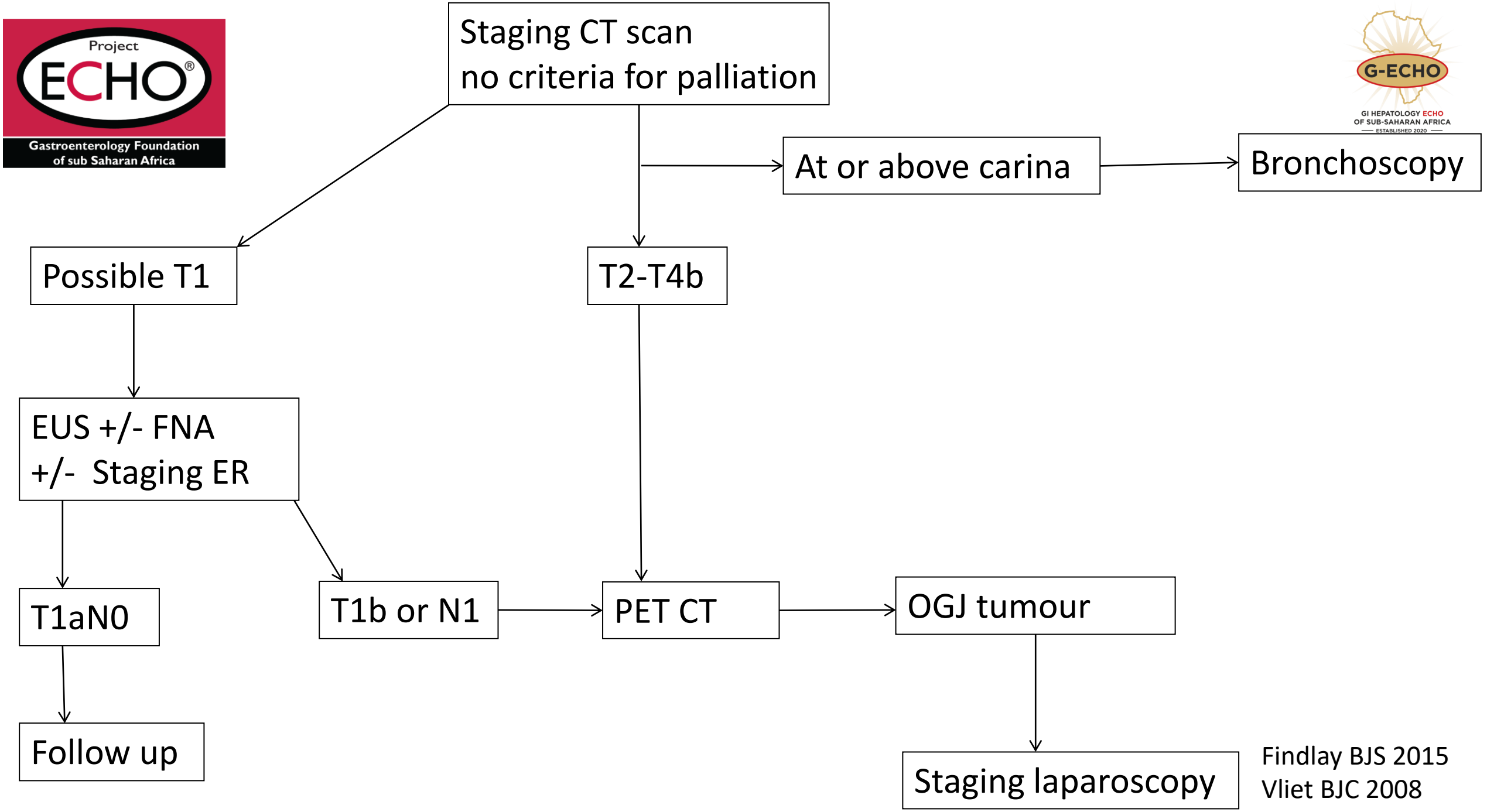


Figure 4 Summary receiver operating characteristic curves for FDG-PET and CT for detection of distant metastases. $P < 0.03$.

Staging algorithm





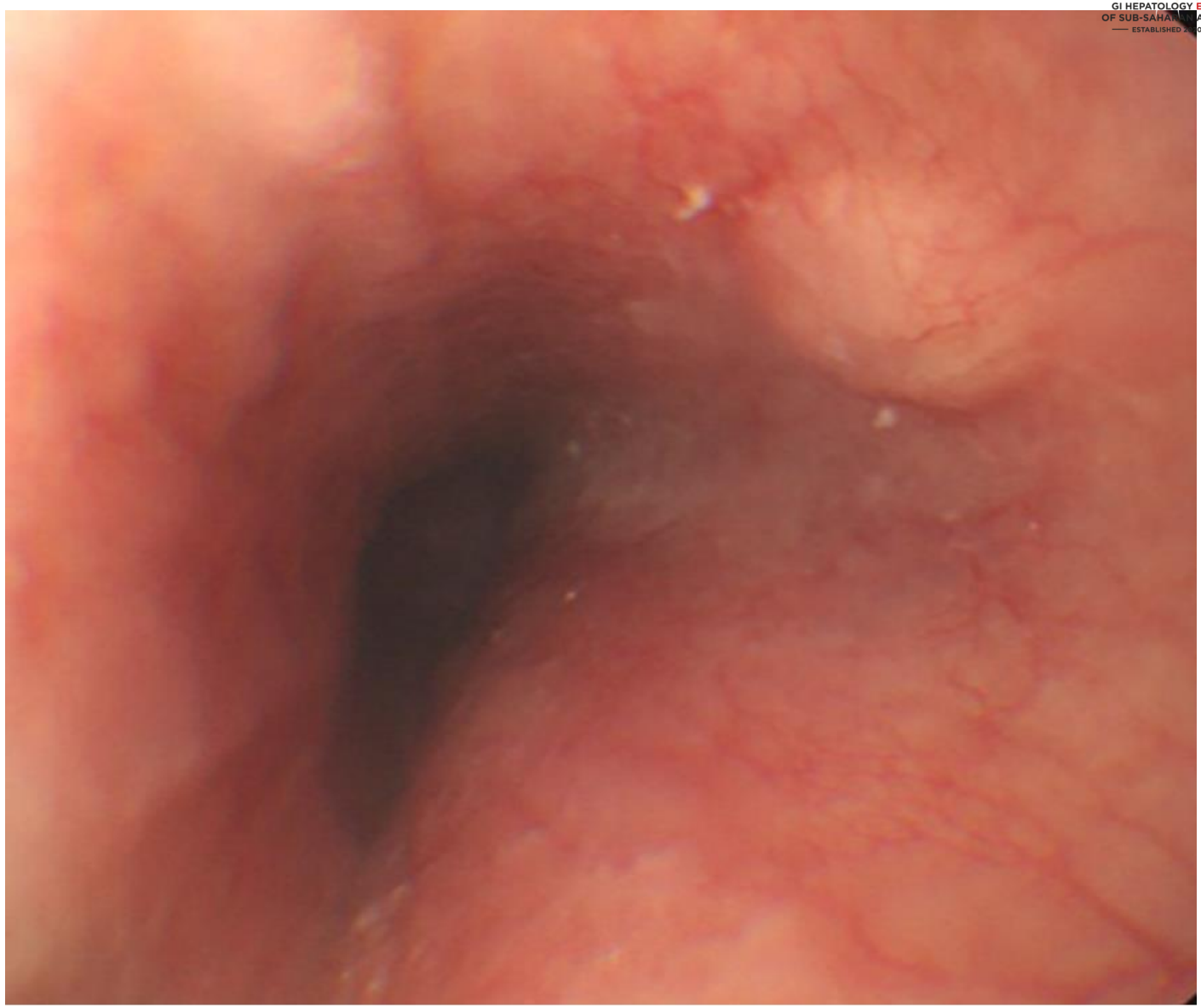
Findlay BJS 2015
Vliet BJC 2008

Management according to stage

- Early cancer
  - Mucosal and submucosal
- T2
  - Node negative
- Locally advanced
  - T2N1-3
  - T3
  - T4
- Metastatic
  - Distant mets

Early oesophageal cancer

- 70 yr old male
- Reflux symptoms
- ECOG 1
- Upper endoscopy
- Histo – ADC
- CT – no lesion
- EUS – T1a
- Management?



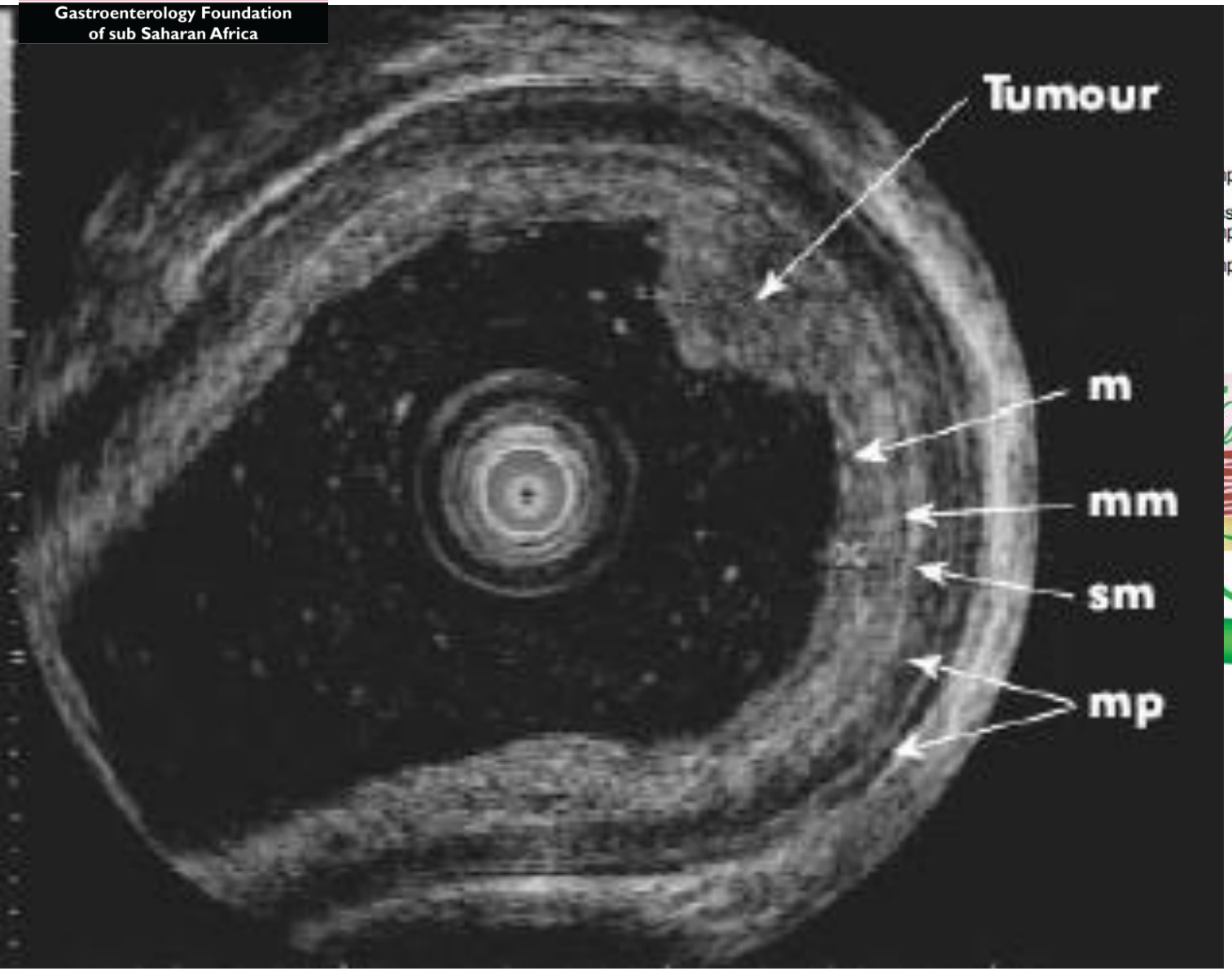
Management

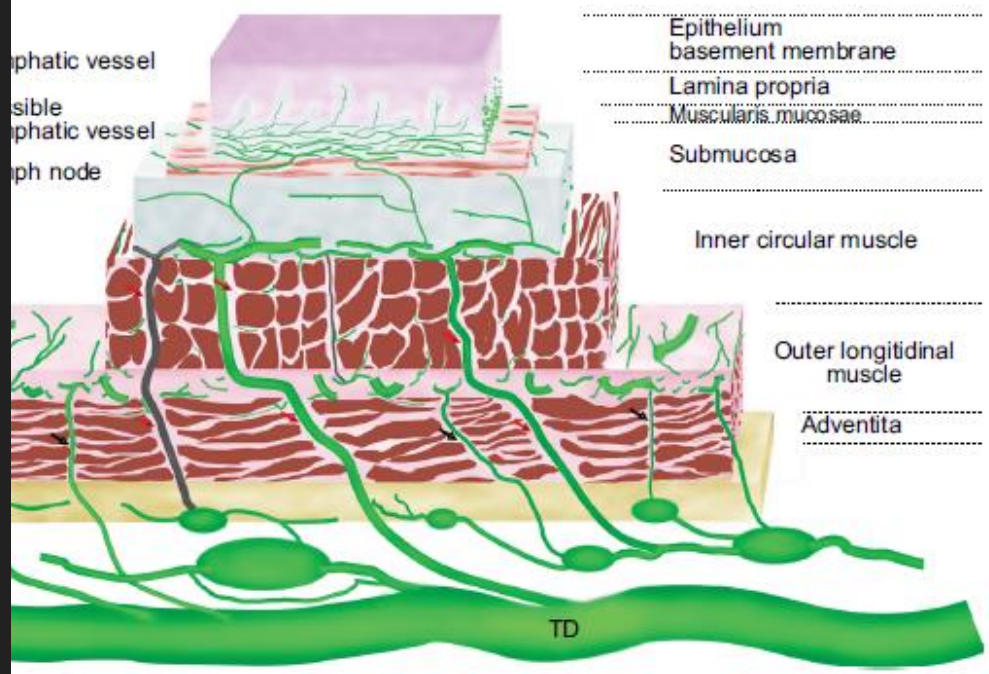
- Endoscopic resection
- Histo – T1b – completely excised
- Further management?

Early Ca oes - True or False

- Nodal spread is the strongest predictor of survival post oesophagectomy **T**
- Chances of Lymph spread is higher in SCC than ADC in T1b lesions **T**
- Endoscopic resection is associated with a higher recurrence compared to surgery in T1a lesions **T**
- EUS is mandatory in all patients considered for endoscopic resection **T**

Definition





Domper WJG 2015
Japanese Society for Esophageal Diseases

Gastroenterology 2020;158:760–769

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ESTABLISHED 2020

CLINICAL PRACTICE UPDATE

AGA Clinical Practice Update on Endoscopic Treatment of Barrett's Esophagus With Dysplasia and/or Early Cancer: Expert Review

Prateek Sharma,[1,2] Nicholas J. Shaheen,[3] David Katzka,[4] and Jacques J. G. H. M. Bergman[5]

BEST PRACTICE ADVICE

BET should be preferred over esophagectomy for BE patients with intramucosal EAC (T1a).

ORIGINAL ARTICLE: Clinical Endoscopy

Endotherapy versus surgery for early neoplasia in Barrett's esophagus: a meta-analysis (CME)

Jun Wu, MD,* Ya-min Pan, MD,* Tian-tian Wang, MD, Dao-jian Gao, MD, PhD, Bing Hu, MD, PhD

Shanghai, China

TABLE 2. Sensitivity analysis

Primary outcome	No. studies	No. patients	Rate (%) (endoscopy/surgery)	RR/RD (95% CI)	*P* value
High-quality studies (no. stars ≥ 5)					
Neoplasia remission	5	575	94.0/98.3	0.96 (0.91-1.01)	.10
Neoplasia recurrence	6	774	11.0/0.3	8.75 (2.75-27.84)	.0002
1 year survival rate	2	202	97.0/98.0	0.42 (0.08-2.33)	.32
3 year survival rate	2	215	95.7/92.9	1.69 (0.51-5.60)	.39
5 year survival rate	3	491	87.5/88.3	1.01 (0.56-1.84)	.97
Neoplasia-related death	6	774	0.2/0.3	0 (-0.02 to 0.01)*	.84
Major adverse events	6	774	14.3/28.3	0.39 (0.19-0.77)	.007
Procedure-related mortality	6	774	0.2/1.2	0.35 (0.10-1.24)	.10
Studies containing > 100 patients					
Neoplasia remission	3	393	96.8/99.3	0.98 (0.95-1.01)	.28
Neoplasia recurrence	4	592	12.5/0.5	9.85 (2.78-34.81)	.0004
1 year survival rate	1	114	98.7/100	0.65 (0.03-16.43)	.80
3 year survival rate	2	215	95.7/92.9	1.69 (0.51-5.60)	.39
5 year survival rate	3	491	87.5/88.3	1.01 (0.56-1.84)	.97
Neoplasia-related death	4	592	0.3/0.5	0 (-0.02 to 0.01)	.82
Major adverse events	4	592	12.7/25.1	0.28 (0.08-1.02)	.04
Procedure-related mortality	4	592	0/1.4	0.15 (0.02-0.96)	.05

RR, Relative risk; *RD*, risk difference; *CI*, confidence interval.
*Value is RD.

Wu Gastroint endoscopy 2014

Prognostic value of N-stage

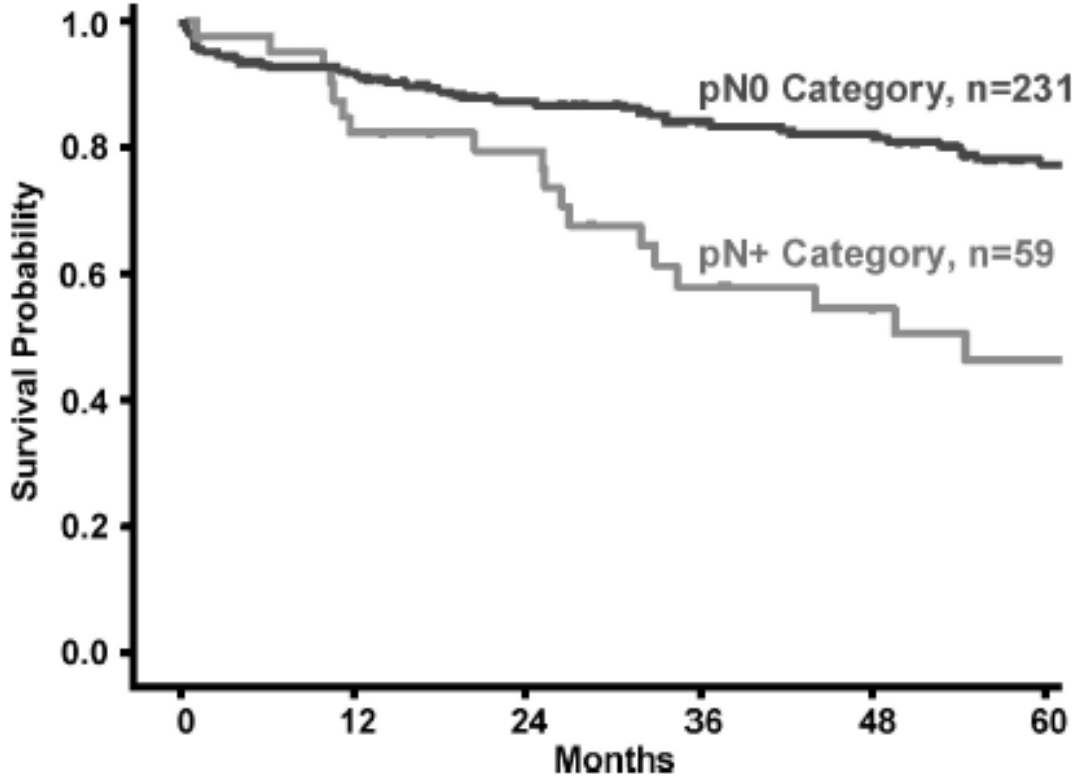


FIGURE 2. Overall survival rate of resected early esophageal cancer in relation to the presence of lymph node metastases (pN0 vs pN+) ($P < 0.01$).

Stein Ann Surg 2005

Mucosal vs. submucosal

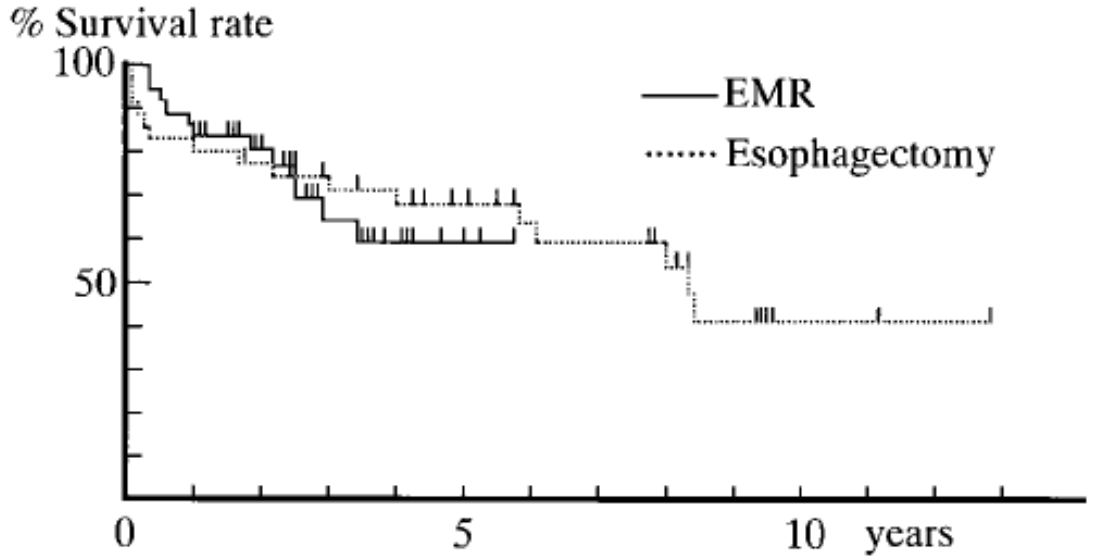


Fig. 3. Overall survival curves after endoscopic mucosal resection (EMR) and after esophagectomy for a mucosal esophageal cancer. There was no significant difference in the overall survival curves after EMR and after esophagectomy.

T1a

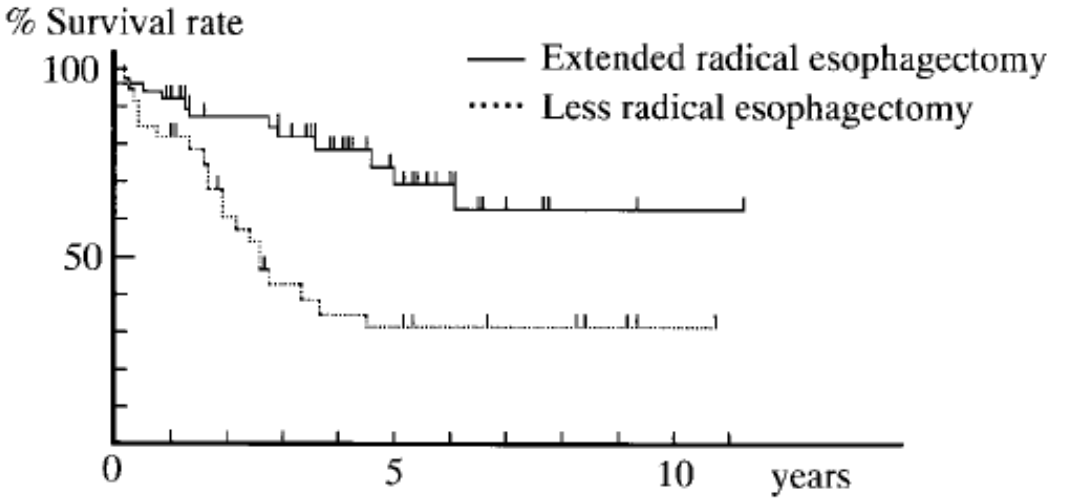
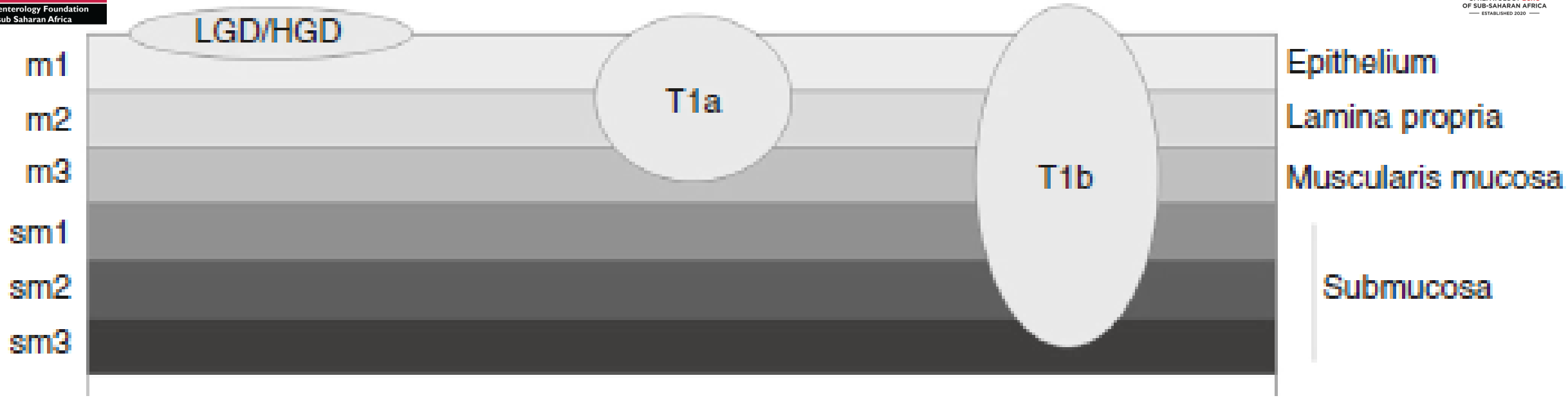


Fig. 4. Overall survival curves after extended radical esophagectomy and after less radical esophagectomy for submucosal esophageal cancer. The overall survival rate after extended radical esophagectomy was significantly better than that after less radical esophagectomy ($p = 0.001$, Cox-Mantel test).

T1b

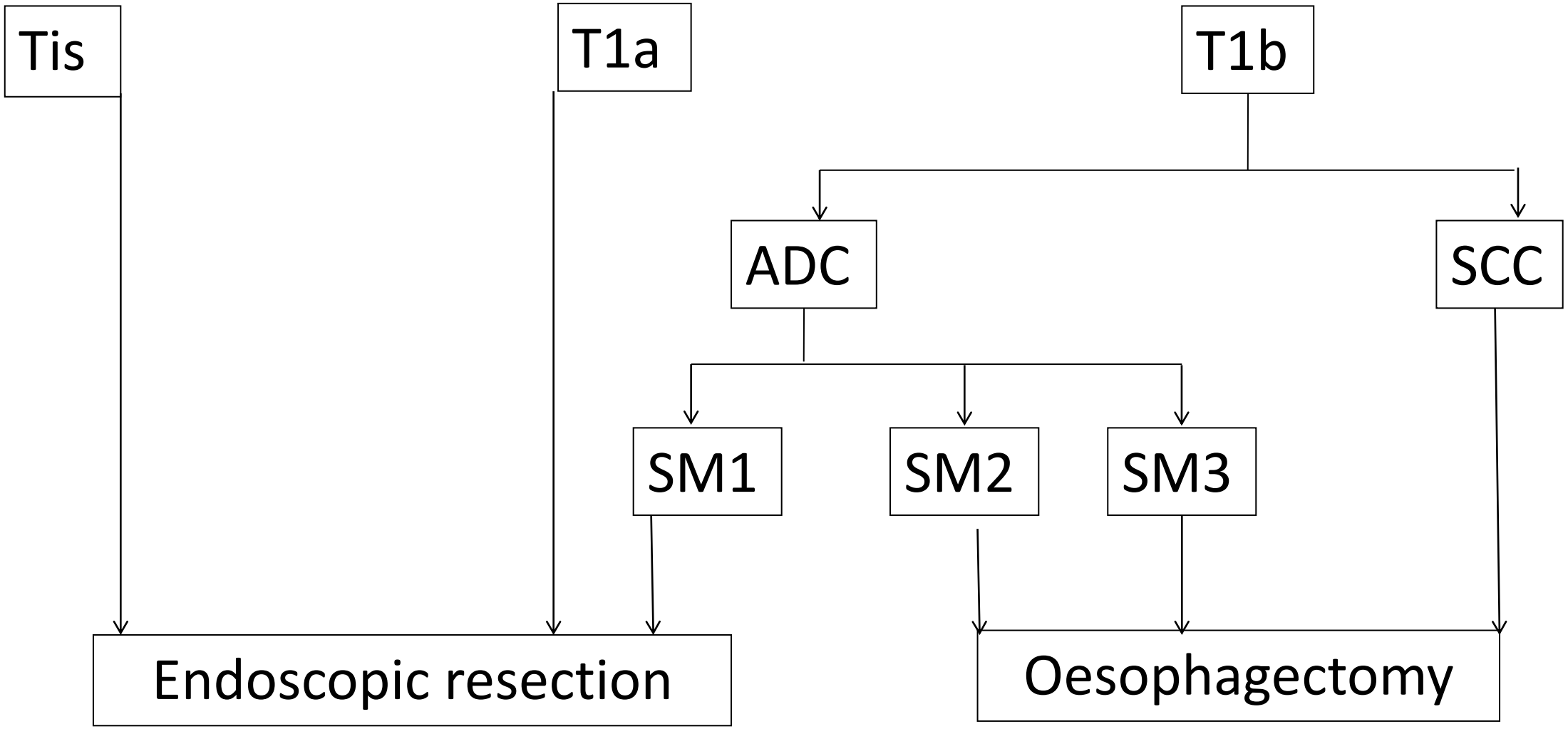
Fujita WJS 2001



sm1		sm2		sm3	
SCC	*ADC*	*SCC*	*ADC*	*SCC*	*ADC*
N+					
60/224 (27%)	4/65 (6%)	107/296 (36%)	10/44 (23%)	300/544 (55%)	33/57 (58%)

Gockel Expert Rev. Gastroenterol. Hepatol 2011

Early oesophageal cancer



Clinical scenario

- 60 year old male
- Dysphagia/weight loss
- No co-morbidities
- ECOG 0
- Tumour 26-32cm
- SCC on histo

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Gastroenterology Foundation of sub Saharan Africa

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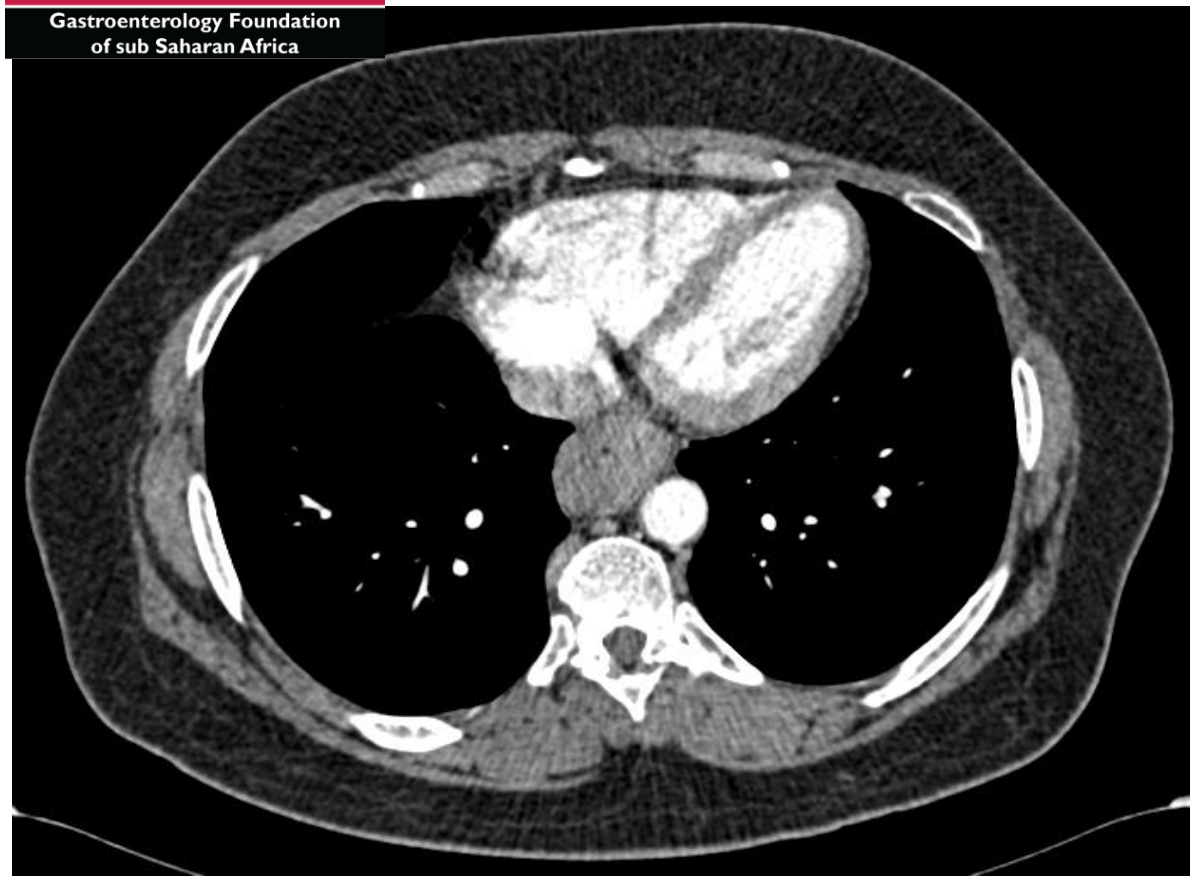
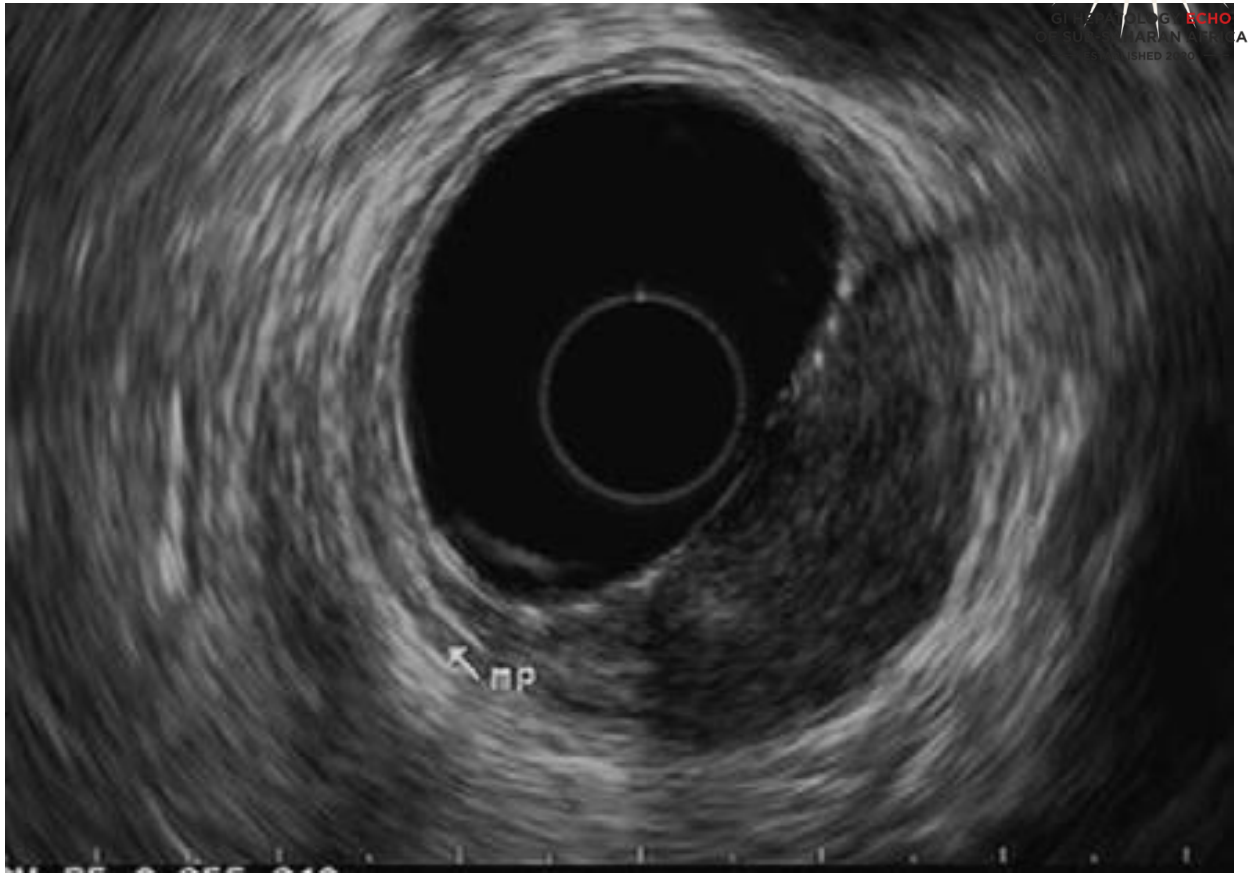




Clinical T2N0M0

1. What is the best management approach?
   a. Neoadjuvant therapy followed by surgery
   b. Surgery alone (adjuvant chemoradiotherapy if indicated on p-stage)
2. What are the chances of lymph node spread?
   a. 30-50%
3. What is the best surgical approach?
   a. Transthoracic 3 incision

Difficulties with T2 cancers

- Invasion of muscularis propria
- Small subset of patients only
- Staging modalities are less accurate
- Rate of nodal positivity is 30-50%
- Positive predictive value of clinical staging is low

Sancheti Surg Clin N Am 2012

Clinical T2-T3N0M0 Esophageal Cancer: The Risk of Node Positive Disease

- Brendon M. Stiles, MD, Farooq Mirza, MD, Anthony Coppolinc
  Jeffrey L. Port, MD, Paul C. Lee, MD, Subroto Paul, MD, and Na

ork Presbyterian

Table 3. Comparison of TNM Classification Shifts in Patients Undergoing Surgery Alone

cT2N0 (n = 40)	N0 (n = 18, 45%)	pT1N0	9 (22.5%)
		pT2N0	5 (12.5%)
		pT3N0	4 (10%)
	N+ (n = 22, 55%)	pT1N1-3	3 (7.5%)
		pT2N1-3	7 (17.5%)
		pT3N1-3	12 (30%)
cT3N0 (n = 23)	N0 (n = 5, 22%)	pT1N0	0 (0%)
		pT2N0	3 (13%)
		pT3N0	2 (8.7%)
	N+ (n = 18, 78%)	pT1N1-3	1 (4.3%)
		pT2N1-3	2 (8.7%)
		pT3-4N1-3	15 (65%)

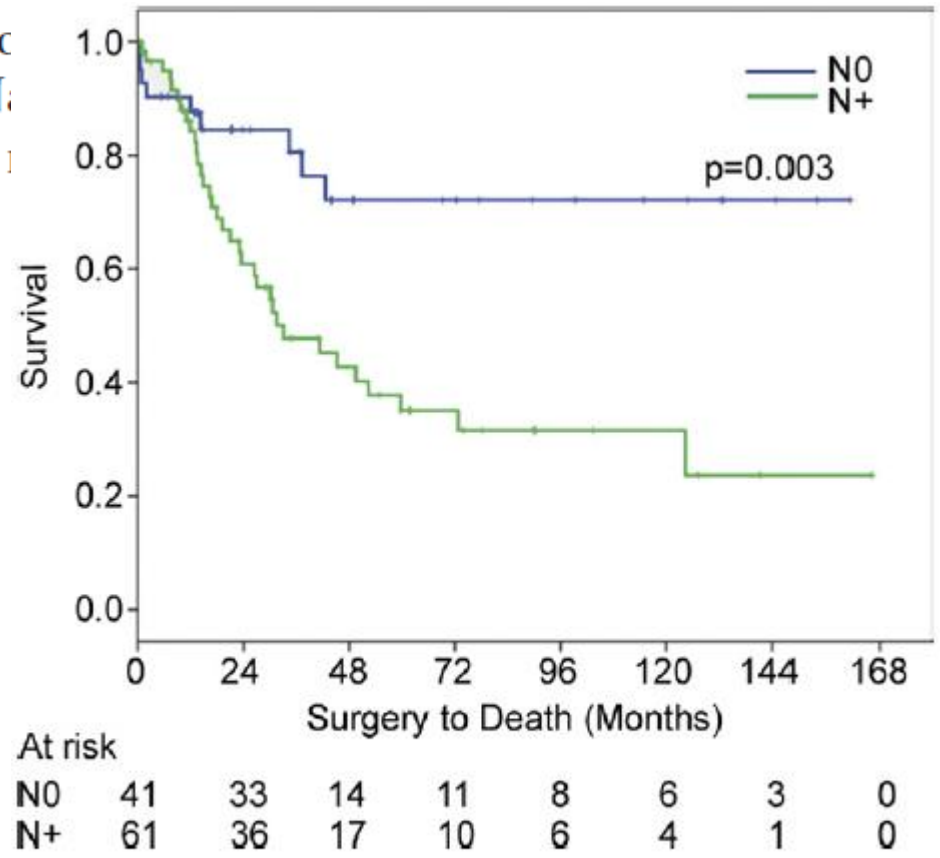
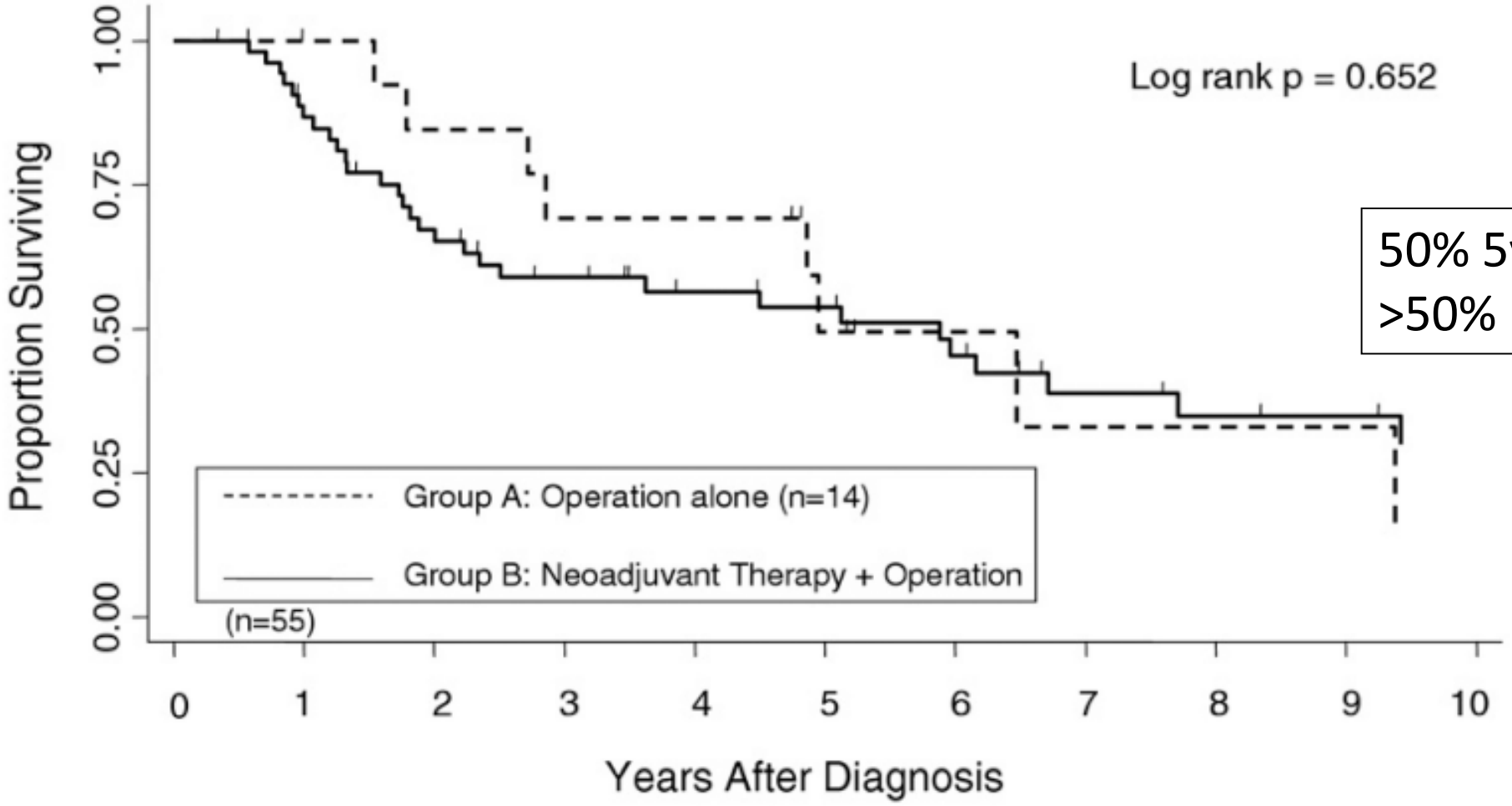


Fig 3. Overall survival of pN+ patients (green line) versus pN0 patients (blue line): 5-year estimates, 35.0% versus 72.1% (p = 0.003).

Stiles Ann Thorac Surg 2011

Overall survival – T2N0



50% 5yr OS
>50% understaged

Zhang *Ann Thorac Surg 2012*

Treatment options - T2N0

Neoadjuvant + surgery

- Growing practice
- Not fully supported in literature
- 58% 5 year DFS

Surgery +/- adjuvant

- Common practice in upstaged patients
- Improved survival of 43% vs. 10% in surgery alone

Original Article

Combined Modality Therapy of cT2N0M0 Esophageal Cancer

The University of Texas M. D. Anderson Cancer Center Experience

Kounturakis Cancer 2011

T2N0M0 esophageal cancer

Thomas W. Rice, MD,[a,b] David P. Mason, MD,[a,b] Sudish C. Murthy, MD, PhD,[a,b] Gregory Zuccaro Jr, MD,[a,c] David J. Adelstein, MD,[a,d] Lisa A. Rybicki, MS,[e] and Eugene H. Blackstone, MD[a,e]

Rice J of Thor and cardivasc surg 2007

Surgical principles

Surgical principles

- What margins should be aimed for?
- Extent of lymphadenectomy?
- Differences between trans-hiatal and trans-thoracic?
  - Survival
  - Complications
  - Anastomotic leak
  - Blood loss

Proximal Margin

Local Recurrences after Subtotal Esophagectomy for Squamous Cell Carcinoma

P. C. TAM, M.B.B.S. H. C. CHEUNG, F.R.C.S.E. L. MA, PH.D., F.R.C.P.A.
K. F. SIU, F.R.C.S.E. J. WONG, PH.D., F.R.A.C.S., F.A

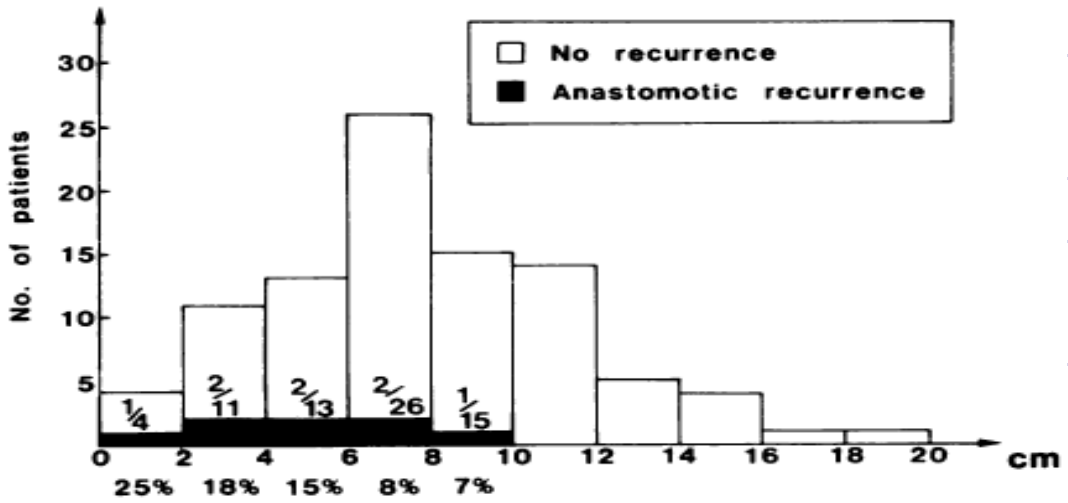


FIG. 2. Relation between length of proximal resection margin measured at operation and anastomotic recurrence.

Table 1. Ideal length of the proximal resection margin.

Study (year)	Suggested length (cm)
Barbour *et al.* (2007)	5
Marriette *et al.* (2003)	7
Miller *et al.* (1962)	12
Skinner *et al.* (1988)	10
Mean	8.5

Tam Annals surgery 1987
Migliore Future oncology 2014

Distal margin

Transhiatal Esophagectomy for Distal and Cardia Cancers: Implications of a Positive Gastric Margin

Paul D. DiMusto, MD, and Mark B. Orringer, MD

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Background. A common operation for cancer of the esophagus and cardia consists of transhiatal esophagectomy, proximal gastrectomy, and a cervical esophagogastric anastomosis. The oncologic adequacy of dividing the stomach 4 to 6 cm distal to palpable tumor is not well documented, and when a positive gastric margin is present on the final pathologic analysis, the appropriate management is not established. This study was undertaken to determine the incidence of a positive gastric margin in these patients and the impact of adjuvant treatment.

Methods. A retrospective review was performed of 1044 patients undergoing transhiatal esophagectomy for adenocarcinoma of the distal esophagus or cardia. Twenty (1.9%) had a positive gastric margin on final the pathologic evaluation and met inclusion criteria for this study.

Results. Nine patients (45%) received adjuvant therapy consisting of radiation in 3, chemotherapy in 4, or both in 2. Their average postoperative survival was 477 days, compared with 455 days in those not receiving adjuvant therapy ($p = 0.898$). Local tumor recurrence developed in 1 patient (11%) in the treatment group and in 3 (27%) in the no treatment group ($p = 0.386$).

Conclusions. A transhiatal esophagectomy and proximal gastrectomy for carcinoma of the distal esophagus and cardia, dividing the stomach 4 to 6 cm from palpable tumor, provides a negative gastric margin in 98% of patients. In the few patients who have a positive gastric margin, 88% die with distant metastases, which would not be influenced by more extensive gastric resection, and in about 20%, local tumor recurrence develops in the intrathoracic stomach, seldom causing dysphagia. Adjuvant therapy for a positive gastric margin neither improves survival nor reduces local tumor recurrence.

(Ann Thorac Surg 2007;83:1993–9)

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DOI: 10.3748/wjg.v20.i47.18022

Three-field *vs* two-field esophageal cancer: A r

Guo-Wei Ma, Dong-Rong Situ, Qi-Long Ma

Study or subgroup	3FL Events	3FL Total	2FL Events	2FL Total	Weight	Risk ratio M-H, random, 95%CI
Kato H 1991	37	77	25	73	7.3%	1.40 [0.95, 2.08]
Isono K 1991	597	1740	713	2671	14.4%	1.29 [1.17, 1.41]
Fujita H 1992	9	27	23	100	3.9%	1.45 [0.76, 2.76]
Akiyama H 1994	178	324	151	393	12.9%	1.43 [1.22, 1.68]
Kato H 1995	59	100	96	410	10.9%	2.52 [1.98, 3.20]
Kakegawa T 1995	75	124	54	107	11.0%	1.20 [0.95, 1.52]
Fujita H 1995	25	63	23	65	6.4%	1.12 [0.72, 1.76]
Kato H 1996	18	50	22	100	0.0%	1.64 [0.97, 2.76]
Nishihira T 1998	21	32	14	30	6.2%	1.41 [0.89, 2.22]
Kawahara K 1998	9	44	6	44	2.1%	1.50 [0.58, 3.85]
Tabira Y(2) 1999	8	40	11	46	0.0%	0.84 [0.37, 1.87]
Tabira Y 1999	29	66	26	86	6.8%	1.45 [0.95, 2.21]
Shiozaki H 2001	54	129	53	123	9.7%	0.97 [0.73, 1.29]
Noguchi T 2004	39	68	48	78	0.0%	0.93 [0.71, 1.22]
Igaki H 2004	52	101	25	55	8.3%	1.13 [0.80, 1.60]
Nagatani S 2005	0	19	0	11		No estimable
Zhang GQ 2008	11	60	9	62	0.0%	1.26 [0.56, 2.83]
Shim YM 2010	12	57	12	34	0.0%	0.60 [0.30, 1.18]
Total (95%CI)		2827		4157	100.0%	1.37 [1.18, 1.59]
Total events	1145		1209			

Heterogeneity: $Tau^2 = 0.04$; $\chi^2 = 35.79$, df = 11 ($P = 0.0002$); $I^2 = 69\%$
Test for overall effect: $Z = 4.13$ ($P < 0.0001$)

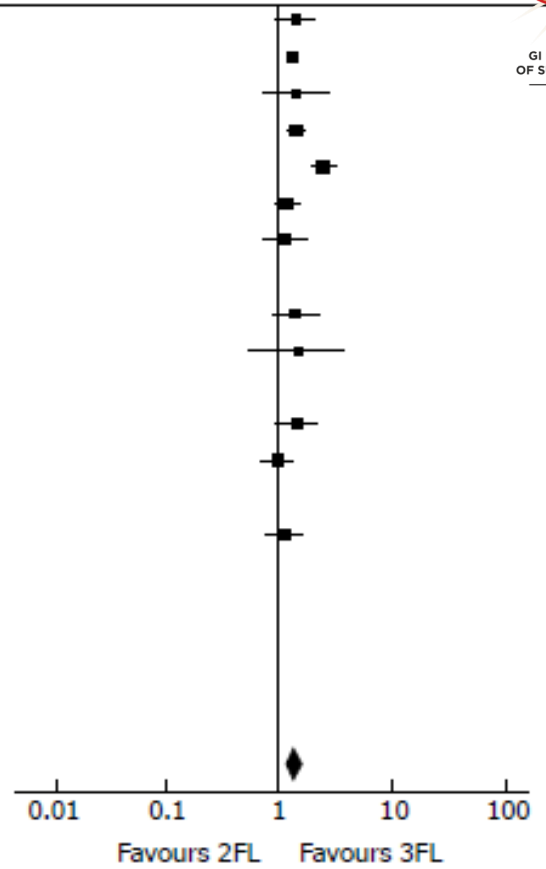

Figure 4 Forest plot of the 5-year overall survival rate. 3FL: 3-field lymphadenectomy; 2FL: 2-field lymphadenectomy.

Improved 5yr OS - but
- Significant heterogeneity
- Mostly observational
- Should be individualised

Ma, et al. World J Gastroenterol 2014

Complications

Table 2 Results of meta-analysis of studies for postoperative complications

Complications	Studies	Participants		Fixed-effects model		Random-effects model		Tests of homogeneity			
		3FL	2FL	RR	95%CI	RR	95%CI	Q	df	P	I^2 (%)
Recurrent nerve palsy	10	2320	3534	1.43	1.28 to 1.60	1.48	1.13-1.92	19.05	9	0.02	53
Anastomosis leak	10	608	926	1.26	1.05 to 1.52	1.32	0.97-1.81	14.53	9	0.09	38
Pulmonary complications	12	2370	3653	0.88	0.80 to 0.98	0.93	0.75-1.16	13.38	11	0.27	18
Chylothorax	6	458	699	0.77	0.32 to 1.85	0.87	0.33-2.26	3.05	5	0.69	0

Ma, et al. World J Gastroenterol 2014

Lymphadenectomy

- What extent of lymphadenectomy should be performed?
- 2 field vs. 3 field

- Individualise according to clinical stage and intra-op findings
- Standard 2 field adequate for most patients
- Survival difference may be due to stage migration

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DOI: 10.3748/wjg.v20.i29.10183

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META-ANALYSIS

Transthoracic *vs* transhiatal surgery for cancer of the esophagogastric junction: A meta-analysis

Ming-Tian Wei, Yuan-Chuan Zhang, Xiang-Bing Deng, Ting-Han Yang, Ya-Zhou He, Zi-Qiang Wang

Pulmonary complications

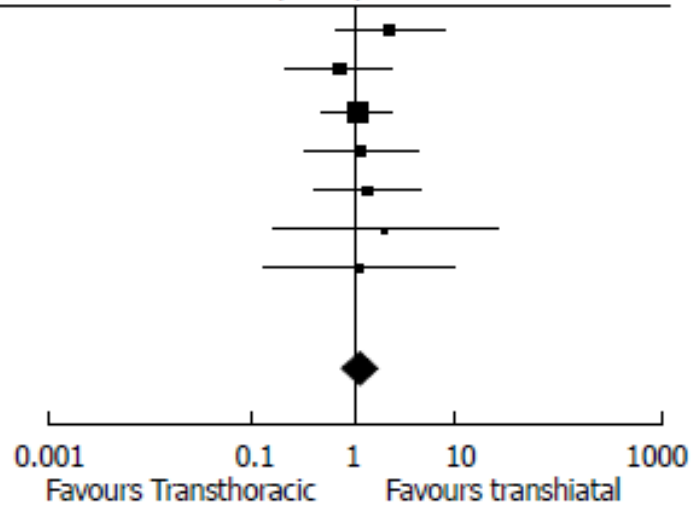
Wei, et al World J Gastroenterol 2014

A

Study or subgroup	Transthoracic Events	Transthoracic Total	Transhiatal Events	Transhiatal Total	Weight	Odds ratio M-H, fixed, 95%CI
Gianotti 2003	7	33	6	58	9.8%	2.33 (0.71, 7.65)
Graham 1998	4	32	19	119	20.1%	0.75 (0.24, 2.39)
Hulscher 2002	18	114	15	106	37.3%	1.14 (0.54, 2.39)
Nakamura 2008	5	71	5	84	12.1%	1.20 (0.33, 4.31)
Sasako 2006	7	85	5	82	13.3%	1.38 (0.42, 4.54)
Wayman 1999	2	20	1	20	2.6%	2.11 (0.18, 25.35)
Zheng 2010	7	284	1	47	4.8%	1.16 (0.14, 9.67)
Total (95%CI)		639		516	100.0%	1.24 (0.80, 1.94)
Total events	50		52			

Heterogeneity: $\chi^2 = 2.07$, df = 6 ($P = 0.91$); $I^2 = 0\%$

Test for overall effect: $Z = 0.96$ ($P = 0.34$)



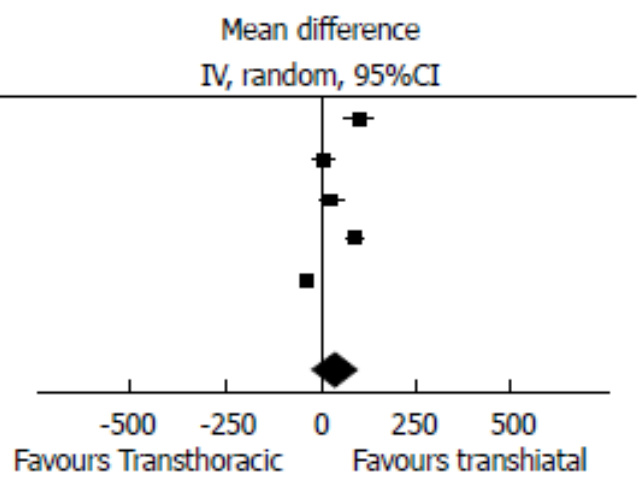
Anastomotic leak

A

Study or subgroup	Transthoracic Mean	Transthoracic SD	Transthoracic Total	Transhiatal Mean	Transhiatal SD	Transhiatal Total	Weight	Mean difference IV, random, 95%CI
Gianotti 2003	312.0	97.00	33	209.0	52.00	58	19.4%	103.00 (67.30, 138.70)
Graham 1998	343.2	68.40	32	331.2	73.80	119	19.9%	12.00 (-15.16, 39.16)
Sasako 2006	338.0	93.67	85	305.0	86.67	82	19.9%	33.00 (5.64, 60.36)
Wayman 1999	280.0	26.25	20	190.0	37.50	20	20.2%	90.00 (69.94, 110.06)
Zheng 2010	158.2	3.60	284	194.8	15.90	47	20.6%	-36.60 (-41.16, -32.04)
B Total (95%CI)			454			326	100.0%	39.58 (-24.55, 103.71)

Heterogeneity: $Tau^2 = 5189.11$; $\chi^2 = 224.69$, df = 4 ($P < 0.00001$); $I^2 = 98\%$

Test for overall effect: $Z = 1.21$ ($P = 0.23$)



Blood loss

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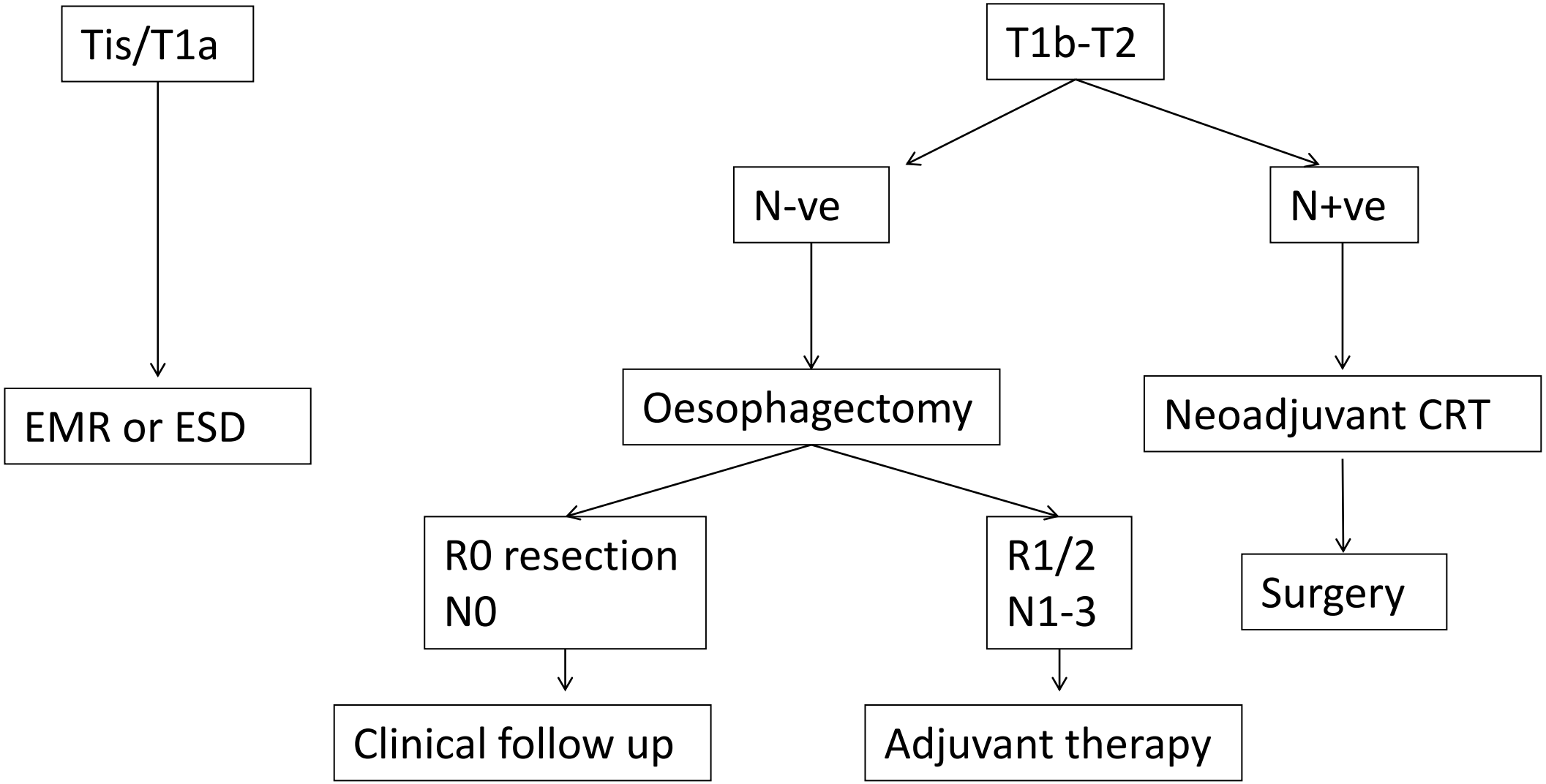
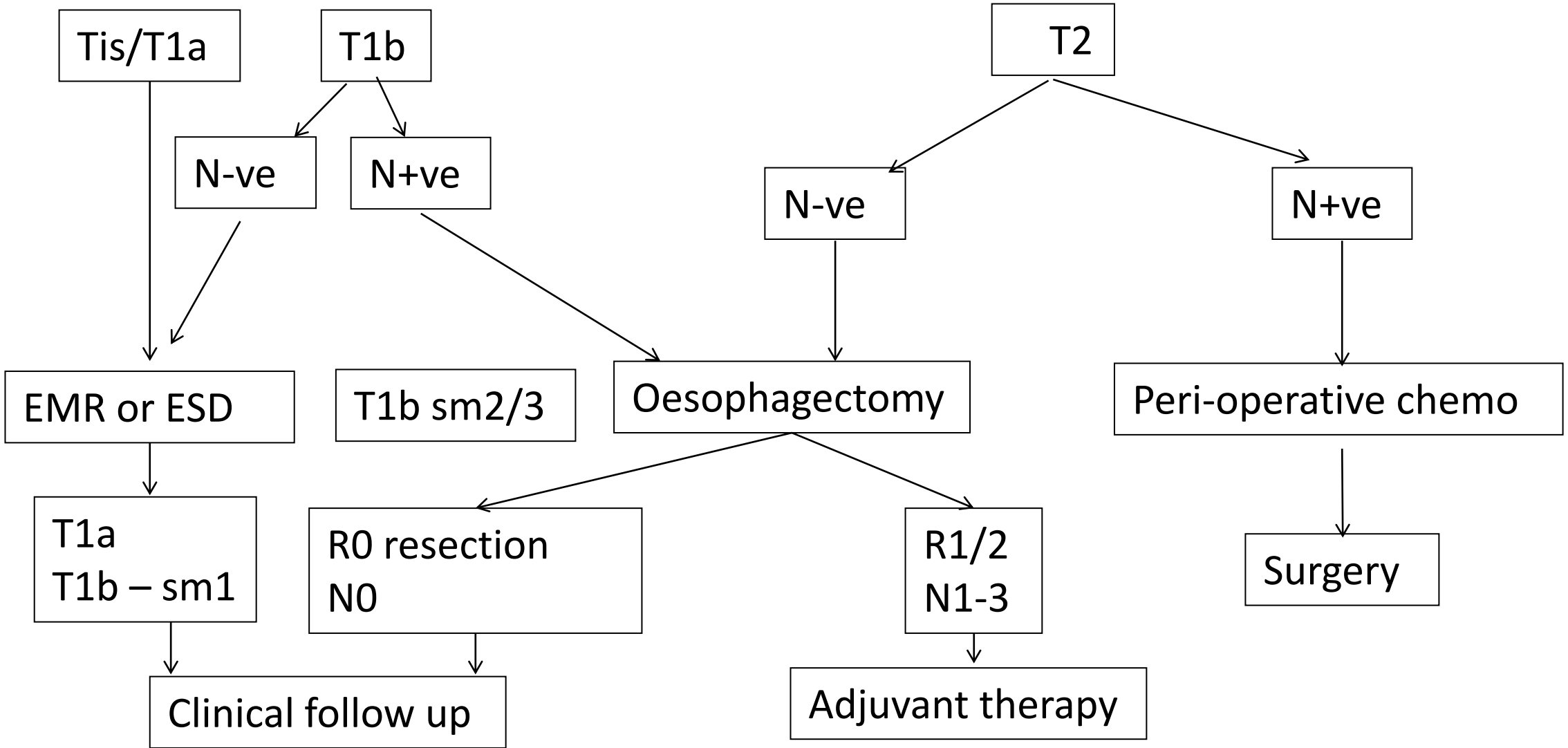
Management algorithm - OSCC



Management algorithm - OADC



- Thanks to ECHO UNM and the ECHO India Team for the support
- Feedback form available in the chat
- Recordings will be available on the GF website
- Thanks to Gastro Foundation
- Next week: 4 April 2022
  - Topic: Classification, pathology & diagnosis of pancreatic cancer
  - Presenter: Colin Noel