

Japanese eCura system

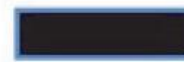
삼성서울병원 소화기내과 이준행

Pre-ESD indications

Depth of invasion	Ulceration	Differentiated type		Undifferentiated type	
		≤ 2 cm	> 2 cm	≤ 2 cm	> 2 cm
cT1a (M)	UL0	★			
	UL1				
cT1b (SM)					



Absolute indications for EMR/ESD



Absolute indications for ESD

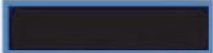


Relative indications


Figure 1 Classification of indications according to tumor-related factors. cT1a (M), intramucosal cancer (preoperative diagnosis), cT1b (SM), submucosally invasive cancer (preoperative diagnosis). UL, finding of ulceration (or ulcer scar); UL0, absence of ulceration or ulcer scar; UL1, presence of ulceration or ulcer scar.

Post-ESD curability criteria


Depth of invasion	Ulceration	Differentiated-type		Undifferentiated-type	
		≤ 3 cm	> 3 cm	≤ 2 cm	> 2 cm
pT1a (M)	UL0	[Black bar]		[Black bar]	
	UL1	≤ 3 cm	> 3 cm		
pT1b1 (SM1)		≤ 3 cm	> 3 cm		
pT1b2 (SM2)					



eCureA*



eCureB*



eCureC-2

Figure 2 Evaluation of curability according to tumor-related factors. *, Confined to *en bloc* resection and HM0, VM0, Ly0, and V0. pT1a (M), intramucosal cancer (histopathological diagnosis); pT1b (SM), submucosally invasive cancer (histopathological diagnosis). UL, finding of ulceration (or ulcer scar); UL0, absence of ulceration or ulcer scar; UL1, presence of ulceration or ulcer scar.

Curative resection

Expanded curative resection

eCuraC-1 vs eCuraC-2

Endoscopic curability C

This level of curability corresponds to the concept of non-curative resection described in the Guidelines for ESD and EMR for EGC (first edition).¹ When a lesion meets neither of the above-mentioned eCuraA and B conditions, it is considered eCuraC, which has a likelihood of remnant tumor. When eCuraC lesions are differentiated-type lesions and fulfill other criteria to be classified into either eCuraA or eCuraB but was either not resected *en bloc* or had positive HM, they are considered eCuraC-1. All other eCuraC lesions are considered eCuraC-2.

Management by eCura system

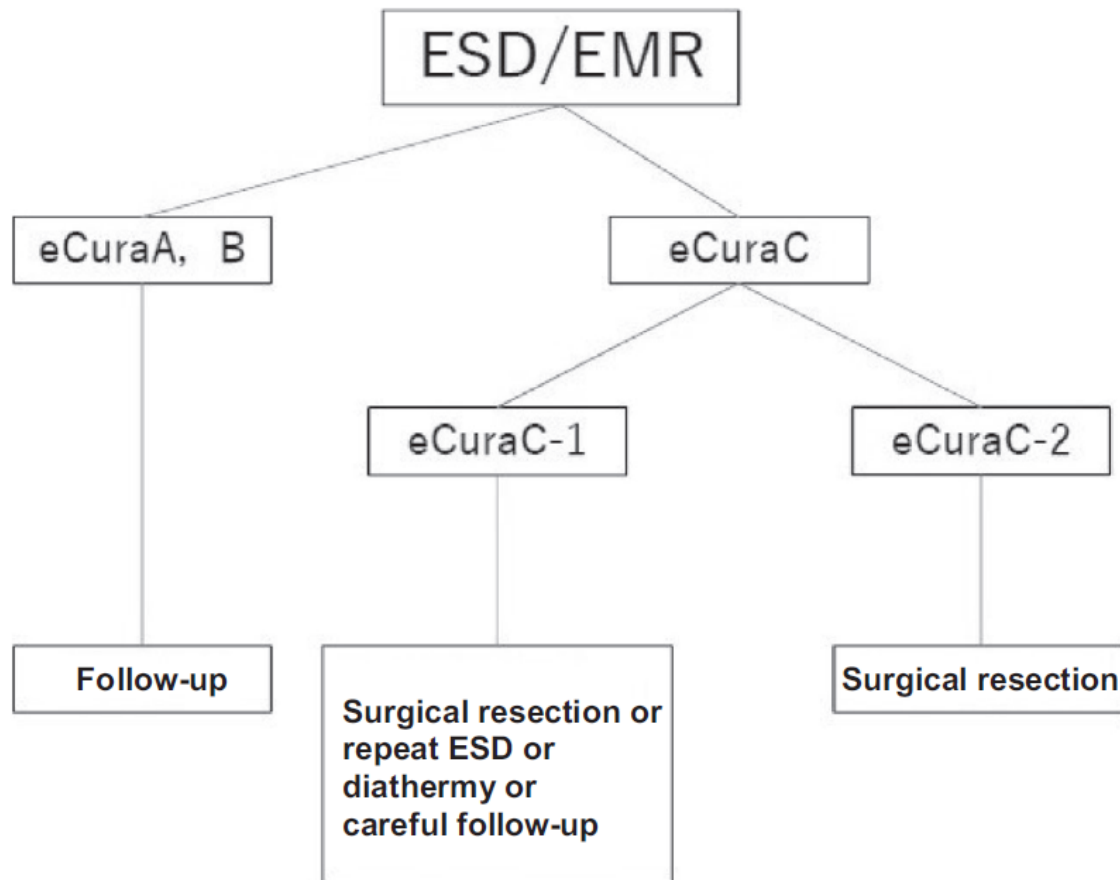


Figure 3 Therapeutic flowchart following endoscopic submucosal dissection (ESD) or endoscopic mucosal resection (EMR).

Japanese multicenter study

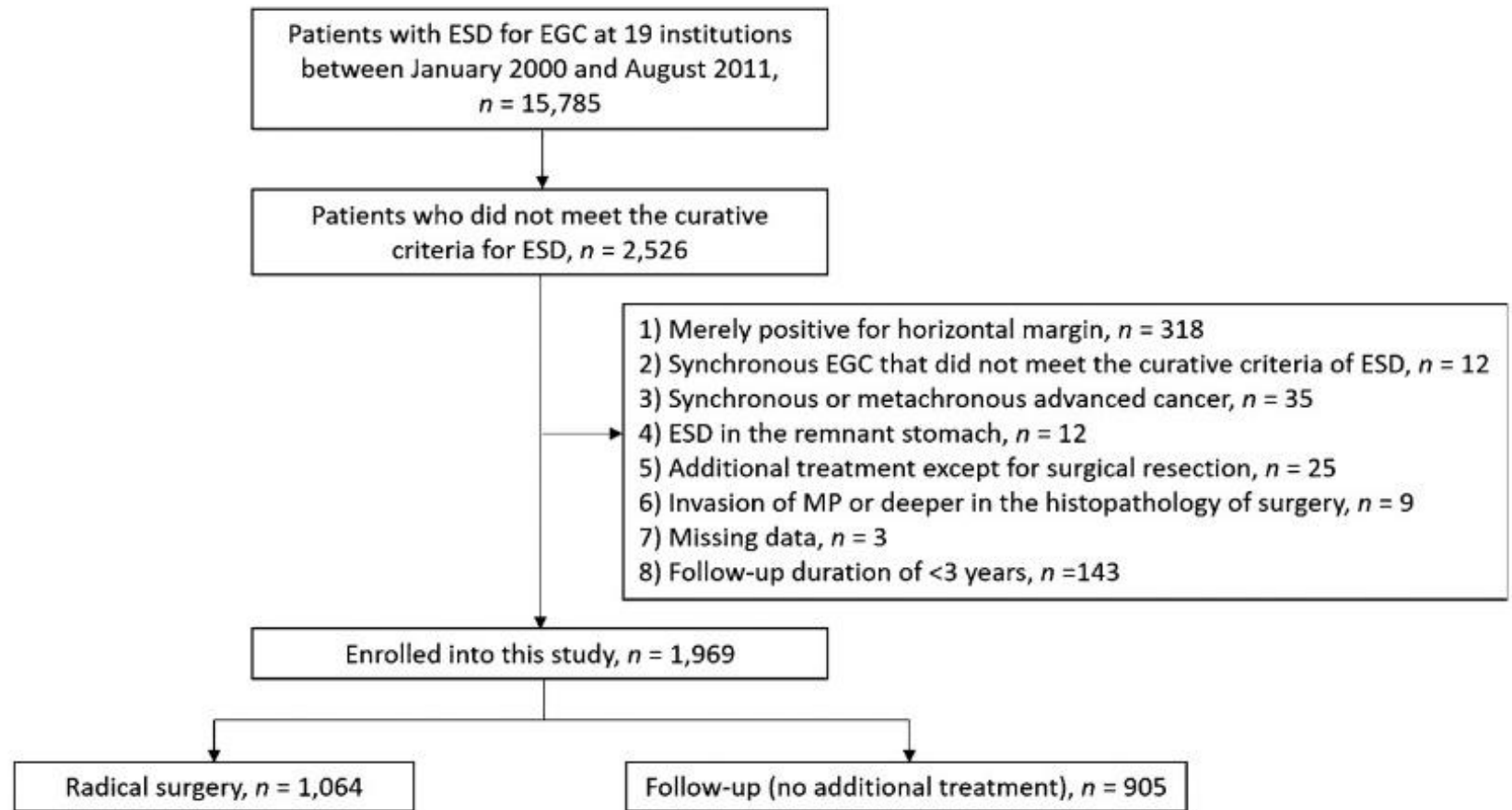
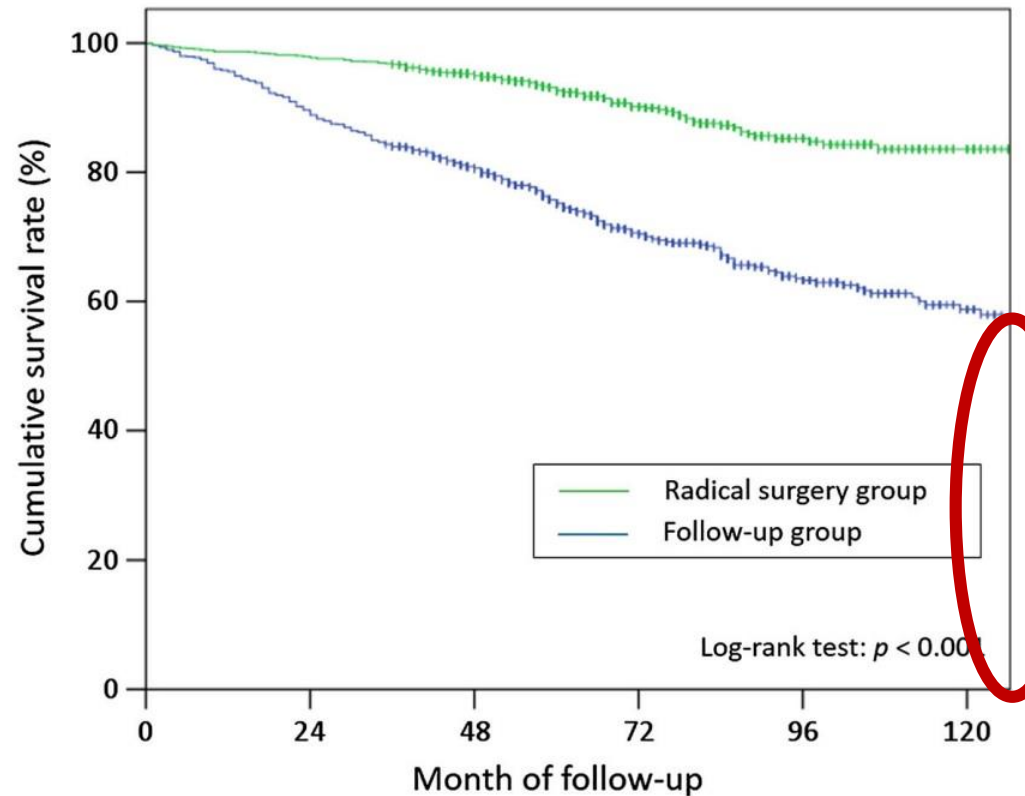


Fig. 1 Flowchart of patient enrollment. *ESD* endoscopic submucosal dissection, *EGC* early gastric cancer, *MP* muscularis propria

그러나 모두 사망하는 것은 아니다.

Fig. 2 OS rate for patients who did not meet the current curative criteria for ESD of EGC. The 3-year OS rate was 96.7 % in the radical surgery group and 84.0 % in the follow-up group, which was significantly different ($p < 0.001$). OS overall survival, ESD endoscopic submucosal dissection, EGC early gastric cancer



Number at risk

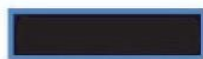
Radical surgery group	1,064	1,042	942	457	192	75
Follow-up group	905	811	675	372	198	80

어느 정도 예측할 수 있었던 바이다.

- LN metastasis in lesions without LV infiltration

Category		Rate of lymph node metastasis
1)	>3 cm in long diameter, differentiated type, pT1a, UL1	3.0% (95% CI: 1.2–6.2%)
2)	>3 cm, differentiated type, pT1b1 (SM1)	2.6% (95% CI: 0.3–9.0%)
3)	>2 cm, undifferentiated type, pT1a, UL0	2.8% (95% CI: 1.0–6.0%)
4)	≤2 cm, undifferentiated type, pT1a, UL1	2.9% (95% CI: 1.2–5.7%)
5)	>2 cm, undifferentiated type, pT1a, UL1	5.9% (95% CI: 4.3–7.9%)
6)	Undifferentiated type, pT1b1 (SM1)	10.6% (95% CI: 5.0–19.2%)

Depth of invasion	Ulceration	Differentiated-type		Undifferentiated-type	
		≤ 3 cm	> 3 cm	≤ 2 cm	> 2 cm
pT1a (M)	UL0	[eCureA*]		[eCureB*] 3)	
	UL1	[eCureA*] 1)		4)	5)
pT1b1 (SM1)		≤ 3 cm	> 3 cm		
		[eCureB*] 2)		6)	
pT1b2 (SM2)					



eCureA*



eCureB*



eCureC-2

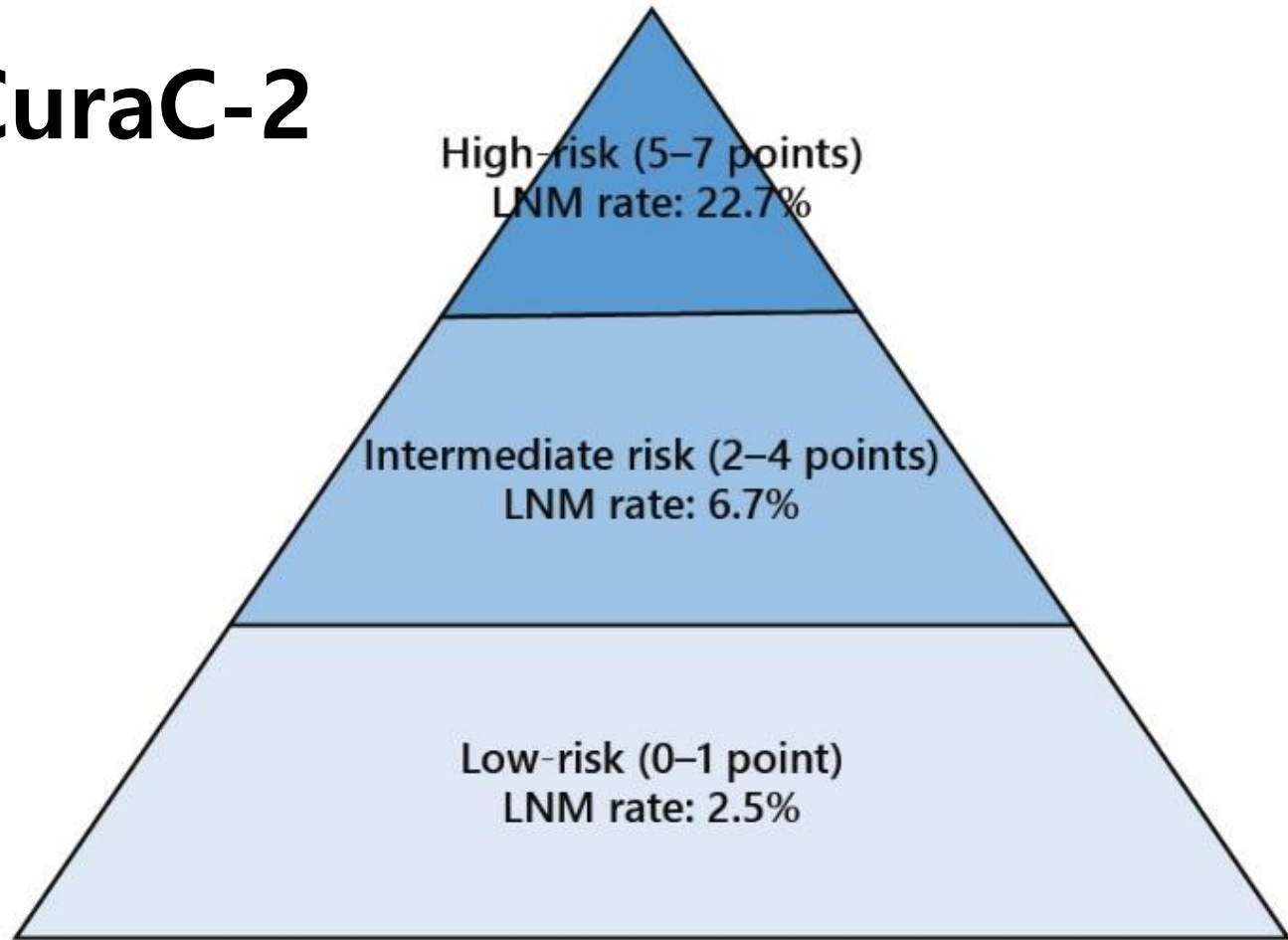
Table 2. Multivariate logistic regression analysis^a of risk factors for LNM in the development cohort and scoring system

	No. of patients	No. of LNMs	OR	95% CI	P value	β regression coefficient	Points ^b
<i>Tumor size</i>							
>30mm	479	53	2.03	1.28–3.14	0.003	0.70	1
≤30mm	622	41	1	Reference			
<i>Tumor depth</i>							
SM2	197	30	1.68	0.97–2.92	0.065	0.52	1
M/SM1	904	64	1	Reference			
<i>Histopathological type</i>							
Undifferentiated	701	73	1.22	0.62–2.41	0.56	0.20	—
Differentiated	400	21	1	Reference			
<i>Lymphatic invasion</i>							
Positive	443	69	3.99	2.43–6.55	<0.001	1.38	3
Negative	658	25	1	Reference			
<i>Venous invasion</i>							
Positive	249	35	1.65	1.01–2.70	0.046	0.50	1
Negative	852	59	1	Reference			
<i>Ulceration (scar)</i>							
Presence	285	21	0.98	0.57–1.69	0.95	−0.016	—
Absence	816	73	1	Reference			
<i>Vertical margin</i>							
Positive	198	30	1.81	1.10–3.00	0.020	0.60	1
Otherwise	903	64	1	Reference			

LN metastasis by the score

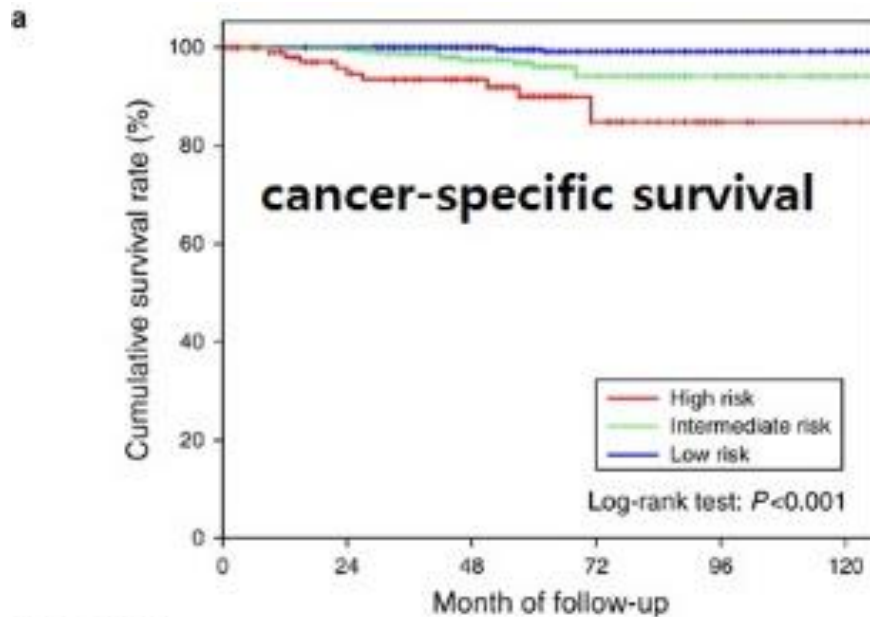
Total score	Rate of lymph node metastasis	No. of cases
0	1.6% (95% CI: 0.3–8.6%)	1/62
1	2.6% (95% CI: 1.4–4.9%)	9/341
2	4.9% (95% CI: 2.6–9.0%)	9/185
3	7.4% (95% CI: 4.2–12.8%)	11/148
4	8.3% (95% CI: 4.7–14.3%)	11/132
5	19.9% (95% CI: 14.1–27.2%)	28/141
6	27.3% (95% CI: 18.6–38.1%)	21/77
7	26.7% (95% CI: 10.9–52.0%)	4/15

For eCuraC-2



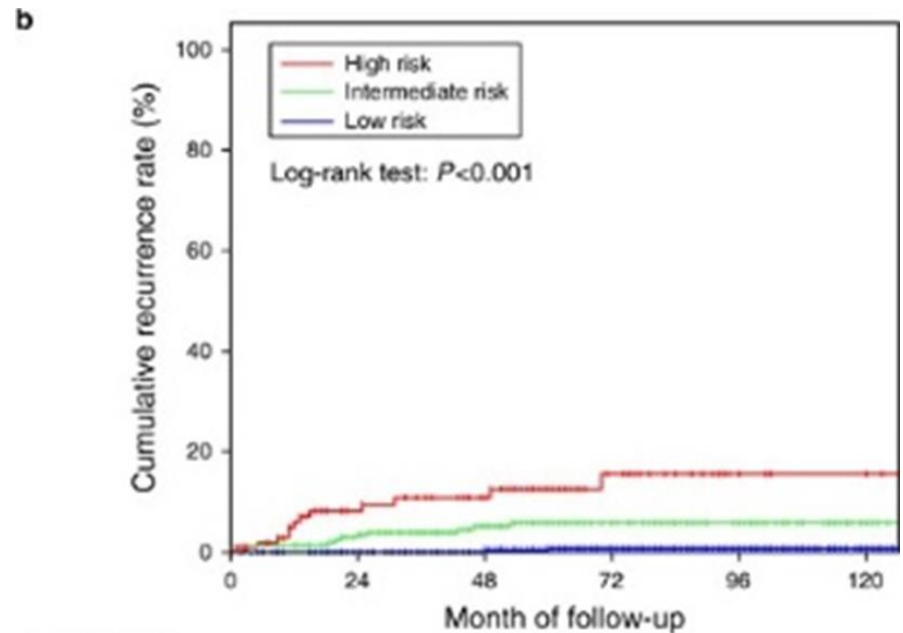
- 3 points: Lymphatic invasion
- 1 point: Tumor size >30 mm
Positive vertical margin pT1b-SM2
Vascular invasion
- 0 point: Undifferentiated-type
Ulceration (scar)

Survival and recurrence rate



Number at risk

Low risk	547	512	443	251	137	46
Intermediate risk	250	218	166	91	48	25
High risk	108	81	67	31	13	9



Number at risk

High risk	108	78	63	30	13	9
Intermediate risk	250	213	162	90	48	25
Low risk	547	512	443	251	137	46

미분화 혼재암은?

미분화 혼재 점막암

Endoscopic curability A: curative resection

Endoscopic resection is shown to be equal or superior to surgical resection in terms of long-term outcomes.^{10,11} When the lesion is resected *en bloc*, the following conditions: (i) predominantly differentiated type, pT1a, UL0, HM0 VM0, Ly0, V0, regardless of size; (ii) long diameter ≤ 2 cm, predominantly undifferentiated type, pT1a, UL0, HM0, VM0, Ly0, V0; or (iii) long diameter ≤ 3 cm, predominantly differentiated type, pT1a, UL1, HM0, VM0, Ly0, V0, are considered for endoscopic curability A (eCuraA).^{62,63} However, evidence is lacking for cases of differentiated-type cancers with undifferentiated components. The above-mentioned type (1) lesions with the undifferentiated components measuring >2 cm in long diameter are defined as endoscopic curability C (eCuraC)-2 (see the measuring method in Fig. 6).

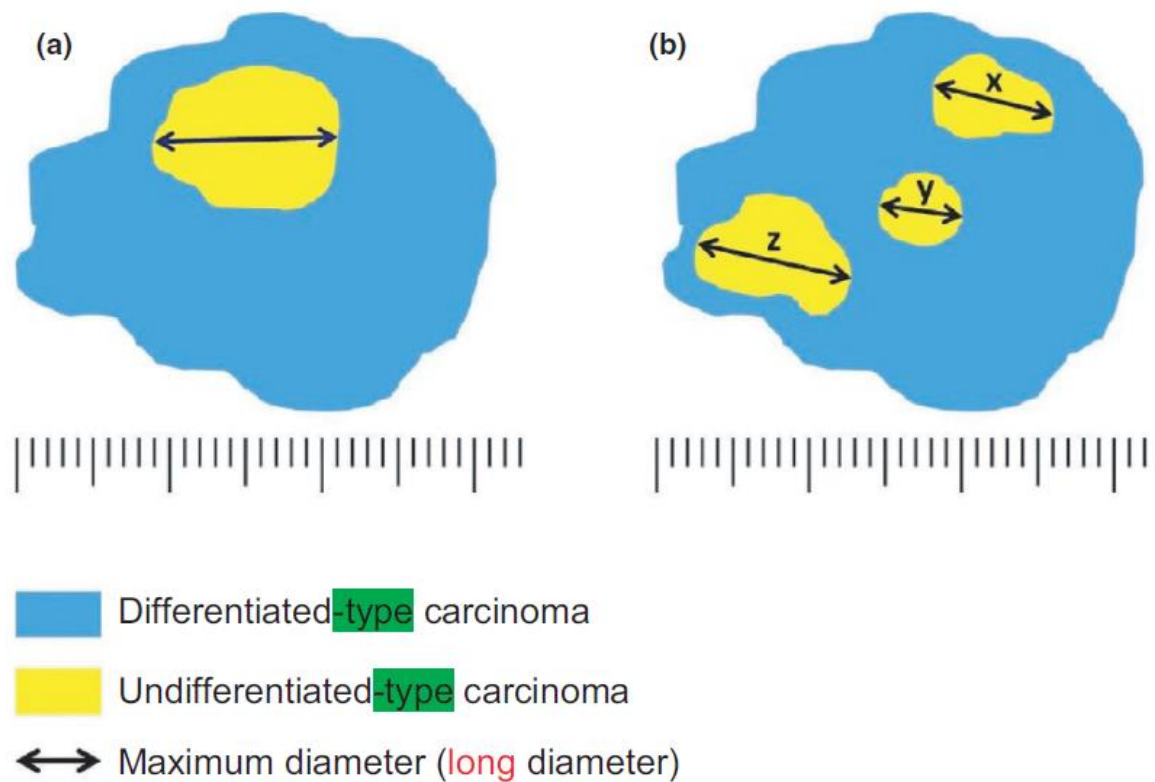


Figure 6 Measurement of the size of the coexisting undifferentiated-type carcinoma. (a) Reconstruct the area of the undifferentiated-type carcinoma, and measure the long diameter of that area. (b) If undifferentiated-type carcinoma is present in more than one area, measure the long diameters (x, y, z) of all these areas and record the sum of these values.

미분화 혼재 점막하암

Endoscopic curability B

Although no sufficient long-term results have yet been obtained, curability can be expected. When the lesion is resected *en bloc*, is ≤ 3 cm in long diameter, predominantly of the differentiated type, and satisfies the following criteria: pT1b1(SM1) (within $< 500 \mu\text{m}$ from the muscularis mucosae), HM0, VM0, Ly0, and V0, it is considered endoscopic curability B (eCuraB).⁶⁴ However, the lesion is considered eCuraC-2 (see the measuring method in Fig. 6) if undifferentiated components are present in the submucosally invasive part of the lesion.