

Session I

## 5. A Case of Recurrent Advanced Gastric Cancer Patient with Bone Marrow Metastasis

Minyoung Shin, Hee Sung Lee, Jae Ho Park, Ju Seok Kim, Sun Hyung Kang,  
Hee Seok Moon, Jae Kyu Sung, Hyun Yong Jeong

*Department of Internal Medicine, Division of Gastroenterology, Chungnam National University  
School of medicine, Daejeon, Korea*

### 1. Case presentation

59세 여자환자가 2018년 10월, 내원 3주 전 넘어지며 발생한 목과 허리의 통증으로 타원에서 시행한 엑스선 검사에서 전이성 골병변 의증 하에 전원되었다. 과거력에서 2009년 3월 진행성 위암 진단 하에 위전절제술 시행 후 4차 FOLFOX 요법을 시행하였으며 2018년 6월까지 추적 관찰하며 시행한 복부전산화단층촬영 및 상부위장관 내시경 검사에서 재발의 소견은 보이지 않았다. 내원하여 시행한 복부전산화단층촬영, 전신 골 스캔 및 양전자방출단층촬영 결과 다발성 전이성 골병변으로 의심되는 소견이 관찰되었으며, 골반에서 시행한 조직검사 결과 분화도가 나쁜 전이성 선암이 확인되었다.

### 2. Diagnosis

골수 전이를 동반한 재발성 진행성 위암

### 3. Therapy and Clinical course

항암화학요법의 시행을 고려하던 중, 지속적으로 악화되는 범혈구 감소증과 함께 제 12병일째 두통 및 의식 저하로 뇌 전산화단층촬영을 시행하였고 외상성 경막하 출혈 진단 하에 신경외과에서 응급 천공술을 시행하였다. 제 16병일째 환자의 의식은 호전되었으나 이후 범혈구 감소증이 더욱 악화되었으며 제 18병일째 갑작스러운 의식 저하와 경련을 보이며 사망하였다.

### 4. Conclusion

본 증례는 진행성 위암을 진단받고 수술 및 항암화학요법 시행 후 9년간 재발의 소견이 없던 환자가 다발성 전이성 골병변의 형태로 발견되어, 골수 전이를 동반한 재발성 진행성 위암의 급격한 악화를 보여준 증례로서 보고하는 바이다.

**Key words:** 진행성 위암, 전이성 골병변, 골수 전이

## REFERENCES

1. Kim HS, et al. Clinical Outcome of Gastric Cancer Patients with Bone Marrow Metastases. *Oncology*. 2007; 73:192-197.
2. KW Jauch, et al. Prognostic significance of bone marrow micrometastases in patients with gastric cancer. *Journal of Clinical Oncology*. 1996;14:1810-1817.
3. Günter Schlimok, et al. Micrometastatic tumour cells in bone marrow of patients with gastric cancer: Methodological aspects of detection and prognostic significance. *European Journal of Cancer and Clinical Oncology*. 1991;27:1461-1465.

## Case Presentation

---

59/F

Chief complaint

목과 허리 통증

onset) 내원 2주 전

## Present Illness

---

- 내원 3주 전 경운기를 타다가 넘어지며 수상
- 내원 2주 전 개인 정형외과의원에서 경추골절 의증으로 진통제 처방받아

복용

- 이후 증상 호전되지 않아 Spine MRI 촬영 후 전이성 뼈 병변 의증으로 본

원 응급실로 내원함.

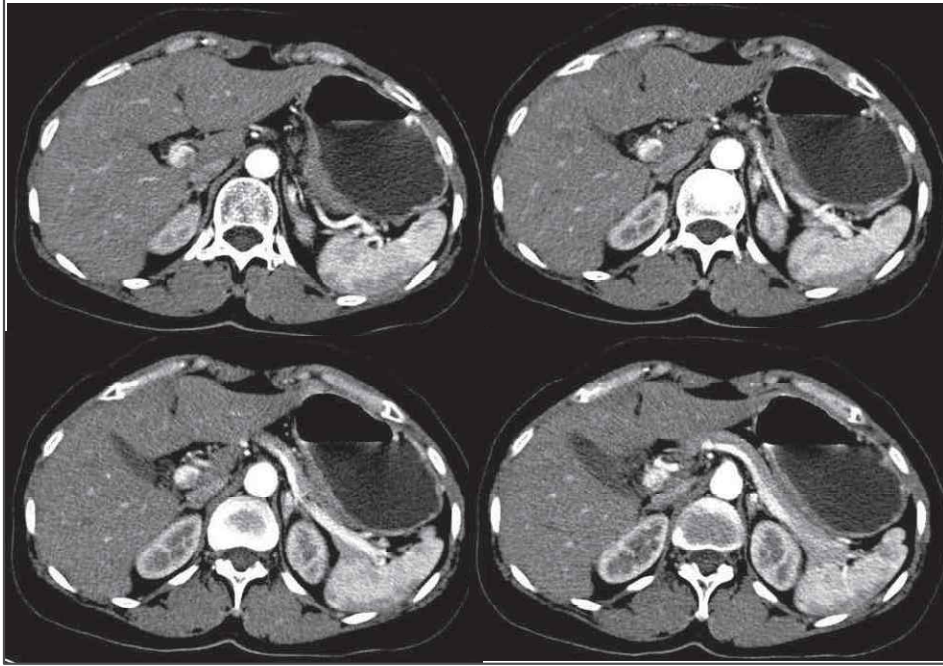
## Past medical history

2009. 2월) 건진 위 내시경에서 이상 소견으로 전원됨.

## Initial upper endoscopy (2009.2.12)



**Initial A-P CT (2009.2.20)**



**OP findings (2009.2.24)**



## Past medical history

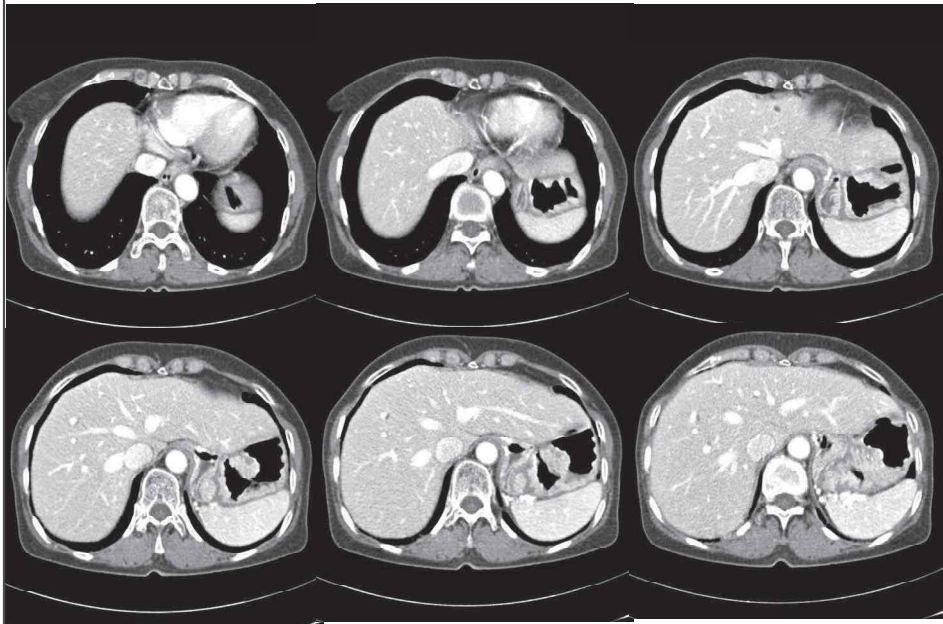
2009.2월) AGC-3 (pT3N3M0) 진단, TG c RY-EJ 시행

(Bx.; ADC, poorly differentiated with signet-ring cell component)

2009.3-4월) #1-4. FOLFOX 시행

2009.7월~2018.6월) GFS & A-P CT: No evidence of recurrence

## F/U A-P CT (2017.3.2)



### F/U Upper endoscopy (2018.06.12)



### Social history

---

Alcohol (-)

Smoking (-)

Herb (-)

### Family history

---

Nonspecific

## Review of Systems

### General

Generalized weakness (+)  
Body weight loss (+, -3kg/6mo)

### Head / Eye / ENT

Headache / Dizziness (-/-)  
Rhinorrhea / Nasal obstruction (-/-)  
Otagia / Hearing impairment (-/-)

### Respiratory

Dyspnea / DOE (-/-)  
Cough / Sputum (-/-)

### Cardiovascular

Chest discomfort / pain (-/-)  
Palpitation (-)

### Gastrointestinal

Abdominal discomfort / pain (-/-)  
Anorexia / Nausea / Vomiting (-/-/-)  
Constipation / Diarrhea (-/-)  
Dysphasia / Dyspepsia (-/-)  
Melena / Hematochezia (-/-)

### Genitourinary

Dysuria / Frequency / Urgency (-/-/-)  
RU sense (-)  
Nocturia / Hematuria (-/-)

### Musculoskeletal

Neck pain (+)  
Lower back pain (+)

## Physical Examination

### V/S

99/68 mmHg-91/min-20/min-36.5°C

### General appearance

Ht. : 154.2 cm Wt. : 31.9 kg  
BMI : 13.41 kg/m<sup>2</sup>  
Alert mental status  
Chronic ill looking appearance

### H/N

Neck vein engorgement (-/-)  
Lymphadenopathy (-/-)  
Neck stiffness (-)

### ENT

Isocoric pupil with L/R (+/+)  
Pinkish conjunctivae

### Chest

Clear breath sound without rale  
Regular heart beat without murmurs

### Abdomen

Soft & flat  
Normoactive bowel sound  
Abdomen Td/rTd (-/-)  
No organomegaly & palpable mass

### •Back

CVA Tenderness (-/-)

### Extremity

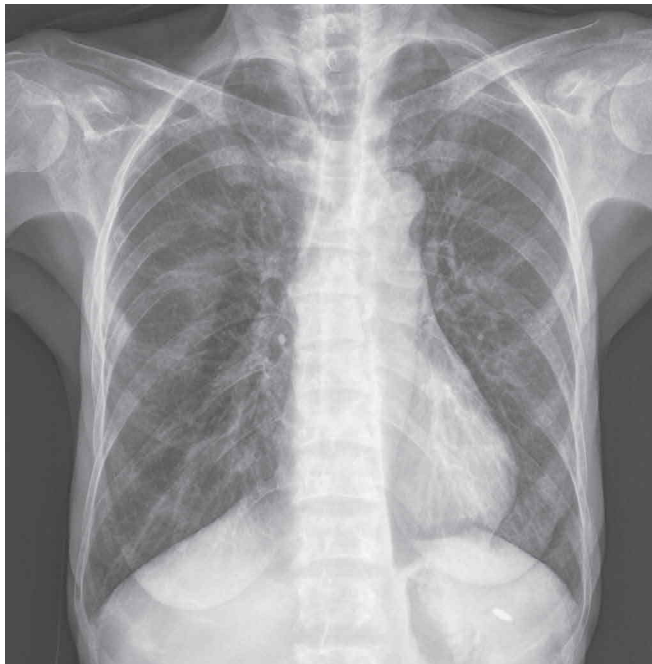
PTPE (-/-)  
Clubbing/cyanosis (-/-/-)



### Initial Lab Data (2017.11.17)

Complete blood count		Serum chemistry	
WBC	5040 (10 <sup>3</sup> /uL)	TP/ Alb	5.6 / 3.0 (g/dL)
Hb	9.1 (g/dL)	Glucose	169 (mg/dL)
Hct	27.4 (%)	Total bilirubin	0.49 (mg/dL)
MCV	91.6 (fL)	T.Chol	125 (mg/dL)
Platelet	58 (10 <sup>3</sup> /uL)	AST/ ALT	21/13 (IU/L)
Seg. Neutrophil	73.6 (%)	ALP	>2700 (IU/L)
Coagulation test		BUN/ Cr	16.2/0.36 (mg/dL)
aPTT	37.0 (sec)	Na/ K/ Cl	138.5/4.40/103.2 (mEq/L)
PT	12.3 (sec)	T.Ca/ P	8.4 / 3.0 (mg/dL)
PT (INR)	1.1 (ratio)	LDH	490 (IU/L)

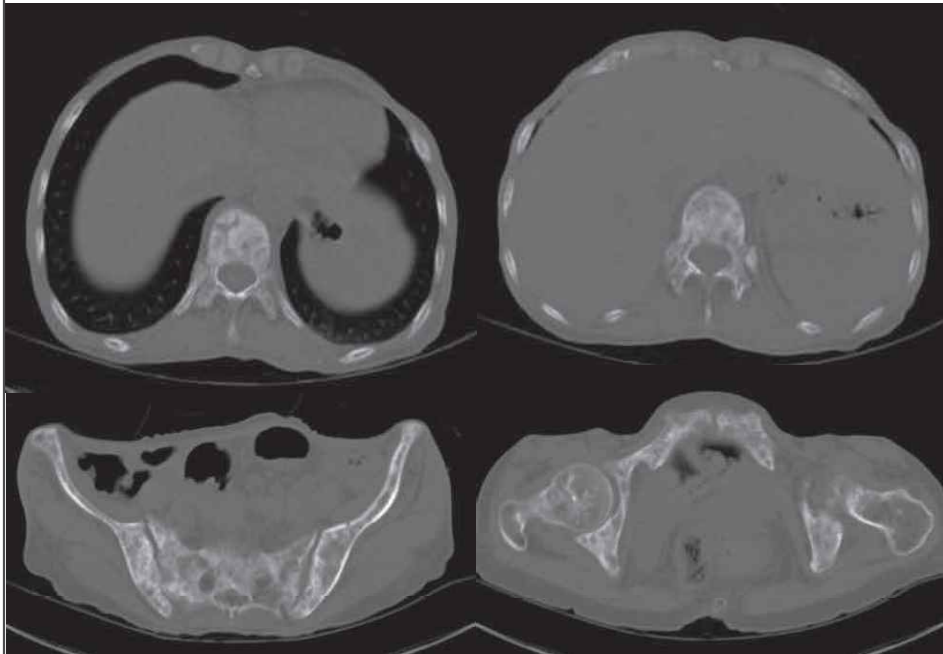
### Chest PA (2018.10.10)



**외부 LS-Spine MRI (2018.09.26)**



**APCT (2018.10.10)**



## Problem List

---

#1. Multiple bone metastasis

#2. Known AGC s/p TG c RY-EJ with #4.FOLFOX

## Assessment & Plan

---

**# 1.#2.**

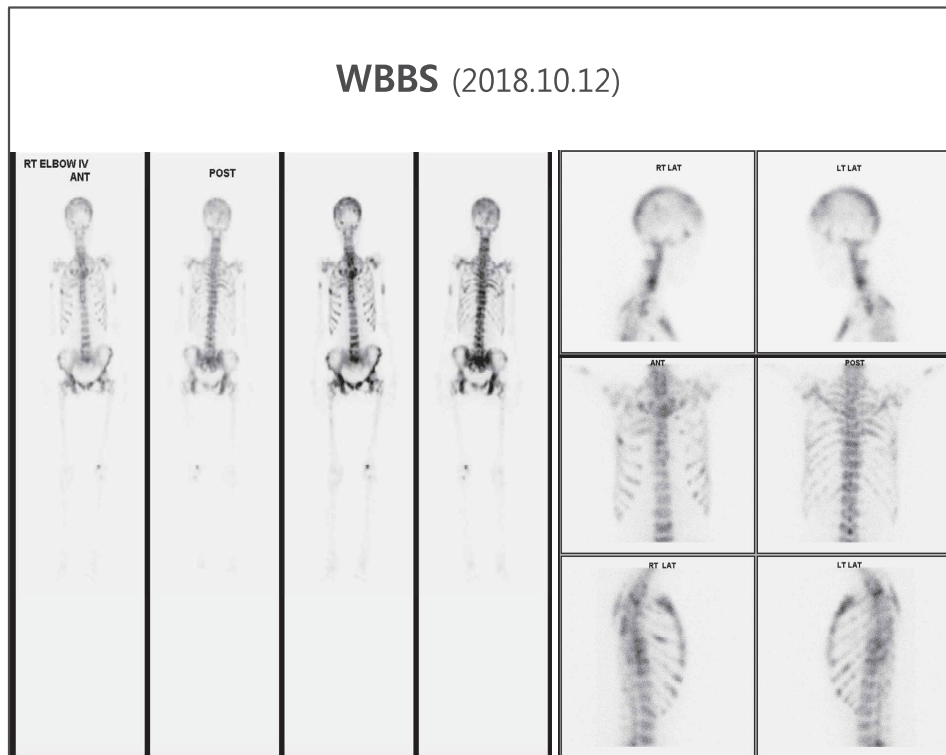
**A) R/O Recurrence of AGC with bone metastasis**

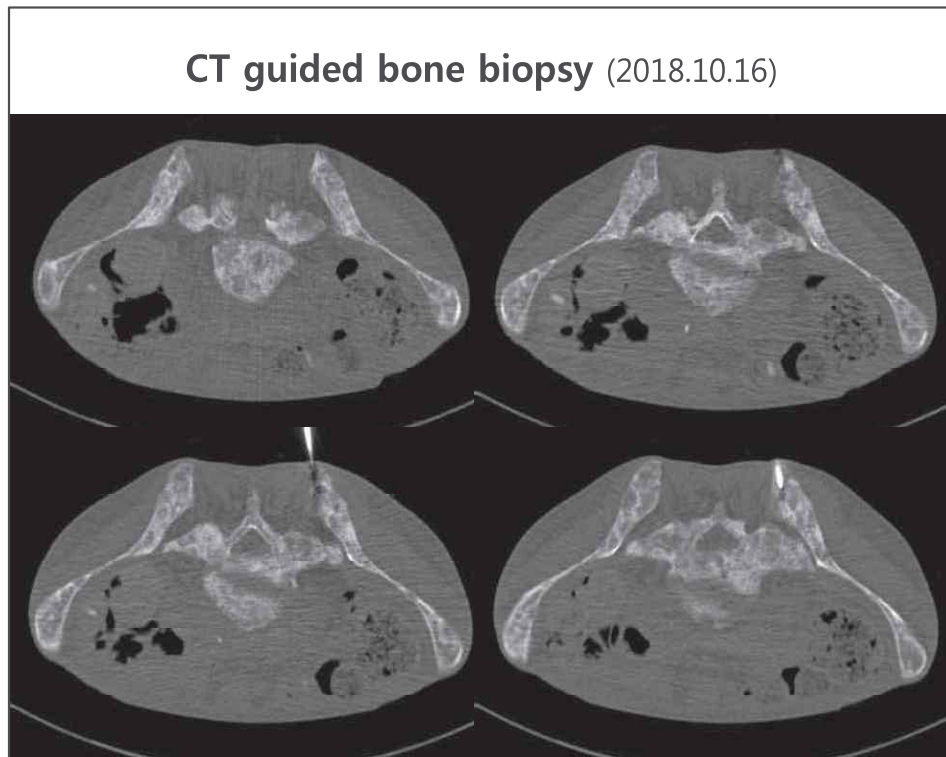
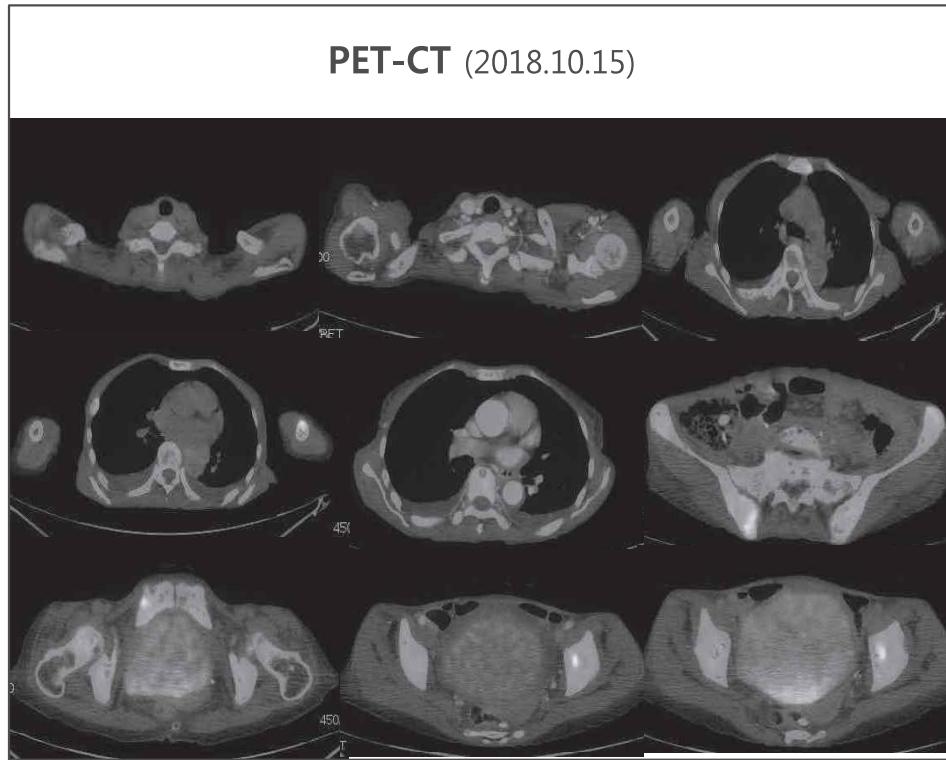
D-P) 1. WBBS, PET-CT

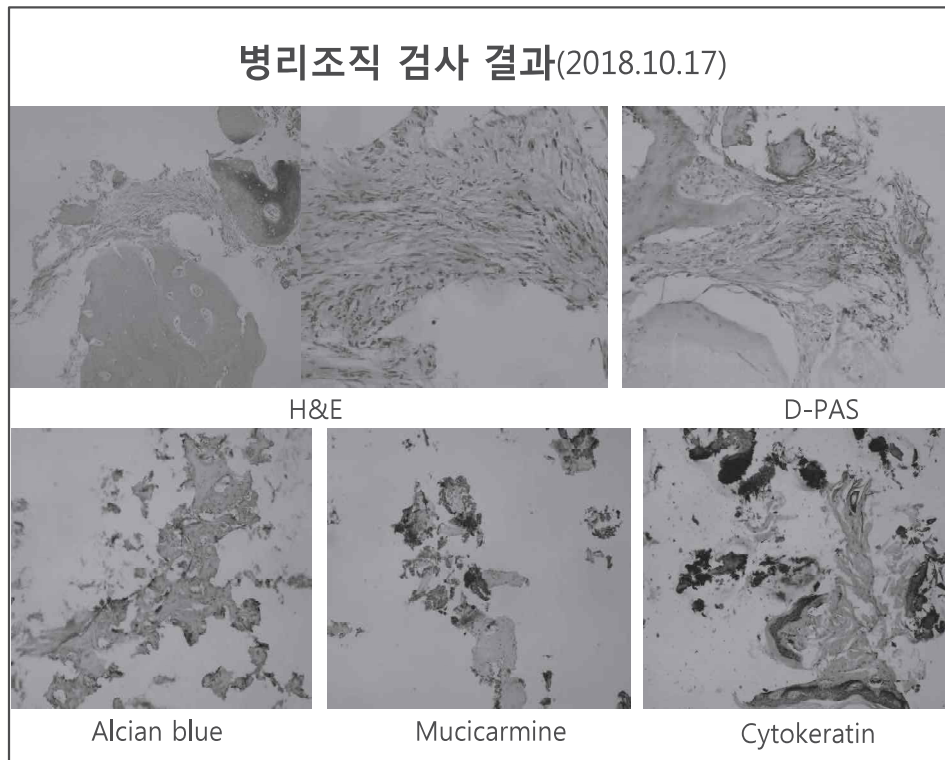
2. Bone biopsy

T-P) 1. Pain control

2. Supportive care







**Clinical course**

---

- HD#2) WBBS
- HD#5) PET-CT
- HD#6) CT guided bone biopsy  
 → Compatible with metastatic adenocarcinoma
- HD#10) Pancytopenia → R/O DIC

	<b>ANC</b>	<b>Hb</b>	<b>Plt</b>
4개월 전	2250	11.9	202K
내원일	4700	7.4	51K
HD#3	4100	6.8	34K
HD#7	3300	9.1	33K
HD#11	4000	8.7	16K
HD#12	1210	7.6	12K

### Clinical course

---

HD#12) 두통 및 의식 저하로 brain CT 시행  
→ C-SDH, Lt. FTP 진단 하 Burr hole trephination 시행

HD#12

HD#13



(pre-OP)

(post-OP)

### Clinical course

---

- HD#17) Pancytopenia 악화 (4,320 – 10.4 – 13K)
- HD#18) 갑작스런 의식 저하로 사망

## 요 약

- 9년 전 진행성 위암 진단 하에 위전절제술 및 4차 FOLFOX 항암치료 이후 지속적인 재발 소견없이 외래 추적관찰 하던 환자가, 물리적 수상 이후 발생한 통증을 평가하던 중에 발견된 다발성 골전이로 전원되어 악성종양의 골수 전이로 인한 급격한 범혈구감소증 및 경막하 출혈로 인하여 사망하였다.

## Review



Table 1. Clinicopathological features of early gastric cancer cases giving rise to bone metastasis in Japan			Table 1. Patient characteristics		Table 1. Patient demographics and pathologic features	
Age (range) (n = 37)		56.6 (33-78)	Total	No. of patients (%)	Median age, years	Patients
Sex (n = 43)	Male	18	Median age (range, yr)	46 (24-61)	≤50	24 (61.5)
Location (n = 28)	Female	25	Gender		>50	15 (38.5)
	Upper third	4	Male	18 (69.2)	Male sex	21 (53.8)
	Middle third	13	Female	8 (30.8)	ECOG performance status	
	Lower third	7	ECOG PS		0-1	18 (46.2)
	Whole stomach	4	0, 1	14 (53.8)	≥2	21 (53.8)
Depth (n = 35)	Mucosa	18	2, 3	12 (46.1)	Tumor grade	
	Submucosa	17	Histological grade		Well/moderately differentiated	2 (5.1)
	Synchronous	14	Well/moderately differentiated	0 (0)	Poorly differentiated/signet ring cell	37 (94.9)
	Recurrent	26	Poorly differentiated, only	9 (34.6)	Site of involvement	
Diagnosis (n = 24)	Plain bone X-ray	8	Poorly differentiated/signet ring cell	17 (65.4)	Bone	31 (79.5)
	Bone scintigraphy	13	Site of involvement		Lymph node	17 (43.6)
	Autopsy	1	Bone	15 (57.7)	Peritoneum	15 (38.5)
	Fracture	1	Lymph node	12 (46.2)	Lung	9 (23.0)
	Bone marrow aspiration	1	Liver	1 (3.8)	Ovary	5 (12.8)
Macroscopic type <sup>a</sup> (n = 36)	IIa	2	Lung	3 (11.5)	Pleura	5 (12.8)
	IIb	6	Peritoneum	1 (3.8)	Liver	4 (10.3)
	IIc	21	Cause of bone marrow biopsy		Adrenal gland	3 (7.7)
	IIc-III	5	Anemia	3 (11.5)	Reason for bone marrow biopsy	
	IIa-IIc	1	Thrombocytopenia	7 (26.9)	Thrombocytopenia	27 (69.2)
	IIb-IIc	1	Leukoerythroblastic reaction	3 (11.5)	DIC	8 (20.6)
Histological type <sup>a</sup> (n = 48)	Tub	9	Anemia and thrombocytopenia	5 (19.2)	Leukoerythroblastic reaction	2 (5.1)
	Per	14	Anemia and thrombocytopenia and leukoerythroblastic reaction	5 (19.2)	Blood counts and chemistry	
	Sig	25	DIC	1 (3.8)	Hemoglobin, g/dl	8.9 [3.7-13.0]
	Utd	2	Hot uptake in bone scan	2 (7.7)	White blood cells, n/mm <sup>3</sup>	7,750 [1,050-21,300]
Lymph node metastasis <sup>b</sup> (n = 29)	n0	13	Time of bone marrow metastases		Platelets, n/mm <sup>3</sup>	44,000 [5,000-273,000]
	n1	5	Synchronous bone marrow metastases	12 (46.2)	AST, IU/l	50 [17-403]
	n2	4	Metachronous bone marrow metastases	14 (53.8)	ALT, IU/l	35 [6-352]
	n3	3	Chemotherapy		ALP, IU/l	573 [108-6,242]
	n4	4	Yes	16 (61.5)	LDH, IU/l (n = 33)	1,531 [353-30,800]
			No	10 (38.5)	Calcium (corrected), mg/dl	9.2 [8.4-17.6]
					Albumin, g/dl	3.4 [2.1-4.4]
					Sodium, mmol/l	133 [119-145]
					PT, s	16.1 [13.5-27.6]
					aPTT, s	41.5 [33.6-73.4]
					Fibrinogen, mg/dl (n = 35)	168 [51-424]
					D-dimer, µg/ml (n = 32)	39.3 [0.21-91.3]

Figures are number of patients with percentages in parentheses and medians with ranges in brackets. PT = Prothrombin time; aPTT = activated partial thromboplastin time.

World J Gastroenterol 2005;11(36):5587-91

Oncology 194 2007;73:192-197

Cancer Res Treat. 2011;43(4):244-249

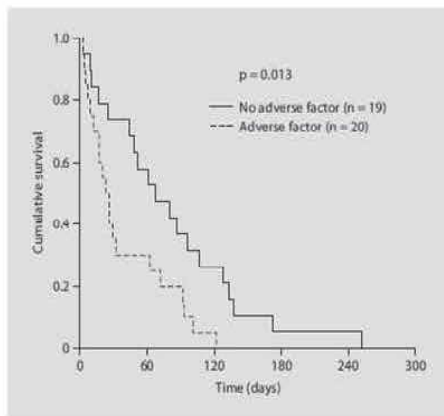


Fig. 1. Forward Cox regression analysis of survival according to the adverse factors.

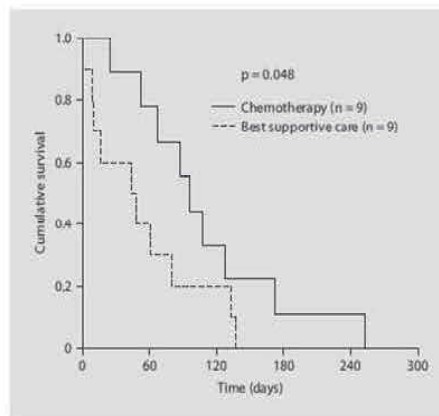
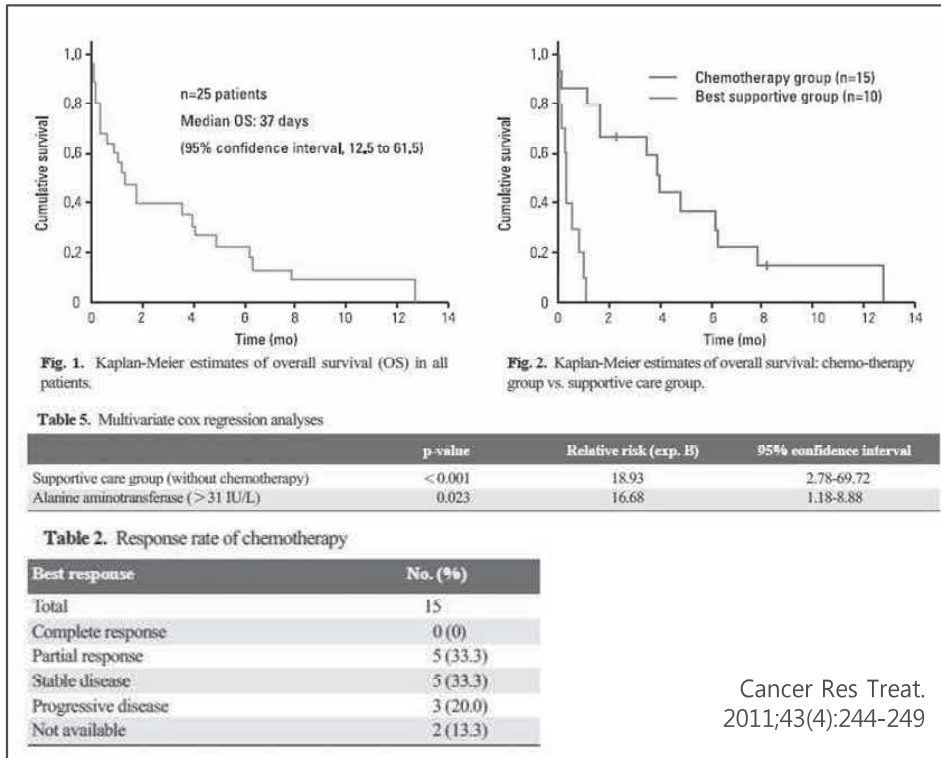


Fig. 2. Subgroup analysis according to systemic chemotherapy in patients without any adverse factors.

Table 3. Multivariate Cox regression analyses

	p value	RR (exp. B)	95% CI
Serum Na (≤133 mmol/l)	<0.001	4.57	1.99-10.52
Lung metastasis	0.007	3.47	1.48-8.15
Peritoneal seeding	0.036	2.17	1.06-4.43

Oncology 194  
2007;73:192-197



MEMO

MEMO