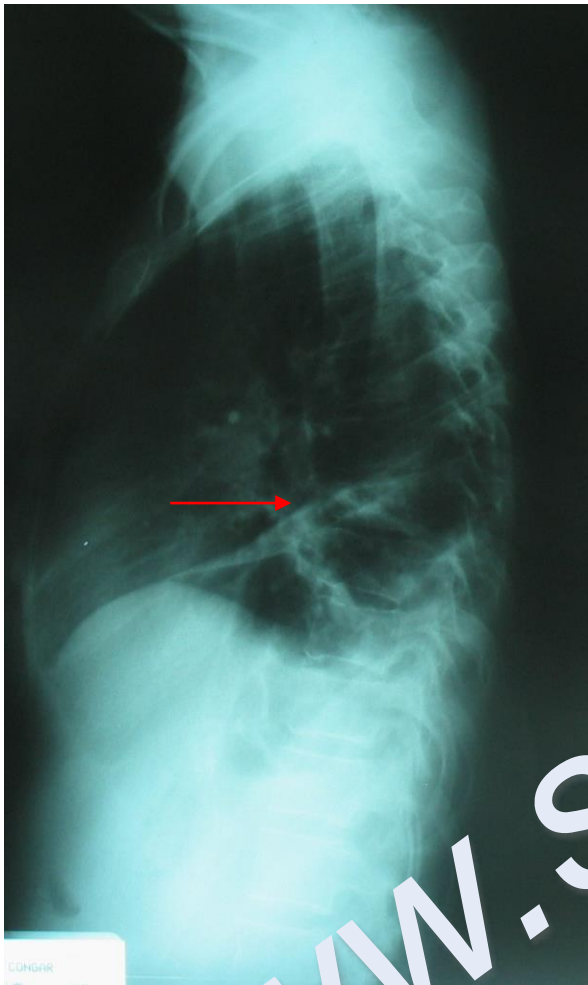


# Classification of Metastatic Spinal Tumors

**Alpaslan Senkoylu, MD**

Professor of Orthopaedics and  
Traumatology

Istanbul, 25-26 October, 2013

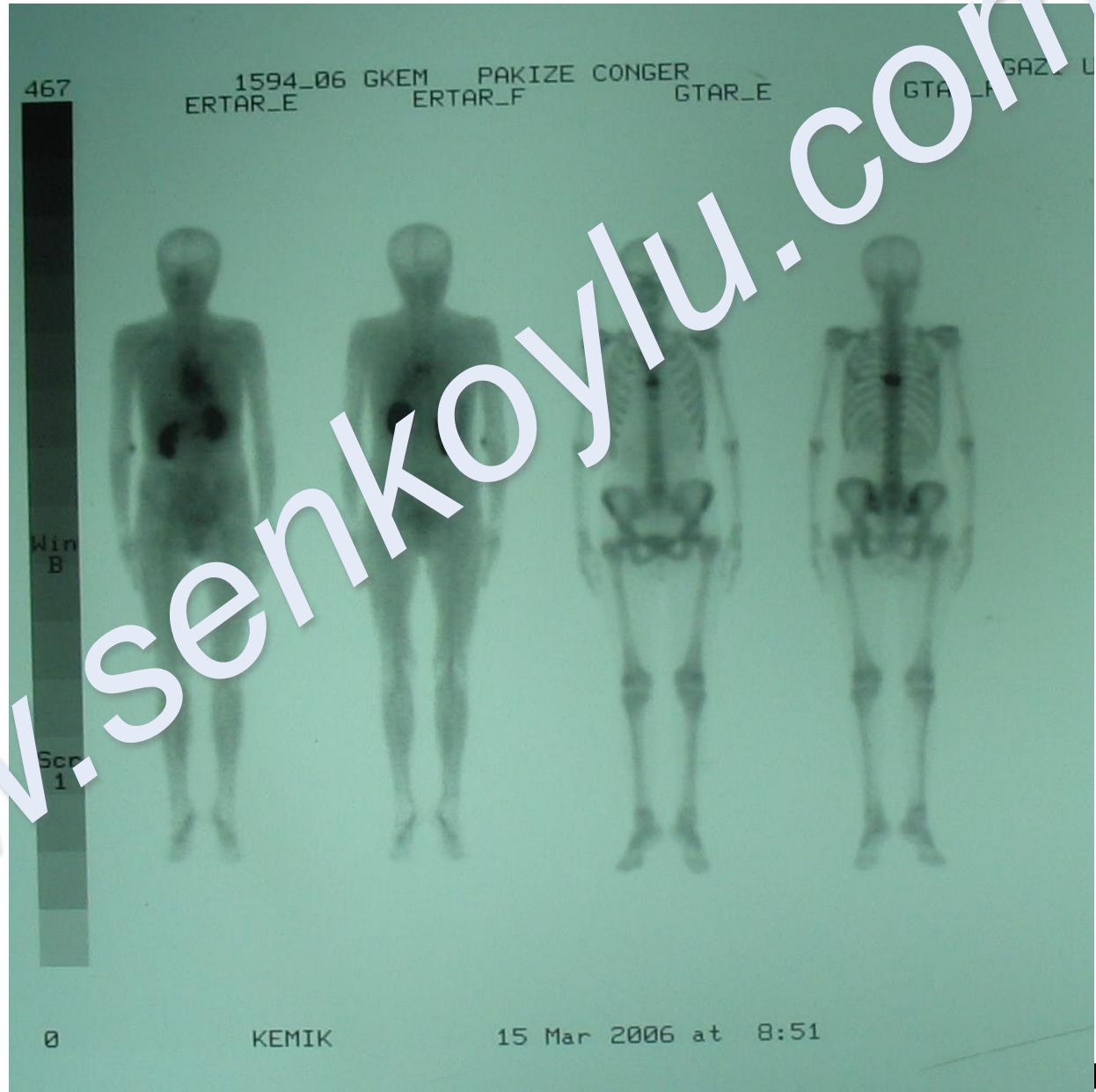


48 y, K

T8 Breast CA Metastases

Frankel C

# Solitary Metastases



# Scoring Systems in Tumor Patients

## Aim:

- To assess the prognosis
- To decide how to treat
- To compare the effectiveness of therapies
- To reevaluate the status of illness

# Survival after the spinal metastases

Primary Tumor	Mean Survival (months)
Lung CA	4
Breast CA	24-36
Prostate CA	>48
Renal Cell CA	12
Thyroid CA	>48
Lymphoma-Myeloma	>48
Melanoma	4
Sarcoma	8-12

Gokaslan Z, MD Anderson's Data



# Classification Systems

- Prognostic Scores
  - Harrington
  - Tomita
  - Tokuhashi
- Morphologic Classifications
  - Tomita
  - WBB (Weinstein-Boriani-Biagini)

# Harrington

- 
- 1 No neurological involvement
  - 2 Bone involvement without collapse or instability
  - 3 Significant neurological impairment without bone involvement
  - 4 Vertebral collapse with pain or instability, but no neurological impairment
  - 5 Vertebral collapse with pain or instability and neurological impairment
- 

*Harrington KD. 1986, J Bone Joint Surg 68A:1110–1115*

# Tomita

Scoring System				Prognostic Score	Treatment Goal	Surgical Strategy
Point	Prognostic factors					
	Primary tumor	Visceral mets.*	Bone mets.**			
1	slow growth <small>(breast, thyroid, etc.)</small>	/	solitary or isolated	2	Long-term local control	Wide or Marginal excision
2	moderate growth <small>(kidney, uterus, etc.)</small>		multiple	3		
3	rapid growth	/	solitary or isolated	4	Middle-term local control	Marginal or Intralesional excision
4	rapid growth <small>(lung, stomach, etc.)</small>		multiple	5		
				6	Short-term palliation	Palliative surgery
				7		
				8	Terminal care	Supportive care
				9		
				10		

\* No visceral mets. = 0 point.

\*\* Bone mets. including spinal mets.

Tomita K, et al 2001, Spine 26:298–306



Characteristic	Score
General condition (performance status) <u>Karnofsky's</u>	
Poor (PS 10%–40%)	0
Moderate (PS 50%–70%)	1
Good (PS 80%–100%)	2
No. of extraspinal bone metastases foci	
≥3	0
1–2	1
0	2
No. of metastases in the vertebral body	
≥3	0
2	1
1	2
Metastases to the major internal organs	
Unremovable	0
Removable	1
No metastases	2
Primary site of the cancer	
Lung, osteosarcoma, stomach, bladder, esophagus, pancreas	0
Liver, gallbladder, <u>unidentified</u>	1
Others	2
Kidney, uterus	3
Rectum	4
Thyroid, breast, prostate, carc.roid tumor	5
Palsy	
Complete (Frankel A, B)	0
Incomplete (Frankel C, D)	1
None (Frankel E)	2
Criteria of predicted prognosis: Total Score (TS) 0–8 = >6 mo; TS 9–11 = ≤6 mo; TS ≥ 11 = ≥1 yr.	

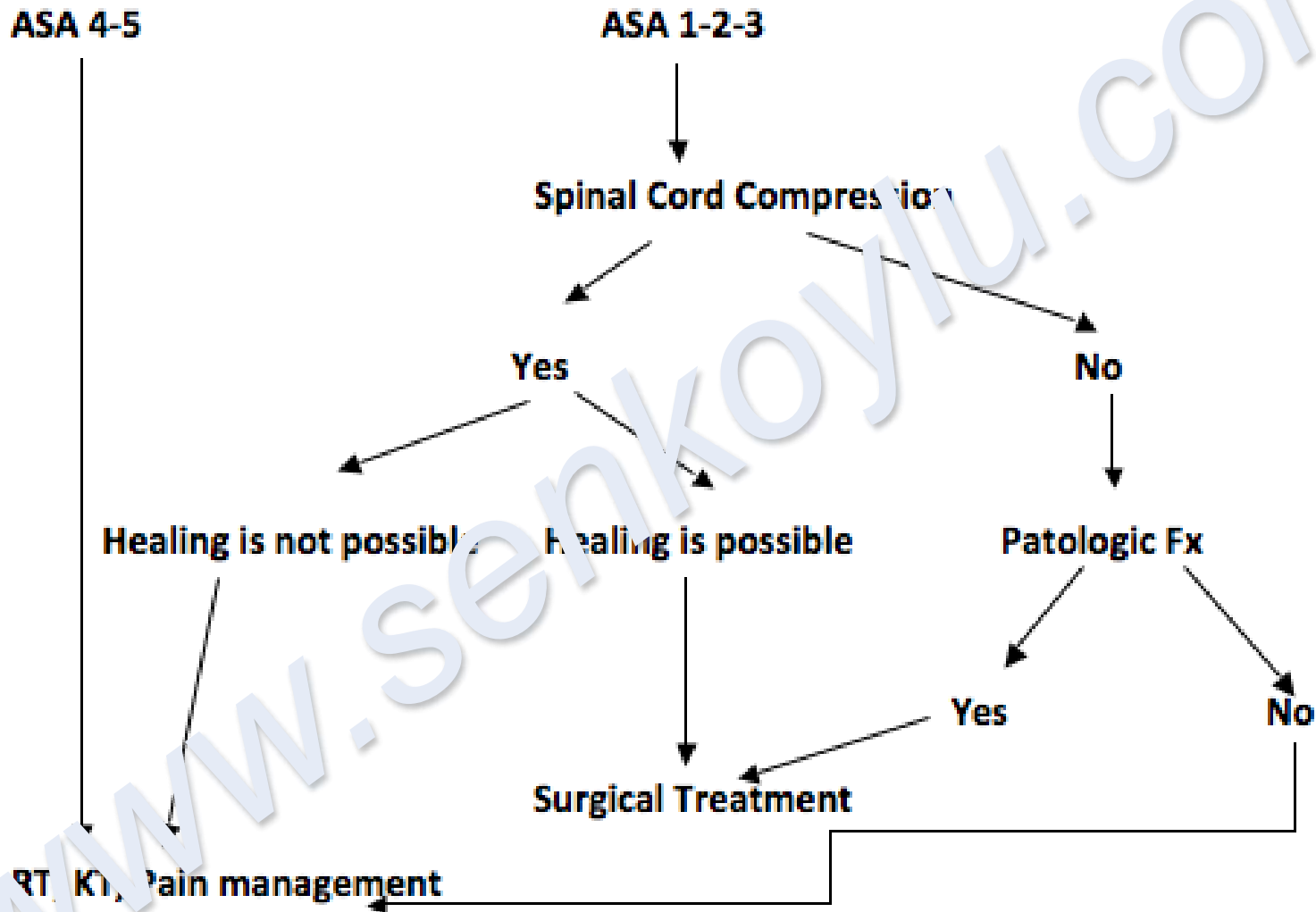
Score 0–8: 6 m ↓

Score 9–11: 6–12 m

Score 12–15: 1 y ↑

Tokuhashi Y, et al, 1990, Spine 15:1110–1113




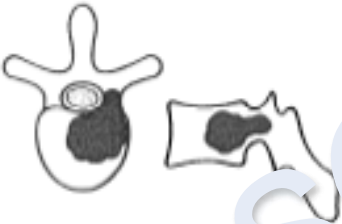



# Treatment Algorithm Based on General Health Status



ChTx-Rtx Resistant Lesions??

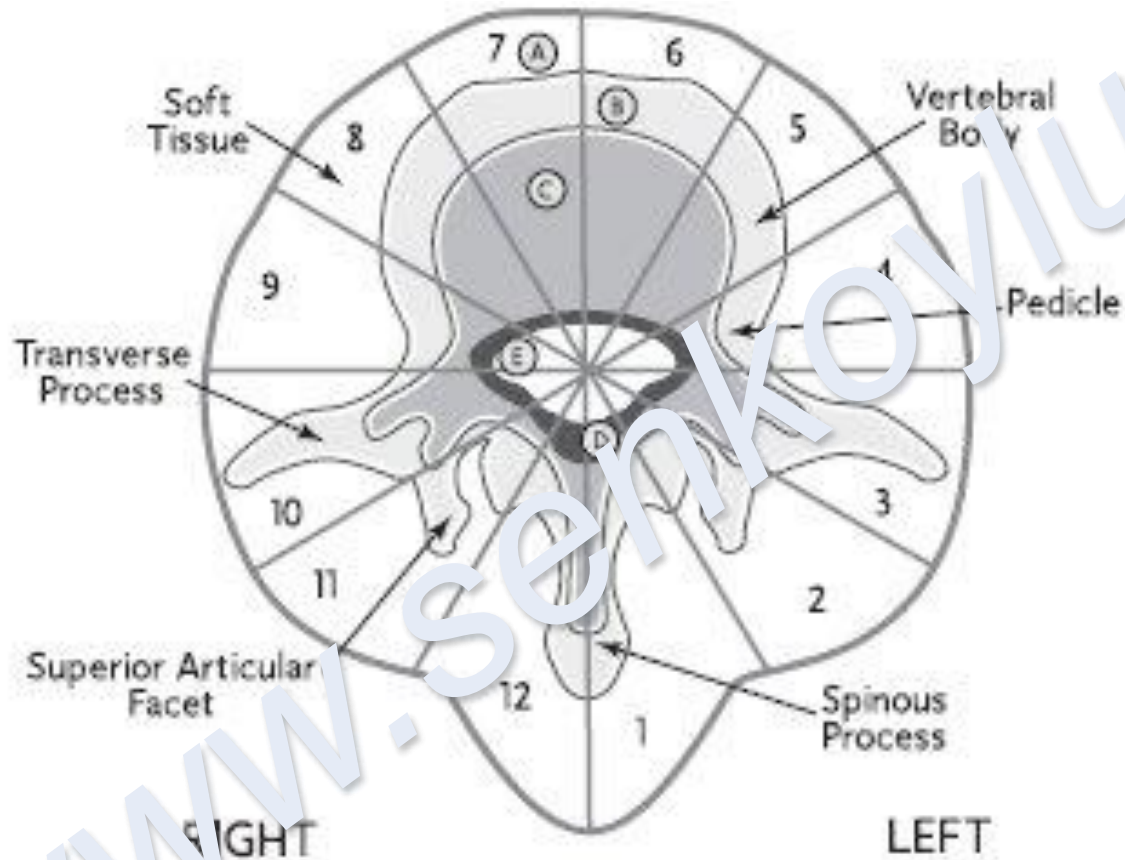
Boriani S, AO Spine Masterclass Symp, 2009

# Tomita-Morphologic

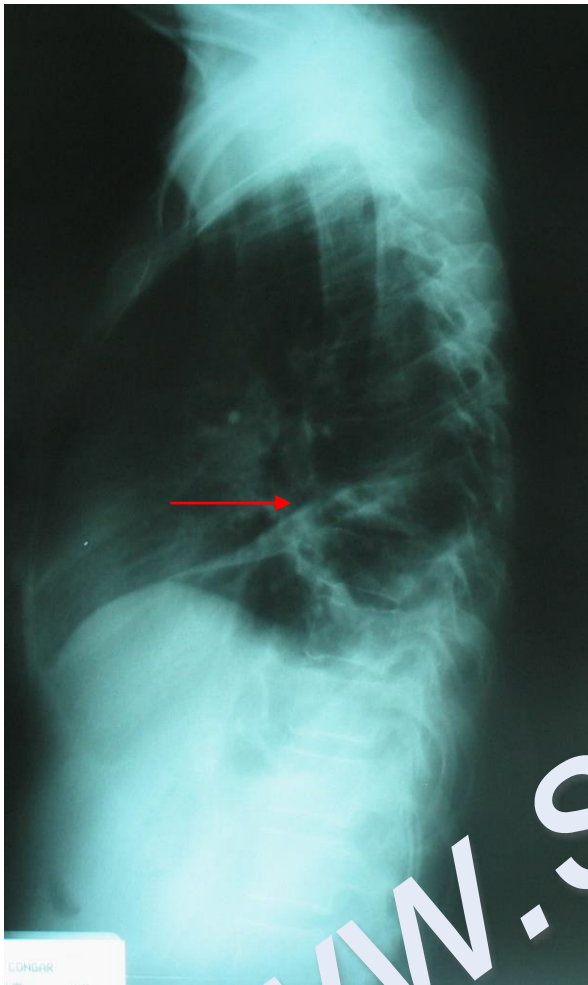
Intra-Compartmental	Extra-Compartmental	Multiple
<p><b>Type 1</b> vertebral body</p> 	<p><b>Type 4</b> epidural ext.</p> 	<p><b>Type 7</b></p> 
<p><b>Type 2</b> pedicle extension</p> 	<p><b>Type 5</b> para-vertebral ext.</p> 	
<p><b>Type 3</b> body-lamina ext</p> 	<p><b>Type 6</b> 2-3 vertebrae</p> 	

Tomita K, et al 2001, Spine 26:298–306

# Weinstein-Boriani-Biagini



*Boriani S, et al, 1997, Spine 22:1036–1044*



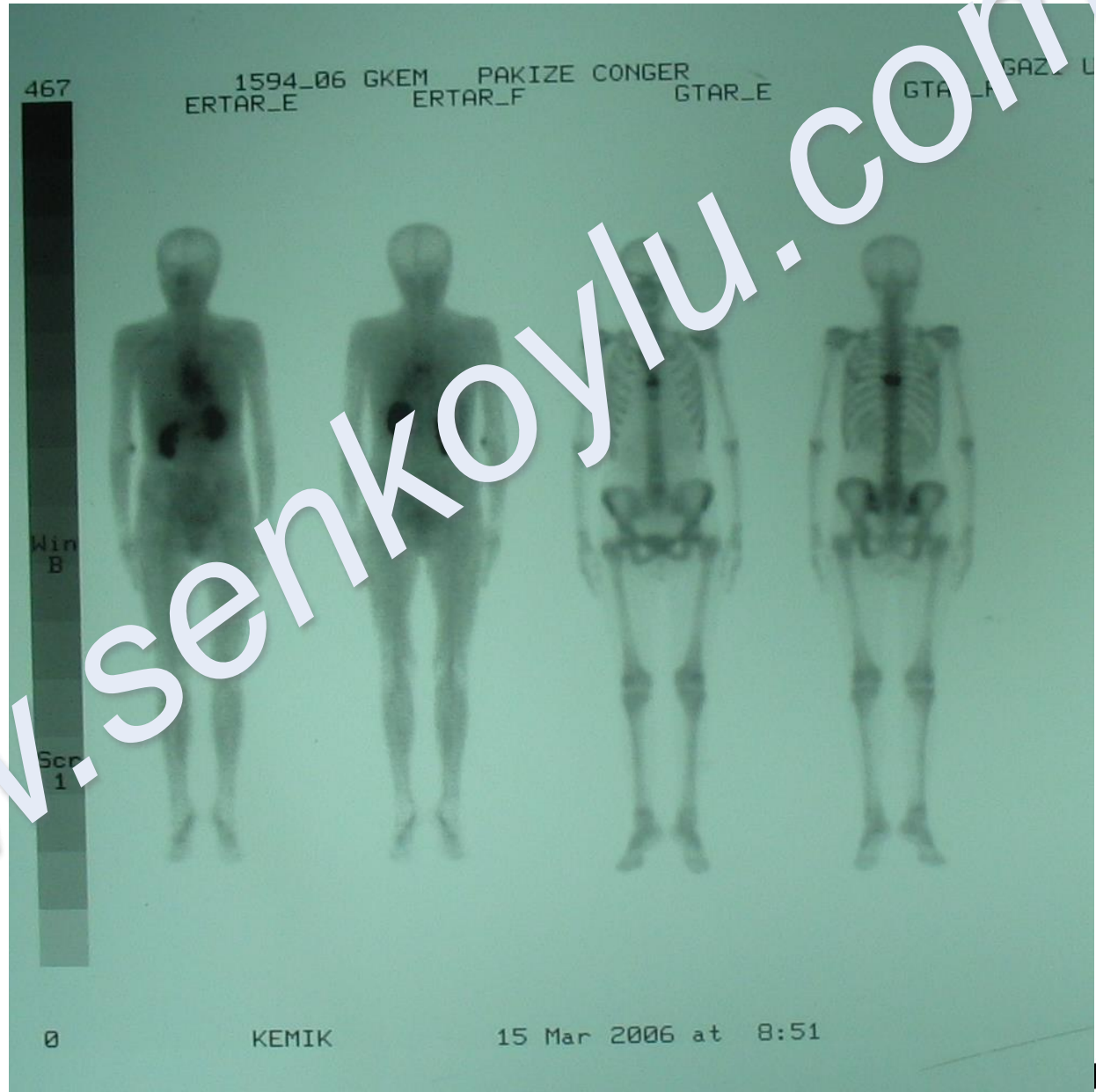
48 y, K

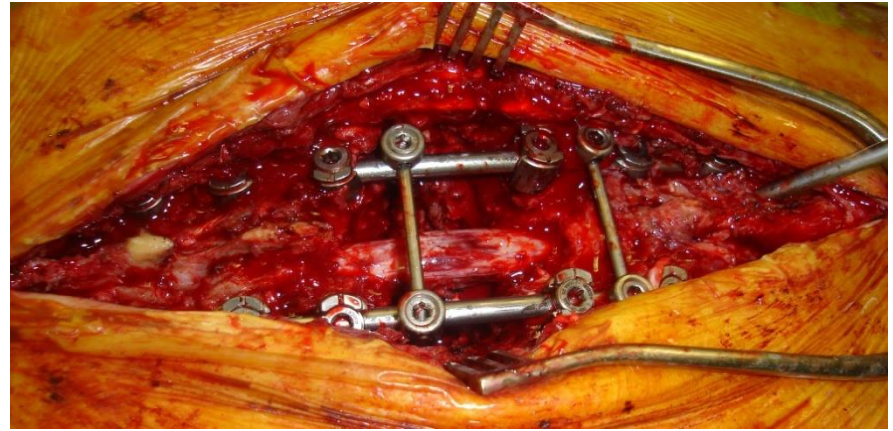
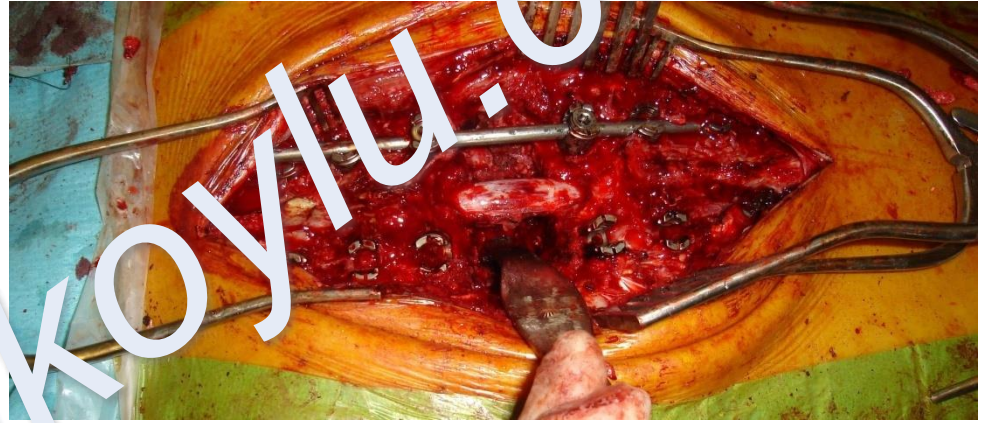
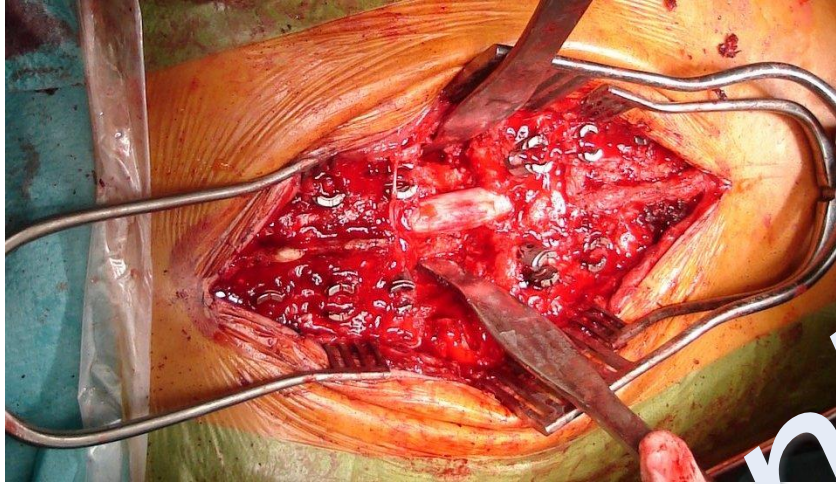
T8 Breast CA Metastases

Frankel C

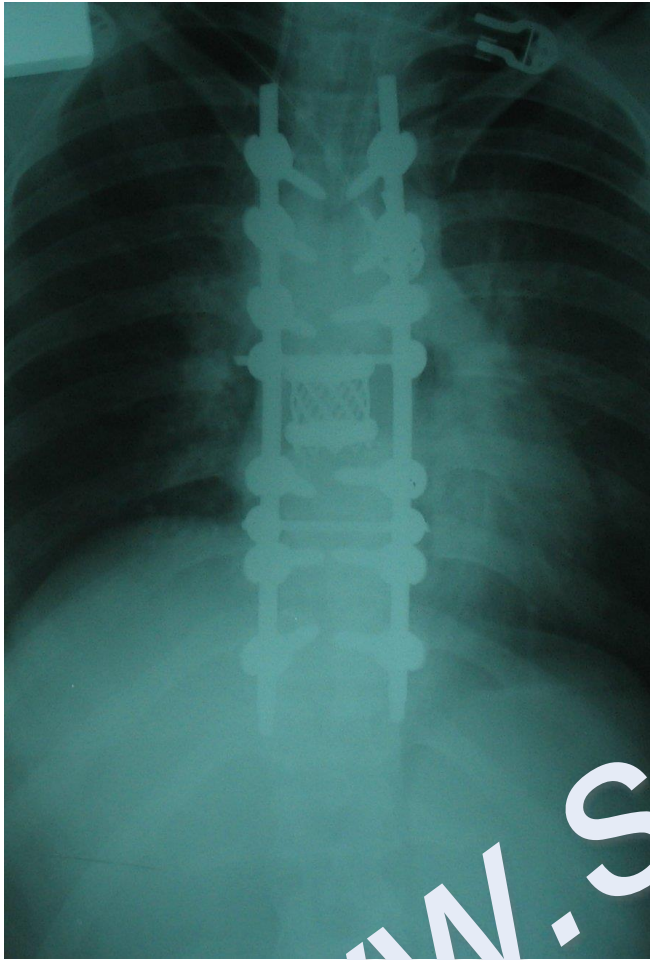


# Solitary Metastases









Fracture: Frankel D

Received ChTx+RTx

**Thank you**

[www.senkoylu.com](http://www.senkoylu.com)