Brief History

- Identification :
  - Name : 陳x
  - Admission : 94/10/06
  - Gender : male
  - Age : 75 y/o

  Chief Complaint :
  - Urinary difficulty for months.
- Past History : HTN without regular treatment.

Brief History

- Lower urinary tract symptoms for months, diagnosed of BPH, under medical treatment at 三總 Hospital.
- PSA checked at 三總 H. : 2.0 ng/dl (< 4.0)
- Acute urinary retention few days ago.
- Admitted on 94/10/06 to receive TURP.
- 10/07 : TURP

Brief History

- Pathology :
  - Spindle cell with hyperchromatic and pleomorphic nucleus.
  - Common with mitotic figures.
  - Vimentin (+), CK (-), PSA(-), ER (-), PR (-)
  - **Pathologic Diagnosis : Sarcoma**
- 10/25 : Abdominal and pelvic CT
  - No LN or visceral organ involved but local invasion to rectum cannot be ruled out.

Brief History

- 11/03 : Bone scan
  - Left ileum bone metastasis was suspected. (trauma to left side body 3 months ago)
- 11/10 : Colonoscopy
  - Biopsy x 5 : Adenomatous Polyps.
- 11/14 : MRI
  - Tumor invades rectum (+)
  - Left iliac wing fracture (+)

Laboratory Data

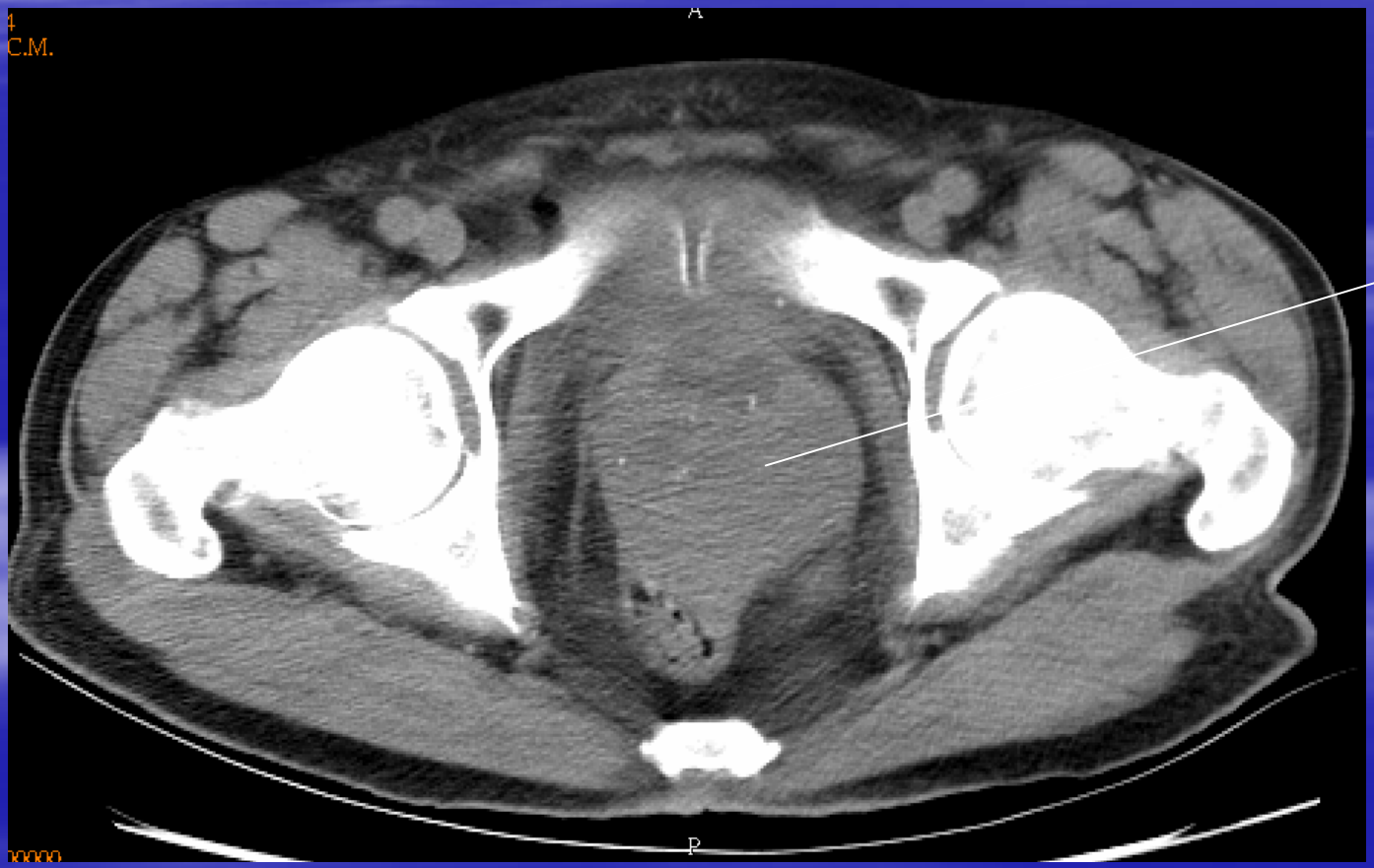
- Pre-OP PSA (at 三總) : 2.0 ng/dl
- 10/06 (admission)
  - U/A

Protein	OB	RBC	WBC
+/-	3+	80-90	2-4

  - Glucose : 113 mg/dl

Imaging

- Abdominal and pelvic CT : (94/10/25)



Encapsulated prostate mass

Heterogeneous enhancement

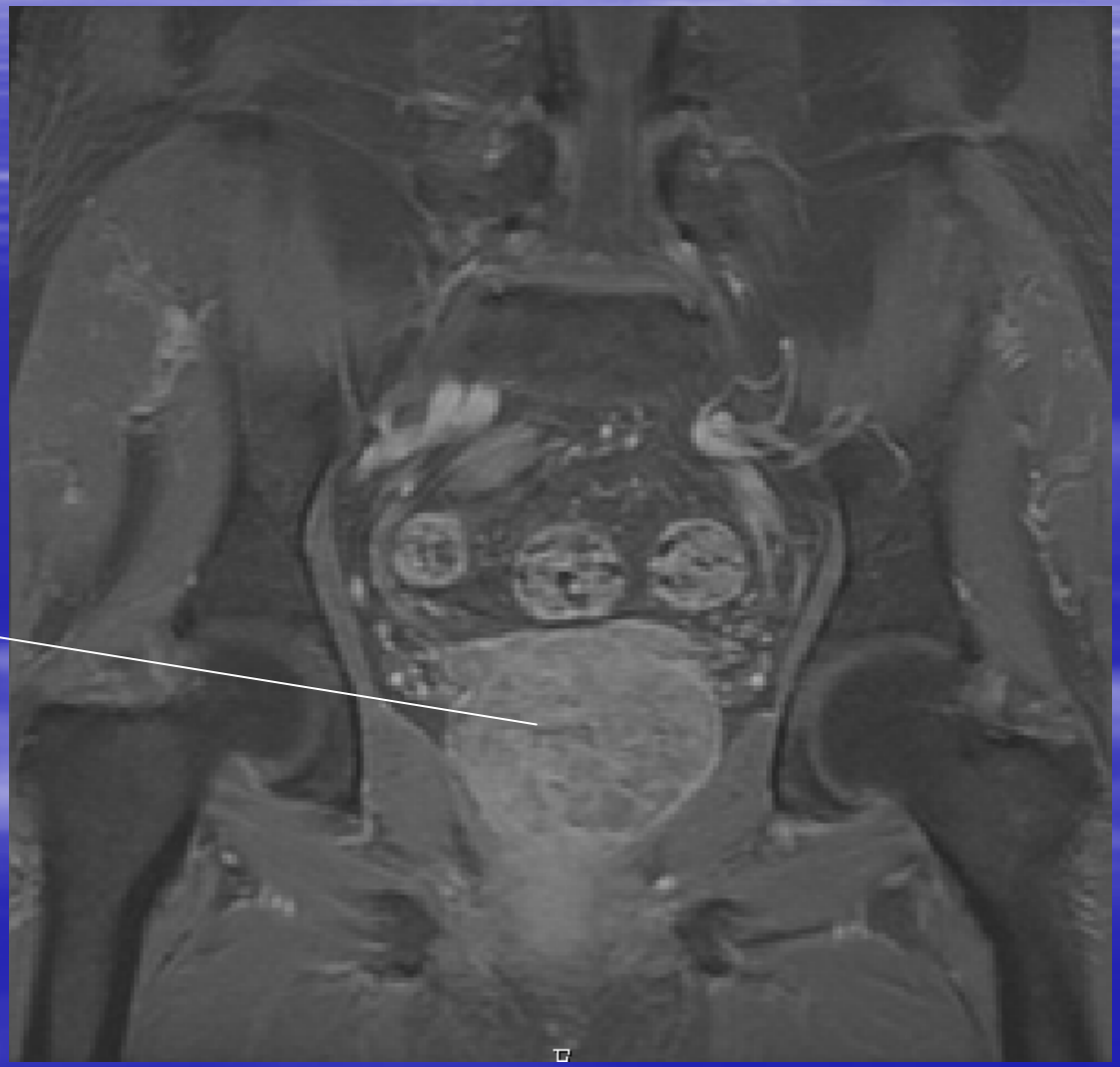
T2W
FSE
sagital

6.7x5.6x5.5 cm

heterogeneous enhancement

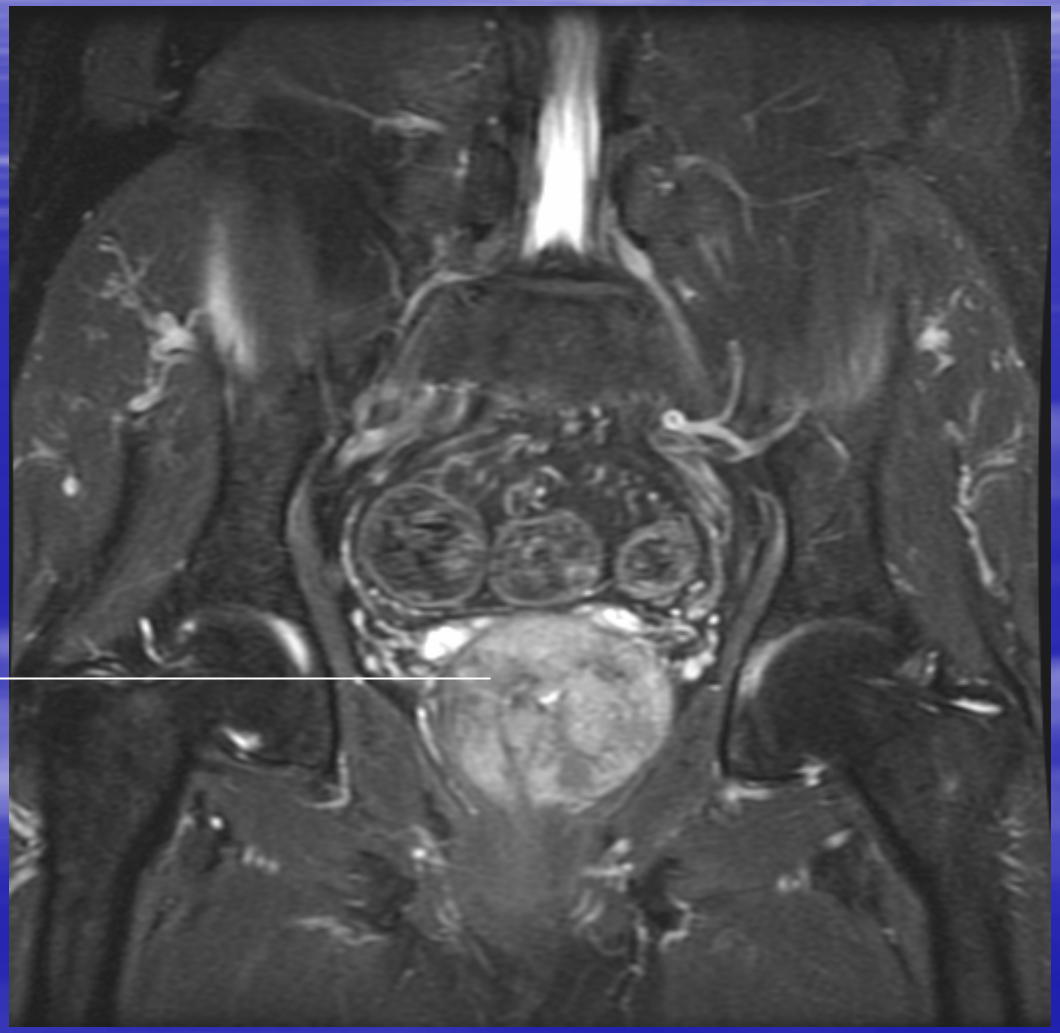
Suspect extracapsule extension

T1W
FSPGR
coronal



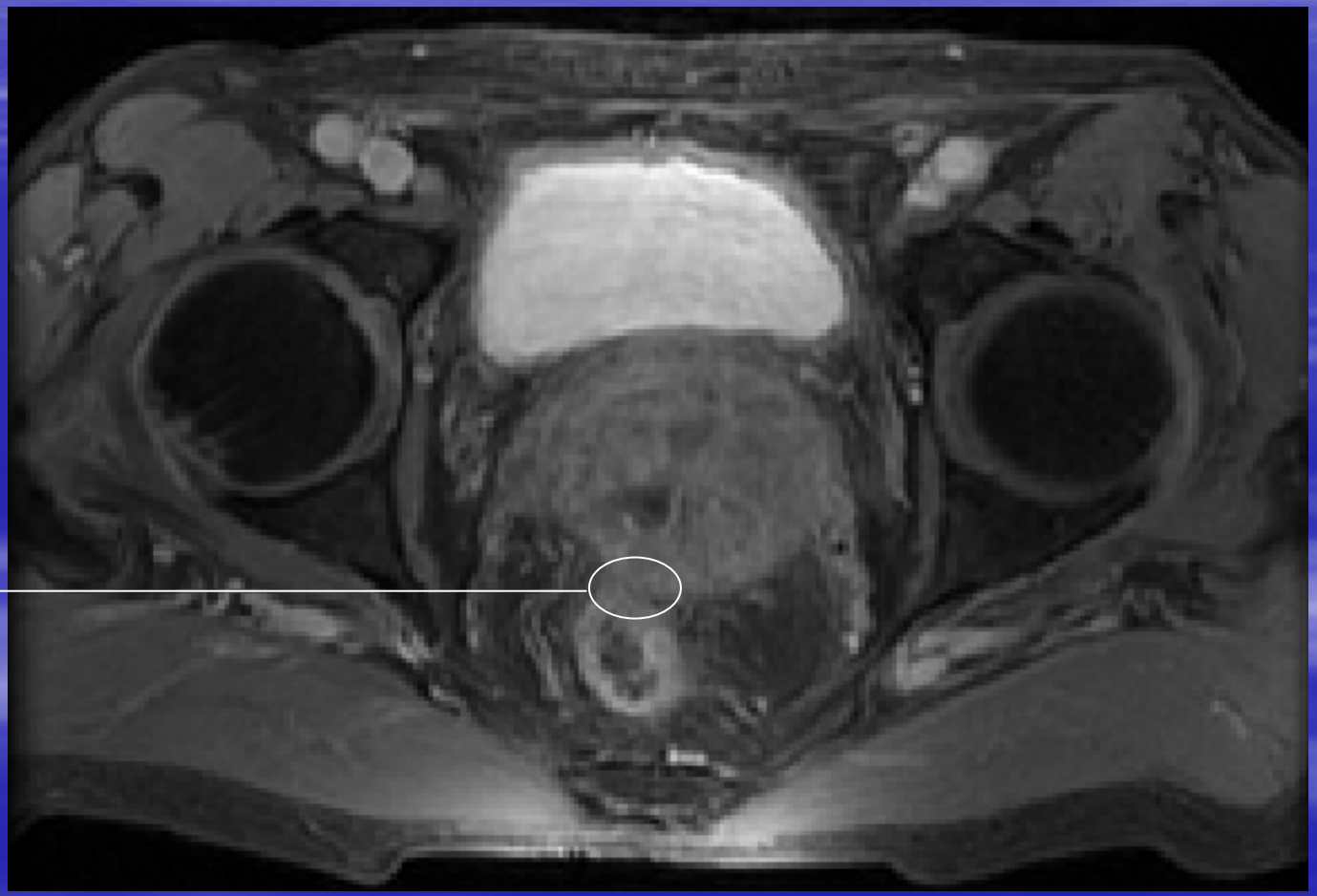
Low signal intensity prostatic mass

T2W
FSE
coronal



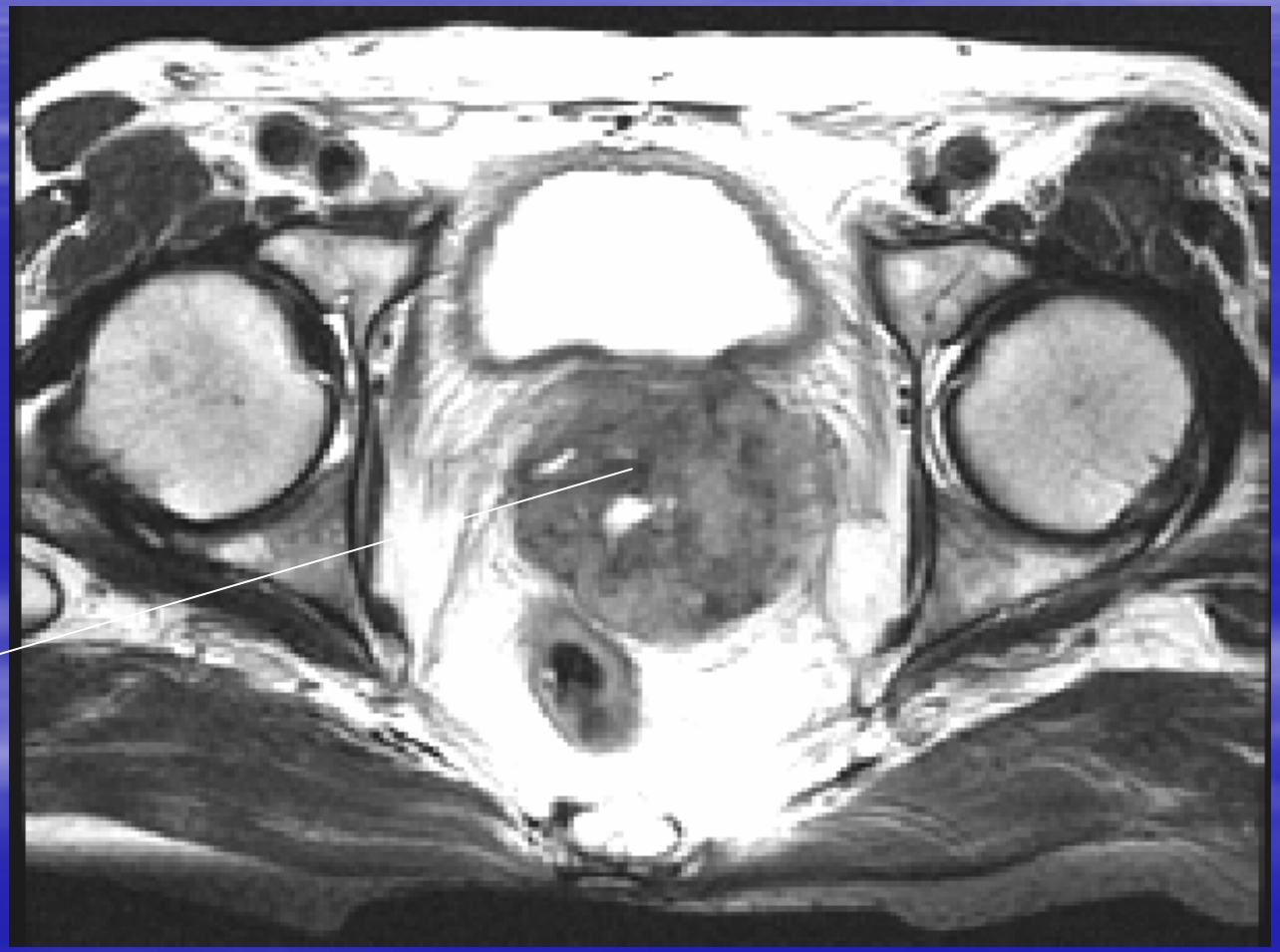
High signal Intensity prostatic mass with focal low attenuation

T1W
FSPGR
axial



R/O rectum invasion

T2W
FSE
Axial



Heterogenous Appearance — High intensity With focal Low intensity

Differential Diagnosis

- *Prostate adenocarcinoma*
  - TRU : hypoechoic in the peripheral zone.
  - MRI :
    - T1W - No intraprostatic pathology is displayed
    - T2W - Low signal intensity in the hyperintense peripheral zone

- *Comedocarcinoma*
  - TRU -- hypoechoic lesions that contained multiple small hyperechoic foci.
- *Mucinous Carcinoma*
  - The size of the gland lumens is increased
  - Mucoid secretions raised the overall T2 signal.
- *Squamous Carcinoma*
  - bony metastases are usually osteolytic

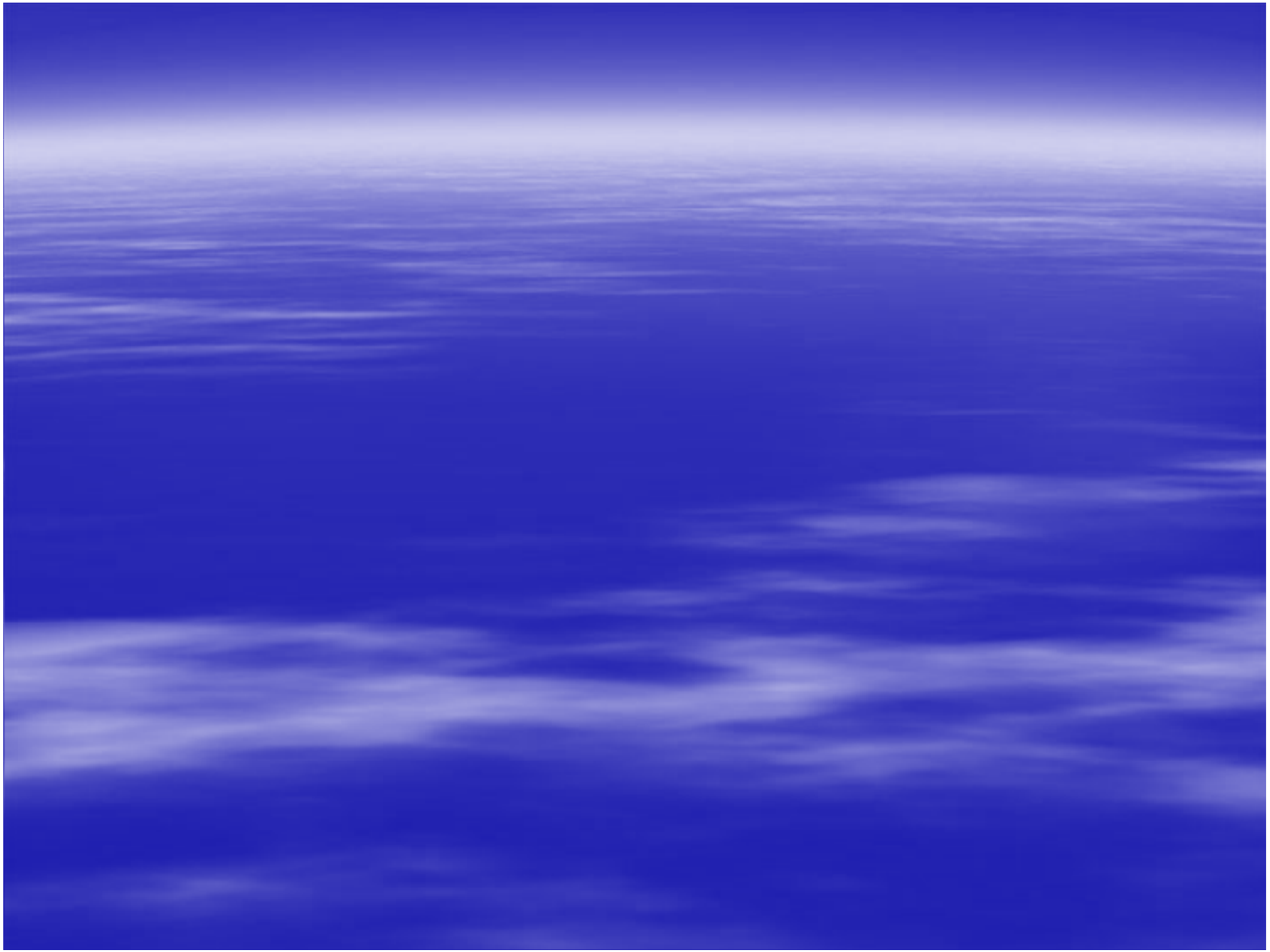
- *Rhabdomyosarcoma* –
  - CT –
    - Heterogeneous attenuation. Invasion.
    - Calcification is rare
  - MRI –
    - Tumor from central area of the prostate.
    - Enhance heterogeneously
    - T2W : well-defined low-signal-intensity pseudocapsule

- *Cystosarcoma Phyllodes*
  - Cystic spaces within the tumor
  - A large, relatively noninvasive prostatic mass
- *Malignant Lymphoma*
  - US -- large hypoechoic masses within both the central and peripheral zones in a young man.
  - CT -- homogeneous soft tissue masses.
  - MRI -- involvement of the bone marrow

- *Prostate Abscess*
  - TRU :
    - Hypoechoic zone with septation or internal echoes at TZ.
    - Less easily definable during initial phases.
    - Occasional perilesional halo.
    - High perilesional vascularity detect by Doppler.
  - CT :
    - Single of multiple hypointensity lesion.
    - Perilesional hyperintensity.

Surgical Treatment

- 94/12/09 : LPS radical prostectomy
  (No rectum involvement)
- Pathology :
  - spindle cells with mild to moderate pleomorphism, frequent mitoses, and prominent tumor necrosis.
  - vimentin (strongly +), CD34 (strongly +), CD117 (strongly +), smooth muscle actin (weakly +), S-100 (-), CK (-), PSA (-), PR (-), ER (-).
  - Pathology diagnosis : GIST (more favor) or Prostatic stromal sarcoma.



Discussion

GISTs

Gastrointestinal Stromal Tumors

Introduction

- The most common mesenchymal neoplasm of the gastrointestinal tract
- From primitive stem cells resemble the native KIT-positive gut pacemaker cell or interstitial cell of Cajal.
- Expression of KIT (CD117), a tyrosine kinase growth factor receptor.
- KIT is important to distinguish GISTs from other mesenchymal neoplasms such as leiomyomas, leiomyosarcomas, schwannomas, and neurofibromas.

Introduction

Location	No.
Esophagus	53
Stomach	524
Small bowel	252
Duodenum	45
Jejunum	68
Ileum	33
Unspecified	106
Large bowel	108
Cecum	2
Colon	37
Sigmoid	15
Rectum	54
Other	67
Peritoneum	7
Mesentery	7
Omentum	53

Am J Surg Pathol 1999; 23:82–87

Introduction

	Mean size (cm)	Median size (cm)	Mean MI	Median MI
Esophagus	3.9	2.5	5.0	0.0
Stomach	6.7	5.0	10.3	3.0
Small bowel	7.1	6.0	12.9	3.5
Large bowel	5.5	4.0	15.8	5.0
Omentum/peritoneum/mesentery	11.3	10.0	18.4	8.5

* Mitotic index (MI) is given as mitotic figures per 50 high powered fields.

Am J Surg Pathol 1999; 23:82–87

GISTs from Prostate

– Case report : *Urology. 2005 Feb;65(2):388*

- Clinical presentation :
  - 49 y/o man with acute urinary retention
  - One transient episode of dysuria
  - Lost 5 kg in 1month.

GISTs from Prostate

- Laboratory tests :
  - Elevated white blood cell count and CRP.
  - All other values were normal.
  - Prostate-specific antigen was 1.36 ng/mL

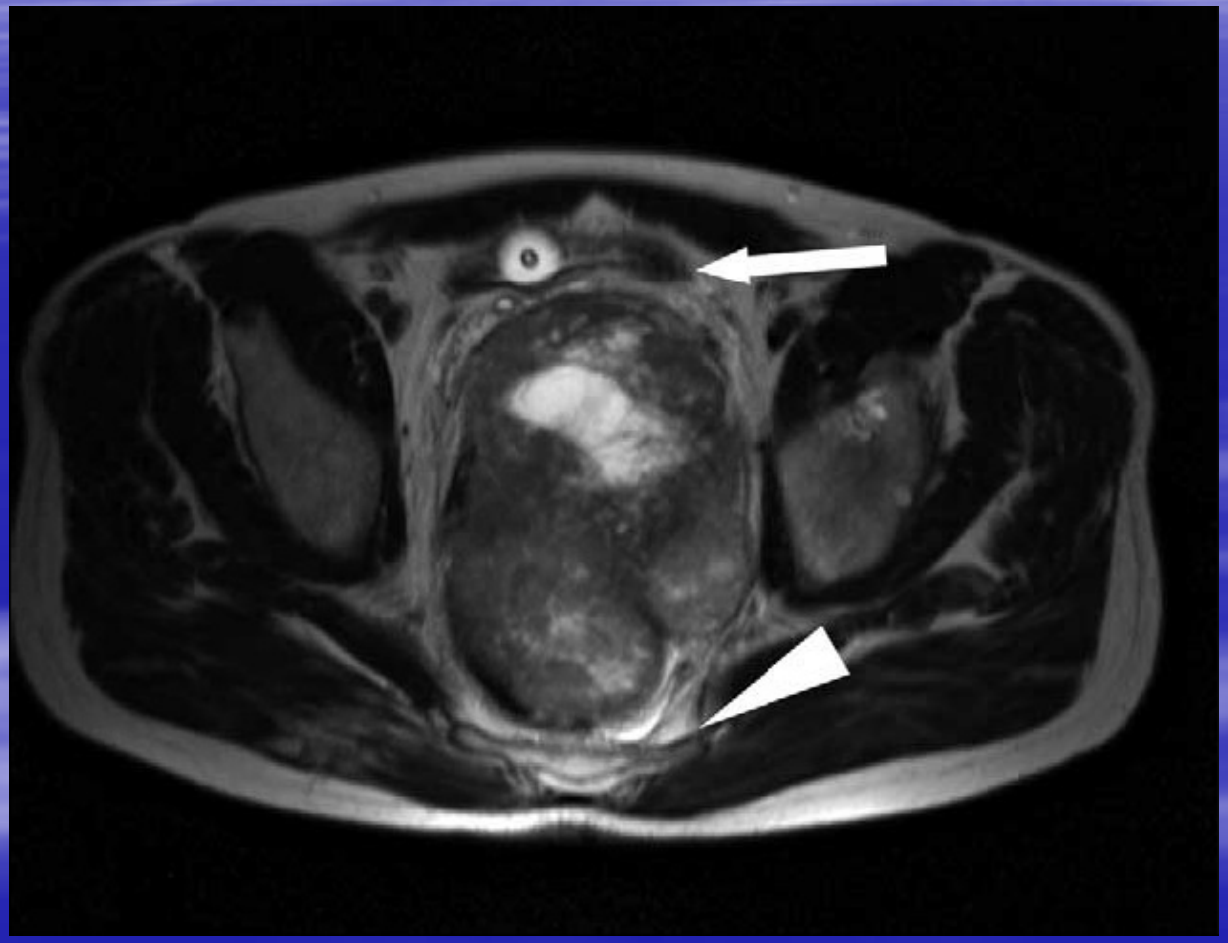
GISTs from Prostate

- Imaging :
  - TRU :
    - solid mass with focal liquefaction in prostate
    - Mass was isolated from surrounding structures.
  - CT & MRI:
    - The mass not involved the surrounding structures.
    - Multiple liver metastasis.

GISTs from Prostate

Well-defined
Encapsulated
Prostatic tumor

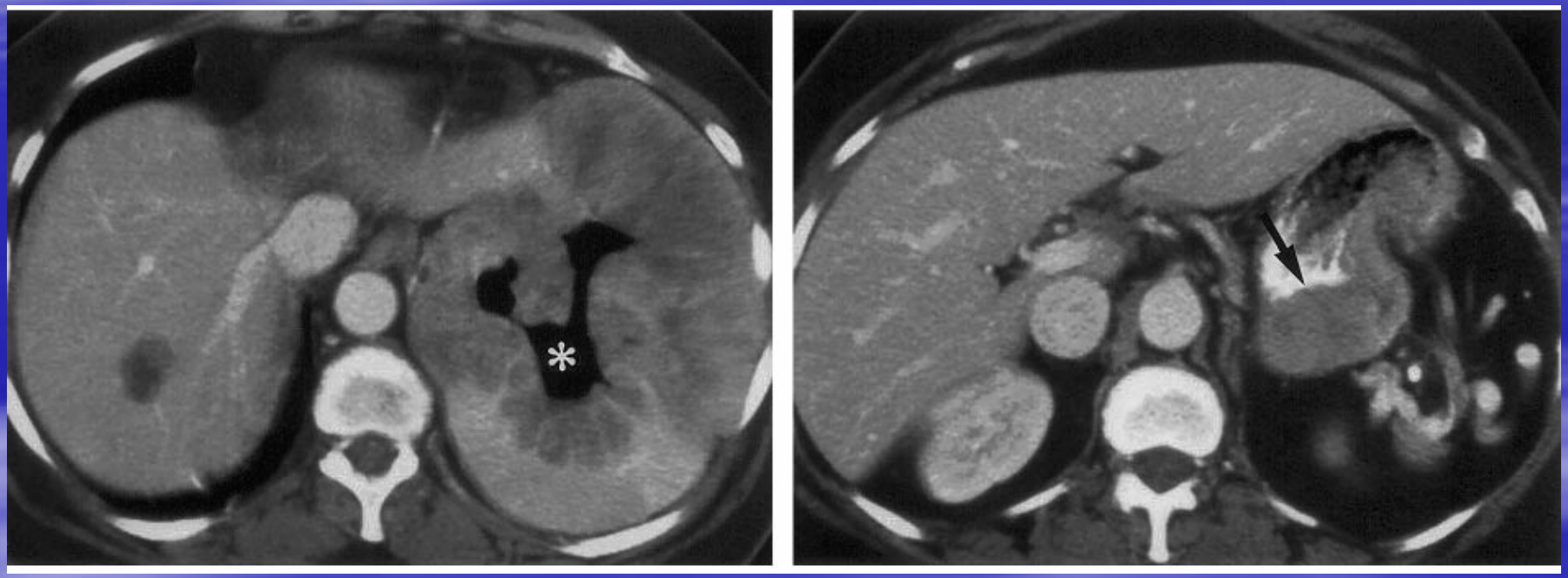
GISTs from Prostate



Huge heterogenous mass Compressing Bladder anteriorly And rectum posteriorly

Imaging of stomoch GIST

- CT



  - Subdiaphragmatic cavitary mass of heterogeneous attenuation. The cavity (*) is air-filled. Liver meta (+)

Imaging of stomoch GIST

- CT

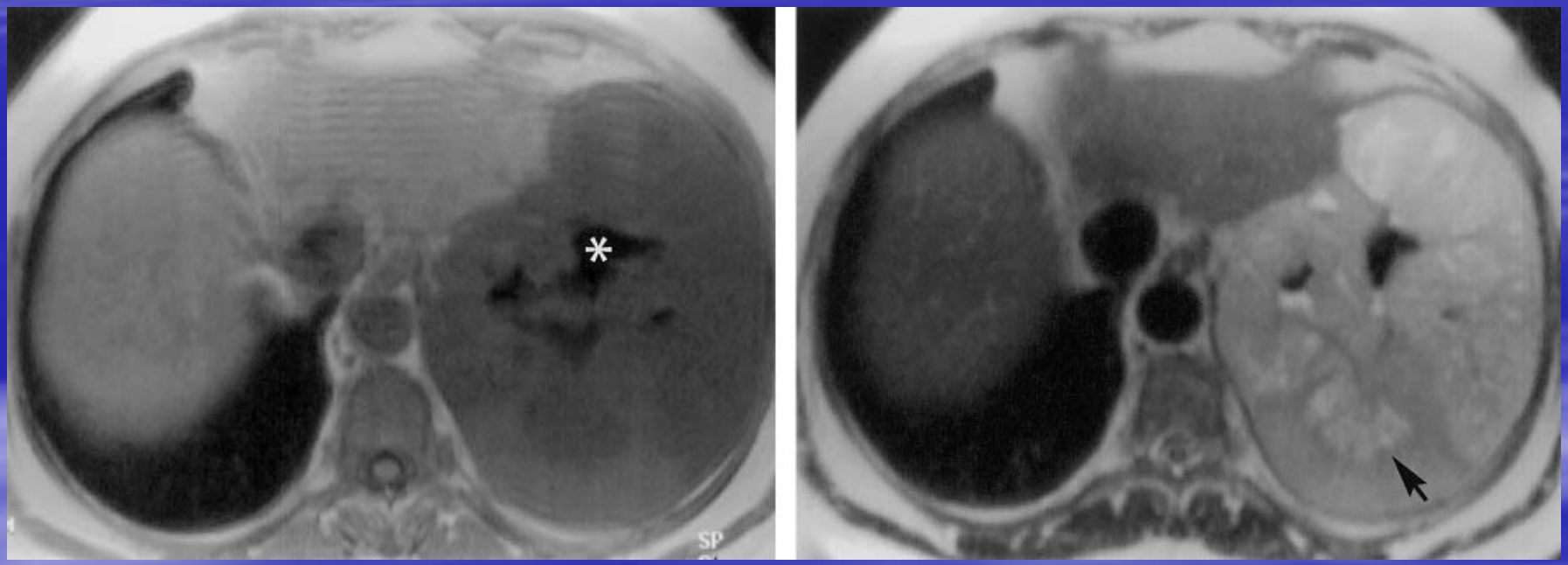
  - Central areas of low attenuation correspond to hemorrhage, necrosis, or cyst formation

Imaging of stomoch GIST

- MRI
  - Low signal intensity on T1-weighted images,
  - High signal intensity on T2-weighted images,
  - Enhance after administration of gadolinium.
  - Hemorrhage within tumor vary from high to low signal intensity on both T1W and T2W images, depending on the age of the hemorrhage.
  - MRI is useful in determining the organ of origin and the relationship of the tumor to other organs and major blood vessels.

Imaging of stomoch GIST

- MRI



  - Focal high signal intensity within mass -- hemorrhage (arrow).

Treatment of GIST

- Surgical resection for the primary disease
- Conventional systemic and intraperitoneal chemotherapy, arterial chemoembolization, surgery, and irradiation have been ineffective in treating metastatic and recurrent disease.
- Imatinib (STI-571, Gleevec) targets the overactive tyrosine receptor c-kit found on all GIST cells, leading regression of metastatic lesions.

Prognosis factor

- Tumor size
- Mitotic rate
- Anatomic site

  (best : esophagus ; worse : small bowel)
- Recurrence indicated poor prognosis

  - But a small number of GISTs recur or metastasize despite a histologically benign appearance (ie, small size and absence of mitoses or low mitotic rate).

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