Renal Tumors

By
Assist. Prof. Ziad H. Abd
Consultant Urologist
Department of Surgery
Anbar Medical College

Renal Tumors

* Classification of Renal tumors:

I. Benign tumors:

- Cortical adenoma.
- Oncocytoma.

II. Malignant tumors:

- Renal cell carcinoma.
- Wilms tumor.

Renal adenoma : accidentally discovered & can not be differentiated from carcinoma and should be treated as cancer .

- ***Renal Oncocytoma*** : well encapsulated with central stellate scar
- grade 1
- grade 2
- grade 3 --- nuclear atypia

the diagnosis is pathological ;

it is premalignant & / or associated with other malignancies .

* Angiomyolipoma

(renal hamartoma) : rare benign tumour.

* U/S & CT scan:-are diagnostic due to high fat content that is shown as

*High intensity lesion on U/S

& negative density (- 20 to – 80 HF) on CT scan.

*The management is follow up if bleeds or size increase == surgical treatment by partial nephrectomy or embolization .

Renal cell carcinoma : RCC

(Adenocarcinoma of kidney ,hypernephroma ,clear cell carcinoma , alveolar carcinoma)

3 % of adult cancer

Aetiology :

-- cigarette smoking is the only proved risk factor .

-- structural changes of chromos. 3 in both sporadic & hereditary forms .

pathologically it originates from proximal renal tubules.

Grossly == yellow to orange due to lipid content .

Histopathology == shows mixed adenocarcinoma containing clear cells granular cells & occasionally sacromatoid appearing cells .

Spread ==direct spread through the renal capsule or direct extension into renal veins .

The most common site distant metastasis is the lung , liver , bone , lymph nodes and opposite kidney .

Tumor grades are 4 grades the highest the grade the worst prognosis .

Tumor staging :-

Stage I – confined within the kidney parenchyma .

Stage II - = = gerota fascia (including the adrenal) .

Stage IIIA- involves main renal vein or IVC .

Stage IIIB- = regional lymph nodes .

Stage IIIC = both local vessels & L.N .

Stage IV A - = adjacent organs (colon , pancreas).

Stage IV B - distant metastasiS .

Clinical findings :-

Mostly asymptomatic & discovered accidentally during imaging studies

A – symptoms & signs :+ gross hematuria
+ flank pain
+ palpable mass
+ metstatic symptoms as cough dyspnea ,convulsion , bone pain .

B – paraneoplastic syndrome :

+ erythrocytosis : due to increase erythropoitin or renal hypoxia .

+ hypercalcemia : = parathyroid hormone related peptide secretion .

+ hypertention : = increase rennin(refractory to drugs & respond after nephrectomy) .

+non metastatic hepatic dysfunction (stauffer syndrome) due to hepatotoxic product of tumour.

If nephrectomy fails to correct the syndrome === residual tumour .

C – laboratory findings

+ anemia = normochromic (of chronic disease)

+ GUE = hematuria .

+ ESR elevated

+ those of paraneoplastic syndrome.

D – radiological findings:

U/S =can differentiate simple renal cyst from renal tumour.

IVP = show calcifications & function of kidney .

CT scan = method of choice , more sensitive and more accurate , tumour shown as :

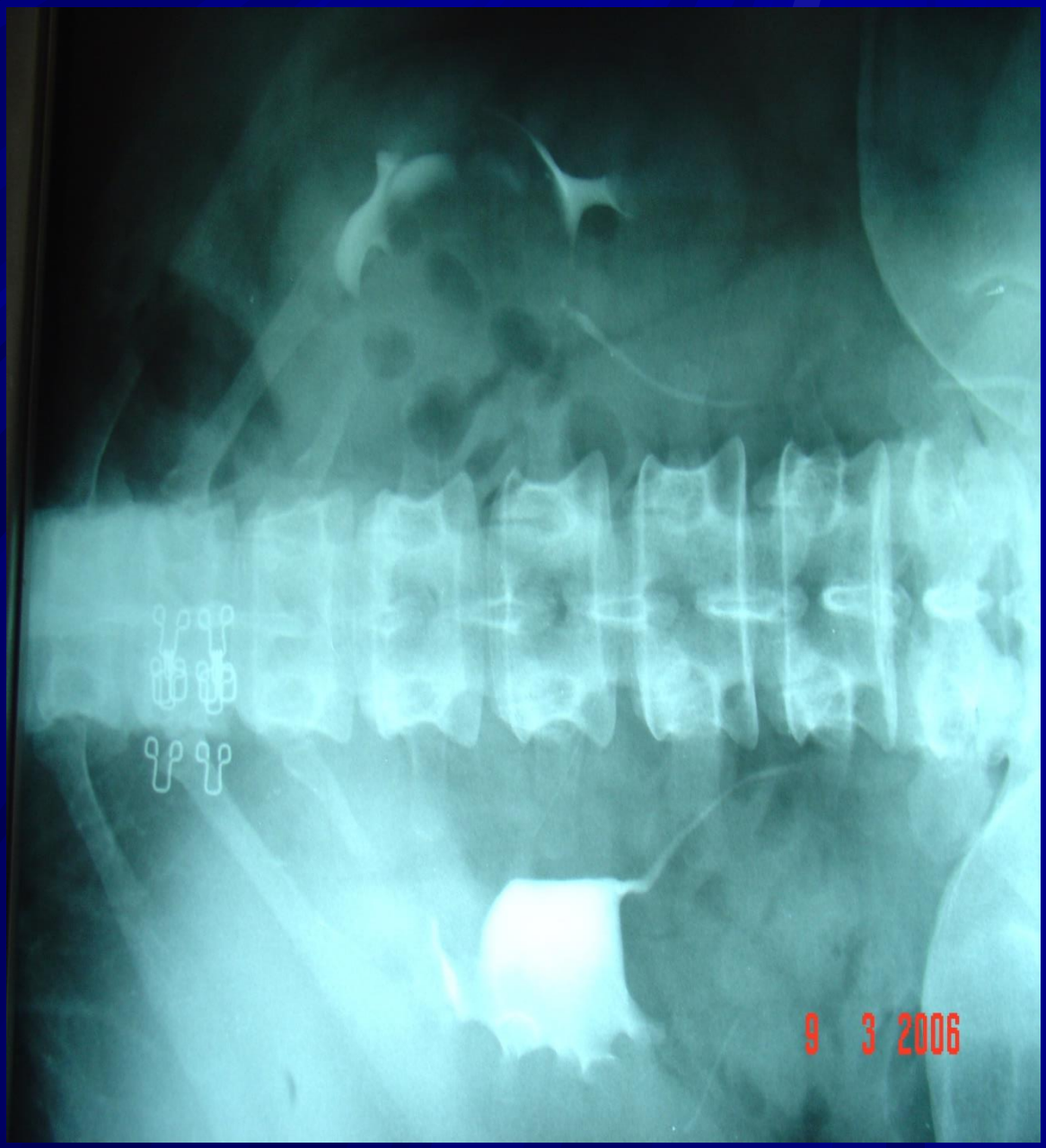
1 - enhanced with contrast media .

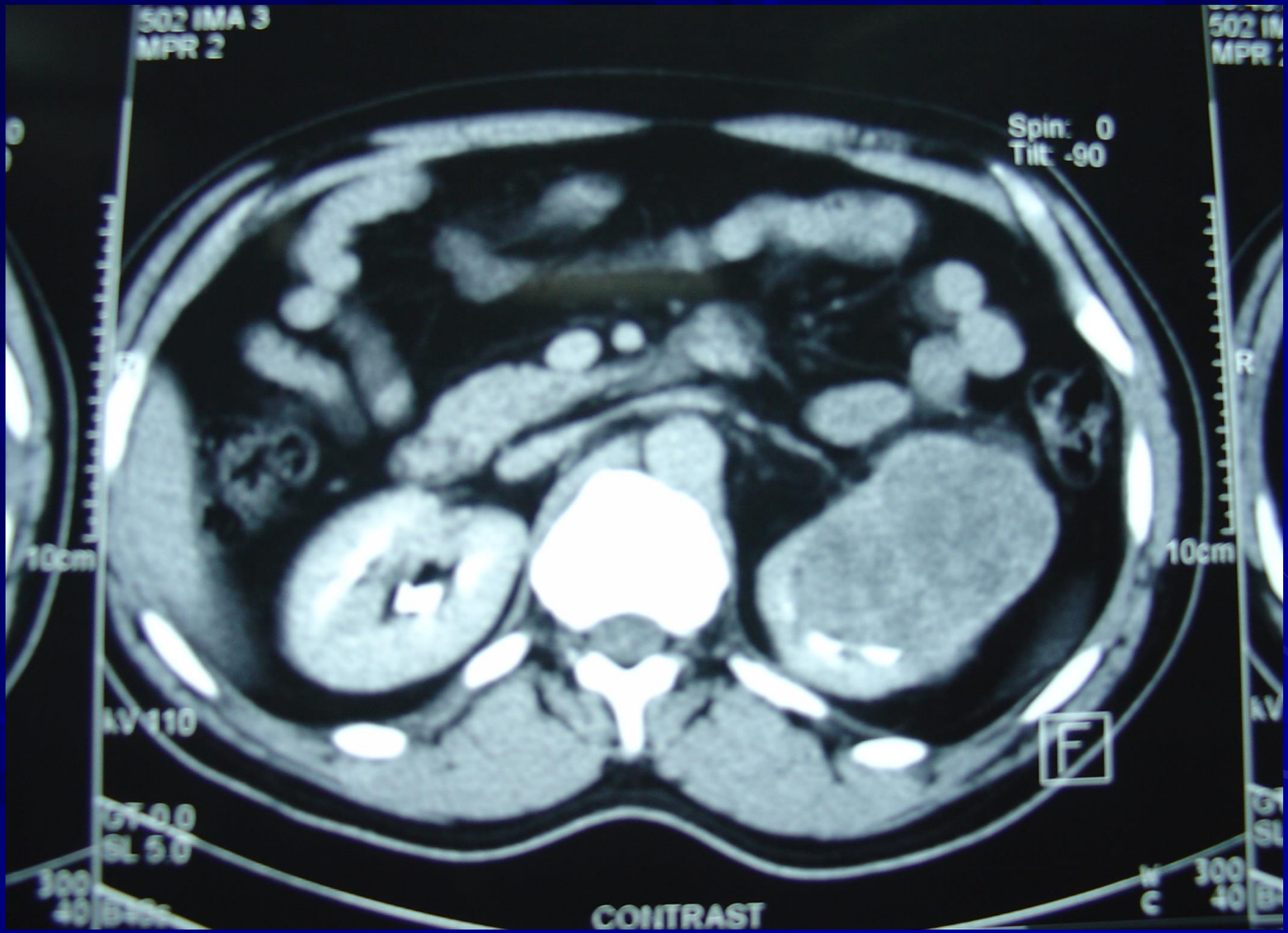
2 – amputation of collecting system .

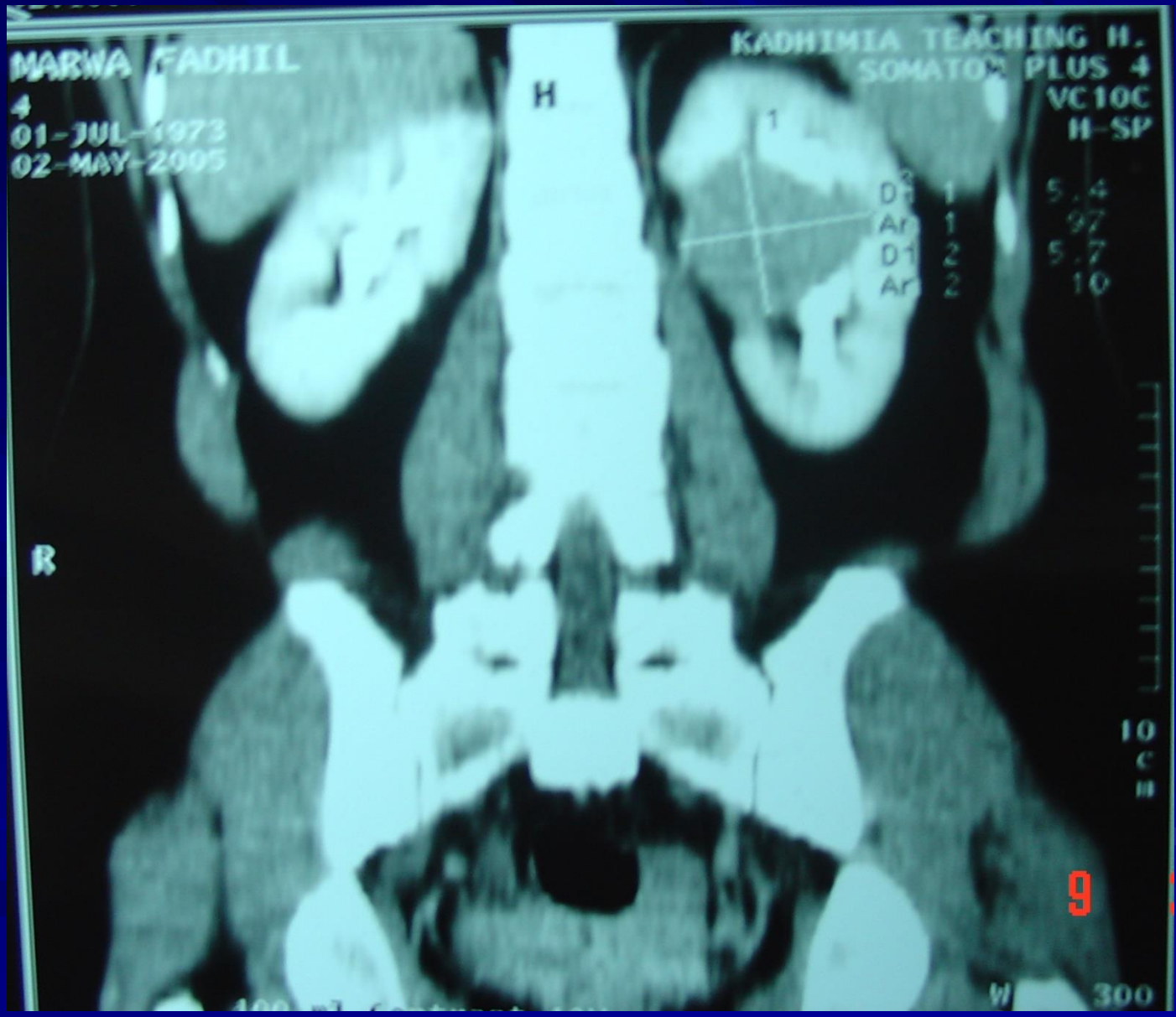
3 – calcification .

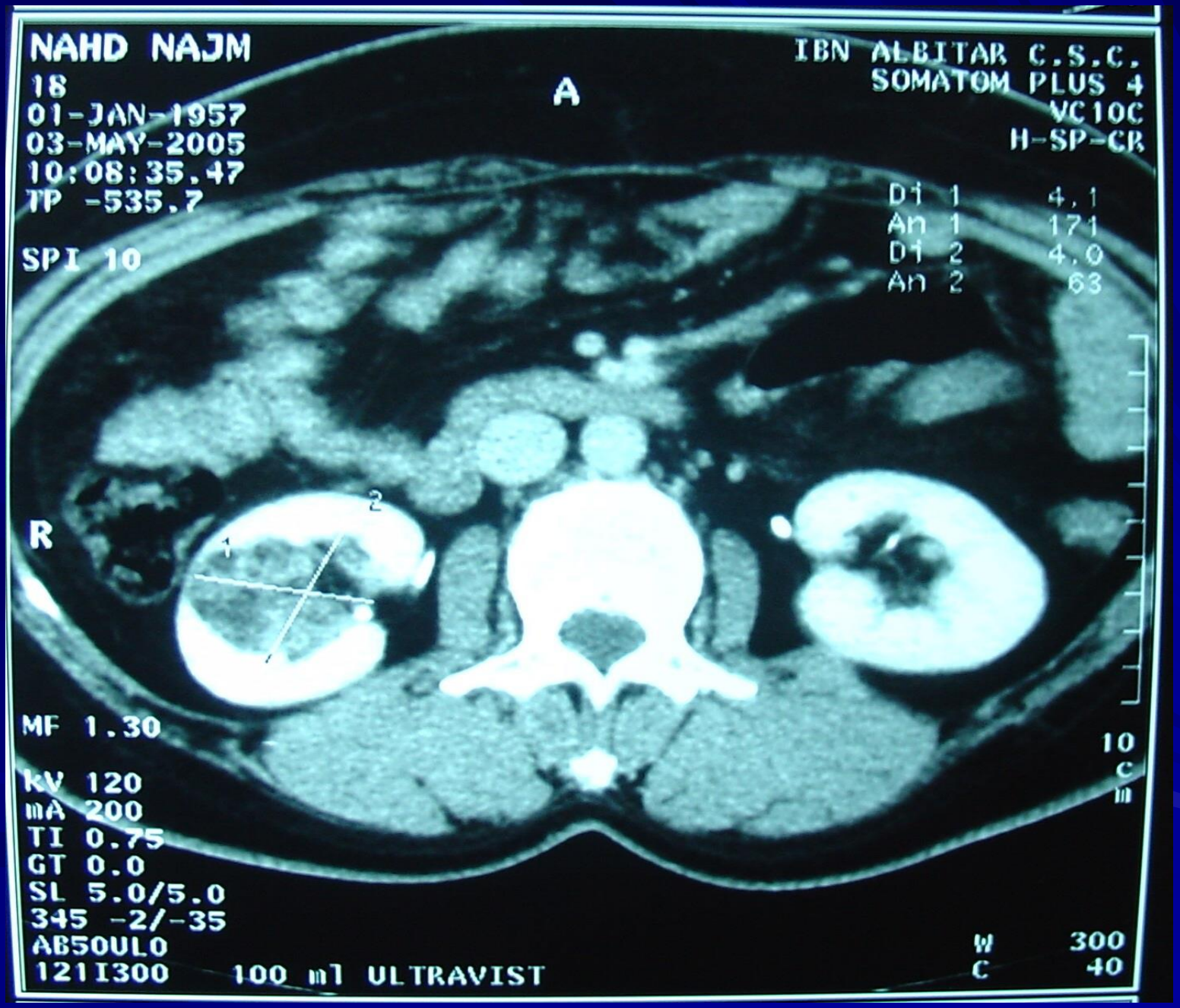
4 – ill defined border .

5 - lymph node enlargement.


9 3 2006


502 IMA 3
MPR 2
Spin: 0
Tilt: -90
10cm
10cm
kV 110
F
CONTRAST


MARWA FADHIL
4
01-JUL-1973
02-MAY-2005
KADHIMIA TEACHING H.
SOMATOM PLUS 4
VC10C
H-SP
H
R
10 cm
9
W 300


NAHD NAJM
18
01-JAN-1957
03-MAY-2005
10:08:35.47
TP -535.7
SPI 10
A
IBN ALBITAR C.S.C.
SOMATOM PLUS 4
VC10C
H-SP-CR
D1 1 4.1
An 1 171
D1 2 4.0
An 2 63
R
1
2
MF 1.30
kV 120
mA 200
TI 0.75
GT 0.0
SL 5.0/5.0
345 -2/-35
ABSOULO
1211300
100 ml ULTRAVIST
10 cm
W 300
C 40

chest CT or brain CT may be required for metastasis .

Chest X-ray = to exclude pulmonary metastasis .

Renal angiography : of limited role .

Radionuclide imaging = if patient allergic to contrast media

= for bone metastasis .

MRI = superior to CT in assessing inferior vena cava involvement.

FNA = is of limited role, to differentiate secondaries to kidney & abscess.

Differential diagnosis

1 – simple renal cyst = U/S can diagnose it (98% accuracy).

2 – renal abscess =fever , pain , leukocytosis . (FNA can differentiate)

3 – angiomyolipoma =hypotense on CT & hyperechoic on U/S.

4 – benign renal mass .

5 – transitional cell carcinoma of renal pelvis .

6 – adrenal cancer = CT +/- MRI .

7 – metastasis to kidney == FNA can be helpful .

Treatment:-

1 – localized disease (I , II , IIIA):

* radical nephrectomy is the primery treatment .==>removal of the kidney & gerota , the adrenal , proximal half of ureter& lymph nodes up to transection of renal vessels (regional LN removal still controversial).

- *embolization (angioinfarction) for
- =large tumour when it is difficult to reach the renal vessels early during nephrectomy .
  = palliative for non resectable tumour .

- * radiotherapy (radioresistant) controversial as adjuvant or neoadjovant

* laparoscopic radical nephrectomy.
* partial nephrectomy for small tumour < 4 cm & in single kidney .

* watchfull waiting : in highly selected patient especially old age < 3 cm

2 – disseminated disease :

* palliative radical nephrectomy for severe hemorrhage , unremitting pain , paraneoplastic syndrome .

* combined nephrectomy & removal of metastatic foci .

* radiotherapy as palliative because it is radioresistant .

* hormonal therapy = not so usefull .

* chemotherapy = not so usefull .

* radioimmunotherapy = promising .

- biological response modifier = promising .