CONTROVERSIAL INDICATIONS FOR LAPAROSCOPIC ADRENALECTOMY

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CONTROVERSIAL INDICATIONS FOR LAPAROSCOPIC ADRENALECTOMY

Large tumors:

- Pheochromocytomas
- Cortical tumors

Metastases

Background

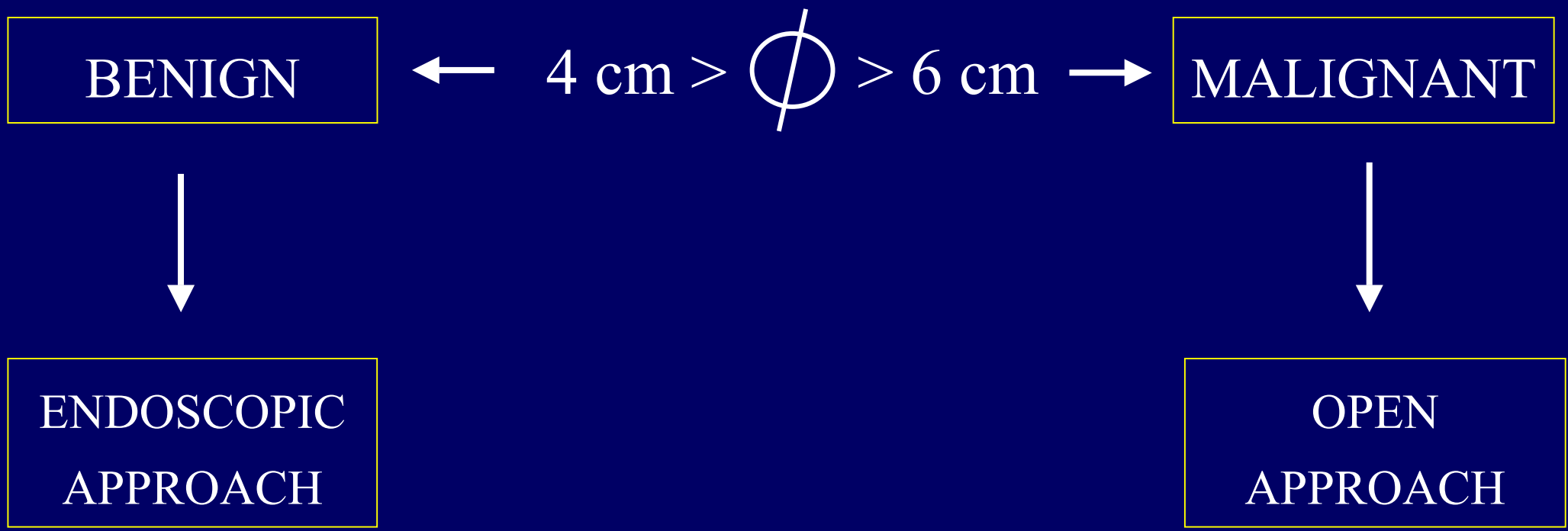
- Laparoscopic adrenalectomy:
  - Less pain / blood loss[1]
  - Less morbidity & shorter hospital stay[2]
  - More rapid return to work[3]

- Procedure of choice:
  - Benign
  - Small secreting adrenal tumours

  - ? Large adrenal tumours

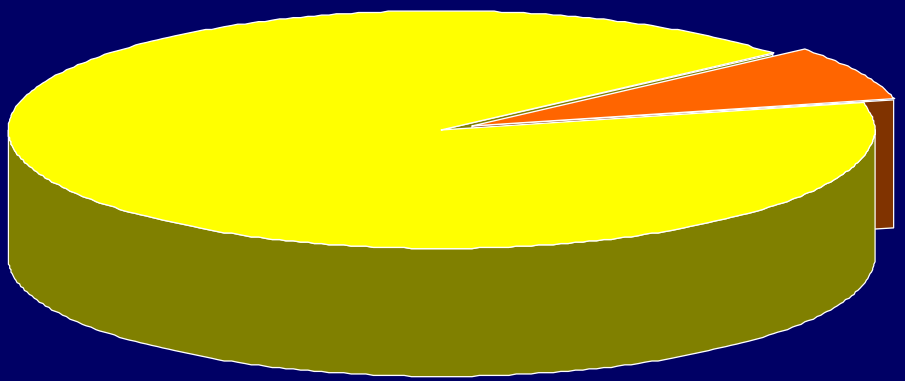
[1]Imai T. *et al Am J Surg* 1999; **178**: 50-3.
[2]Dudley NE, Harrison BJ. *Br J Surg* 1999; **86**: 656-60
[3]Thompson GB *et al. Surgery* 1997; **122**: 1132-6

PRIMARY ADRENAL TUMORS



LAPAROSCOPIC ADRENALECTOMY
TUMORS > 6 cm

Nb :39*
(7.9 %)

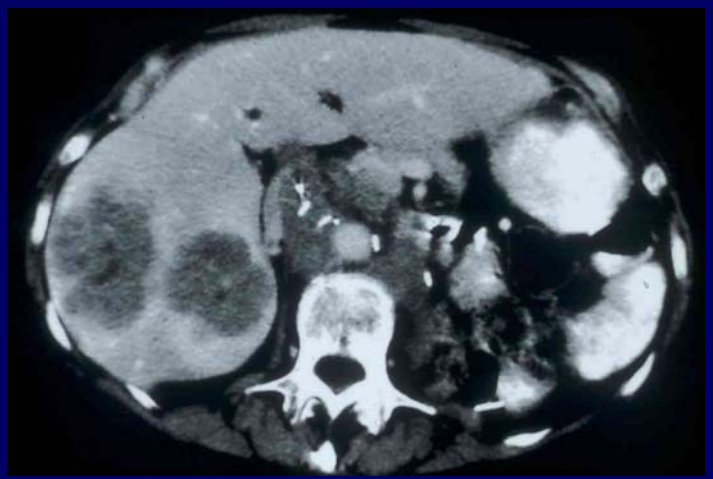


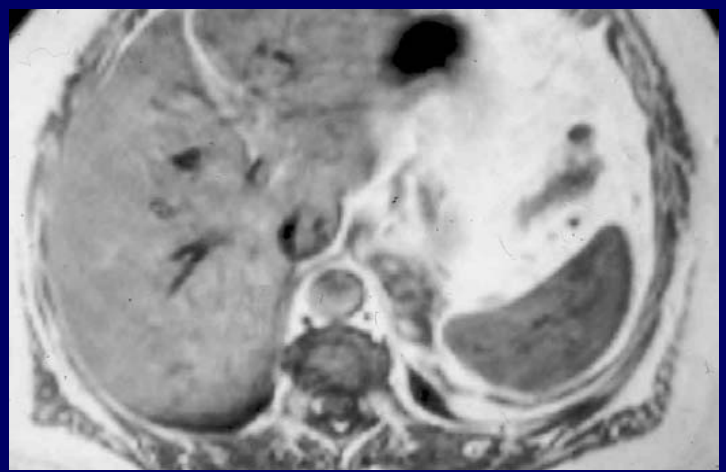
Pheochromocytoma	**16**
Cortical tumors	**23**

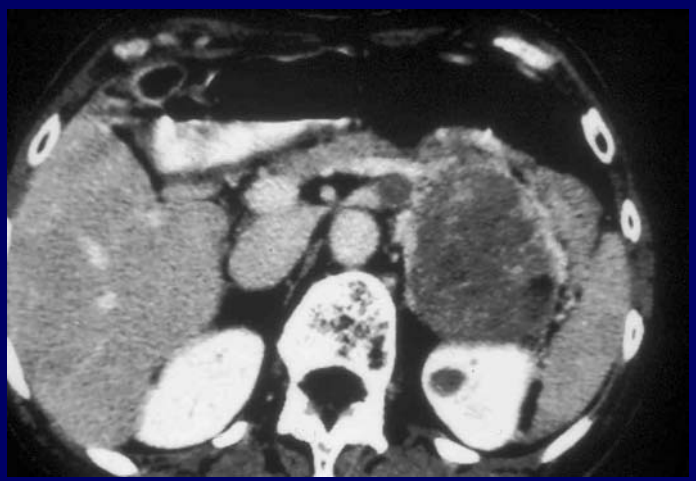
*** Tumors > 6 cm , solid .**

ADRENAL CARCINOMAS

Preoperative demonstration of invasive extra-adrenal carcinoma remains an absolute contra-indication for laparoscopic adrenalectomy.

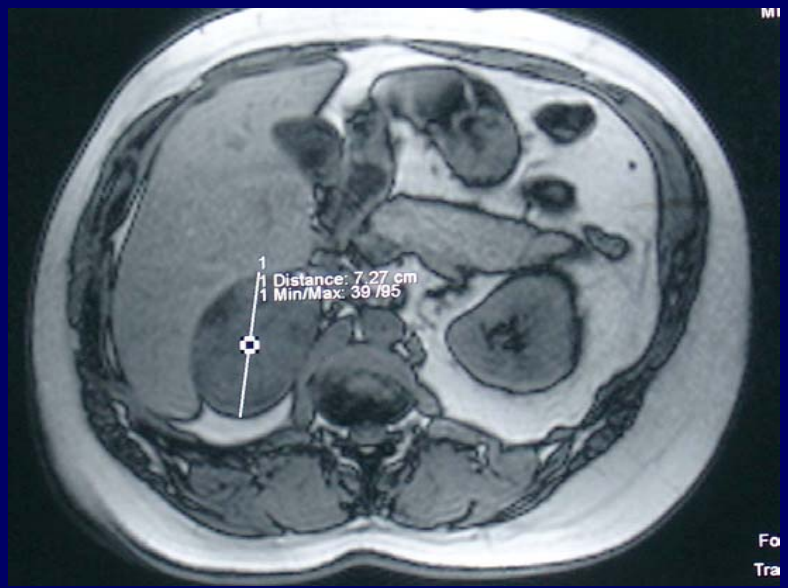


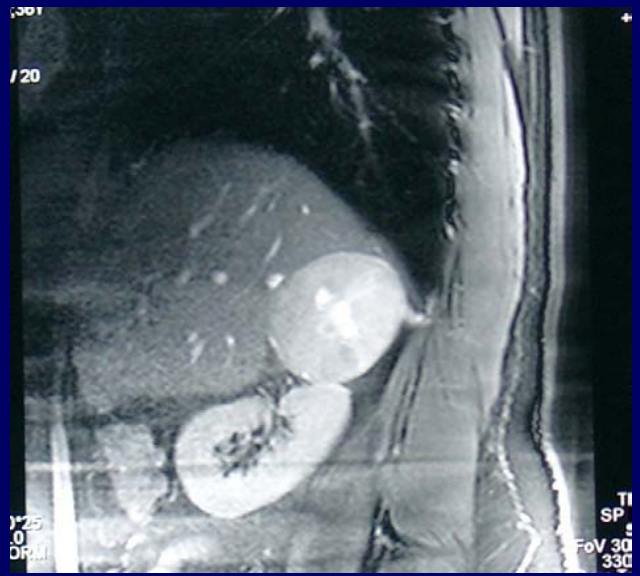


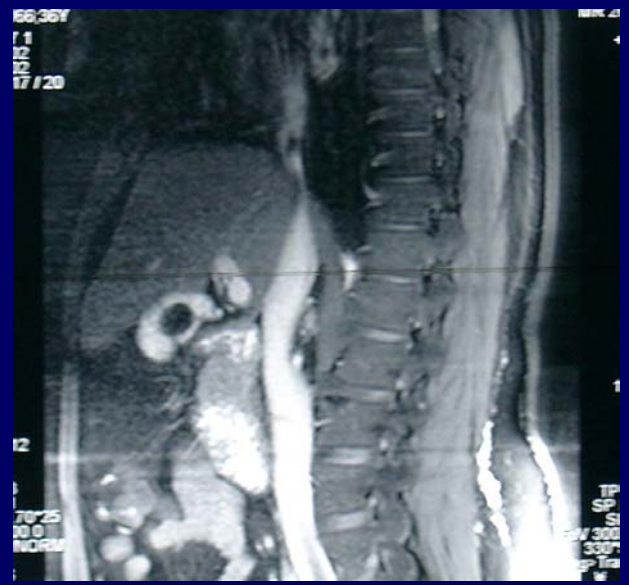


LAPAROSCOPIC ADRENALECTOMY

Should laparoscopic approach be proposed for large and/or potentially malignant adrenal tumours ?





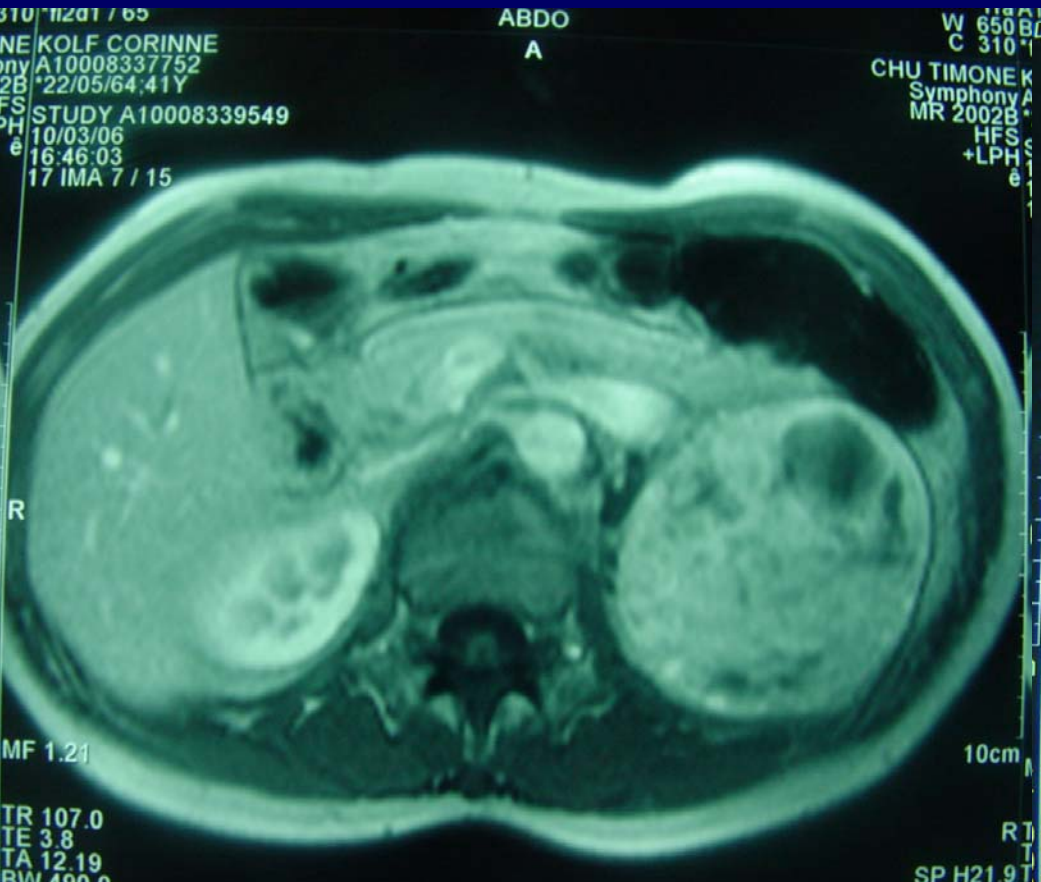


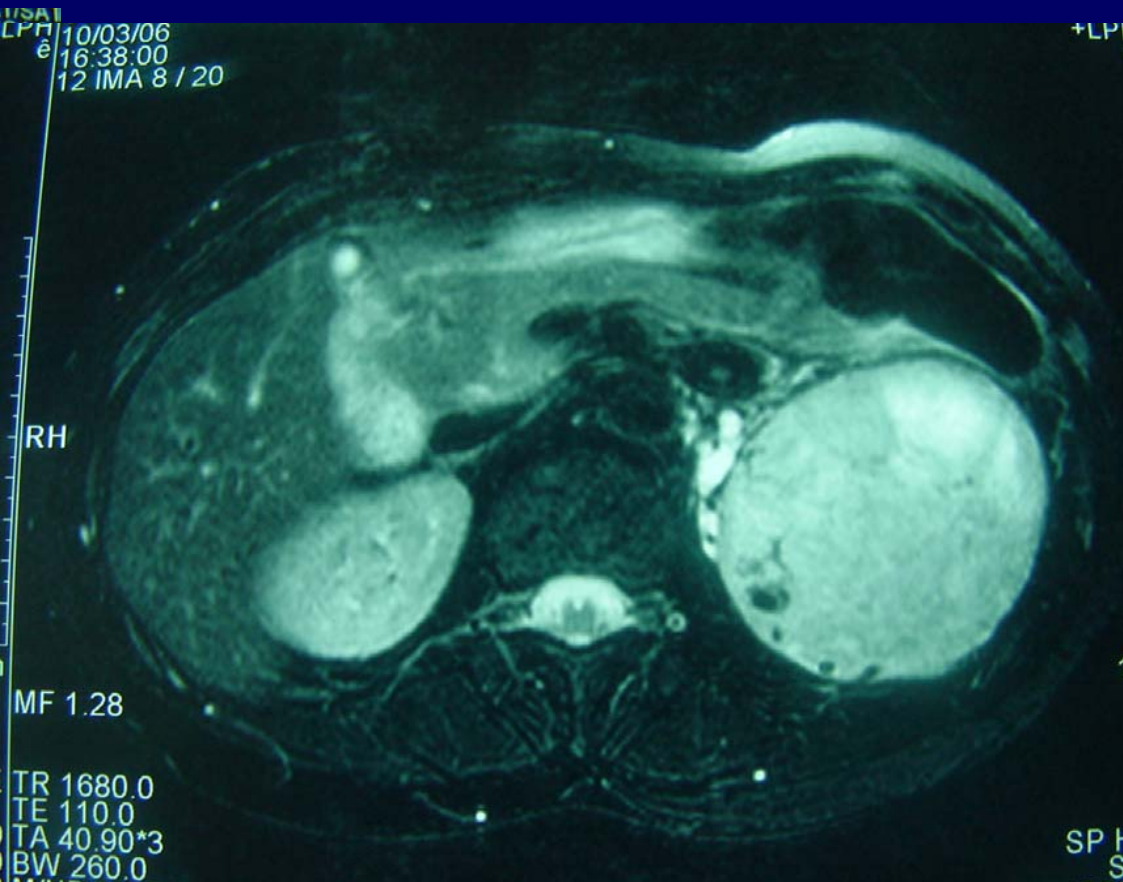
TRANSPERITONEAL OR RETROPERITONEAL ENDOSCOPIC APPROACH ?

TRANSPERITONEAL OR RETROPERITONEAL ENDOSCOPIC APPROACH ?

Transperitoneal approach
Lateral position
3-4 trocars - subcostal area
Dissection : cautery hook, harmonic scapel, ligasure
clips (adrenal vein)
Extraction in plastic bag
Drainage : optional
Vein thrombosis prophylaxis

ENDOSCOPIC ADRENALECTOMY FOR LARGE PHEOCHROMOCYTOMAS





LAPAROSCOPIC ADRENALECTOMY FOR LARGE PHEOCHROMOCYTOMAS

Is endoscopic adrenalectomy a safe procedure ?

- with adequate preoperative blockers
- CO_2 pneumoperitoneum is well tolerated
- laparoscopic versus open : no significant differences in hemodynamic changes and catecholamine secretion

Fernandez-Cruz – World J. Surg. 20, 762-768, 1996

Inabnet – World J. Surg. 24, 574-578, 2000

L.A. FOR LARGE PHEO > 60mm
(16 cases)

• Mean size	76mm
• Mortality	0
• Conversion	0
• Hemodynamic complications	1
• Capsular disruption	2
• Malignancy	0
• Recurrence	0

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L.A. FOR LARGE CORTICAL TUMORS
Predicting malignancy

- Clinical
  - Local symptoms
  - Virilization
- Biochemical
  - Mixed secretion
  - DHEA-S
- Radiological
  - **Size**
  - CT - low attenuation (?benign)
  - MRI - rapid gadolinium enhancement + washout (benign?)
  - NP59
  - PET

L.A. FOR LARGE CORTICAL TUMORS

- Adrenalectomies 565
- L.A. 489
- Solid cortical > 6cm 23

  11 non secreting tumors

  12 secreting tumors

L.A. FOR LARGE CORTICAL TUMORS
Results: Demographics/ Histology

- Mean age 49.9 (22-77) years
- Mean tumour diameter 71mm (60-100)
- Histology
  - 8 cortical adenomas
  - 5 adrenocortical carcinomas
  - 10 indeterminate histology

L.A. FOR LARGE CORTICAL TUMORS
Results: Deaths

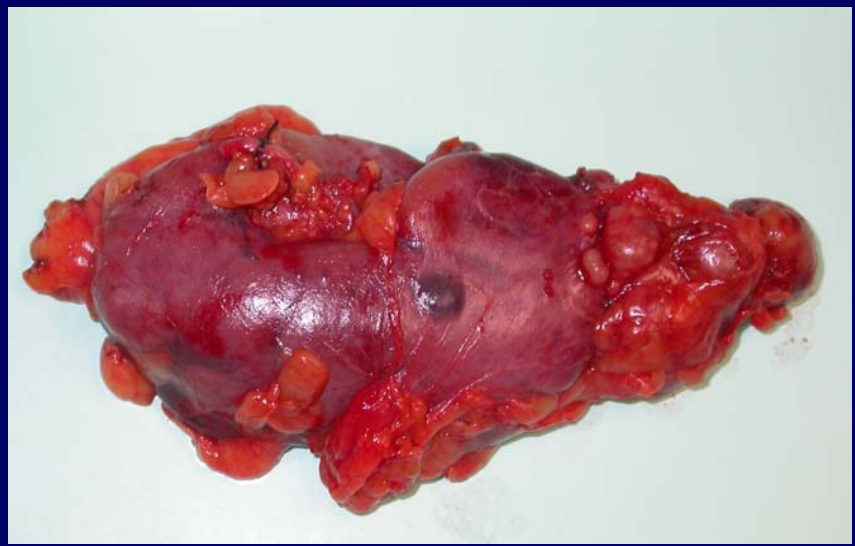
- 2 DNRD
  - 77 female
    - 65mm non secreting tumour “cortical adenoma”
  - 71 female
    - 65mm non secreting tumour “cortical adenoma”

- 2 DRD: 2^{o} liver mets *without local recurrence*:
  - 44 female 10/12
    - 80mm Cushings - “indeterminate histology”
  - 77 female 19/12
    - 70mm Non secreting ACC

L.A. FOR LARGE CORTICAL TUMORS
Results

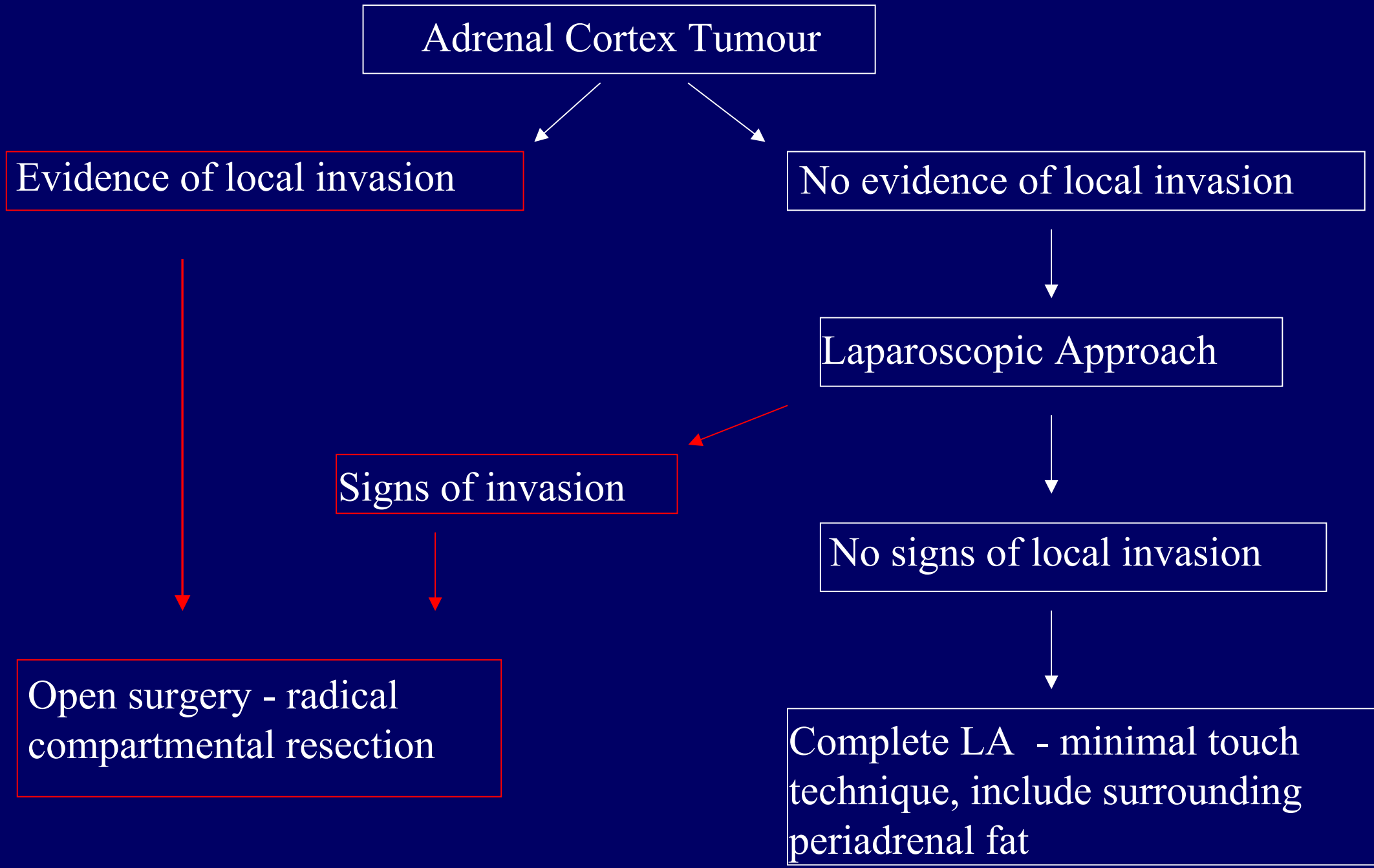
- 1 local recurrence:
  -43 woman, Recurrence at 54 months
  -60mm
  -Cushings,
  "Indeterminate histology"

- 1 local recurrence associated with distant metastases
  - 62 man, Recurrence at 12 months
  -75mm
  -Aldosteronoma
  -Malignant



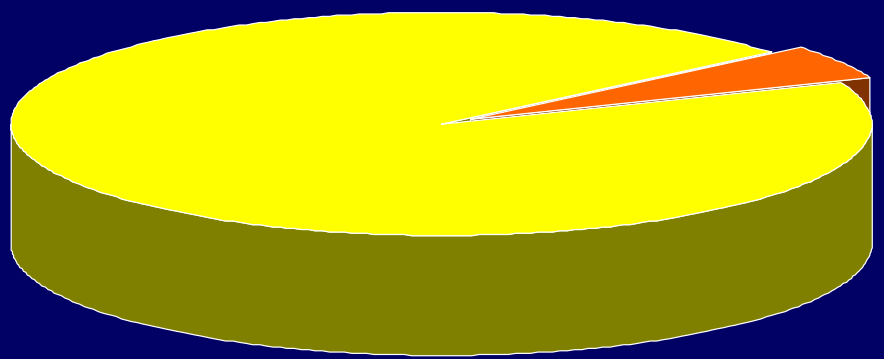
Conclusions

- Laparoscopic adrenalectomy produces acceptable medium term results in adrenal cortex tumours >6cm where there is no pre or intraoperative evidence of malignancy.
- Laparoscopy should be considered an assessment tool as well as therapeutic in the management of large adrenal tumours.


Adrenal Cortex Tumour
Evidence of local invasion
No evidence of local invasion
Laparoscopic Approach
Signs of invasion
No signs of local invasion
Open surgery - radical compartmental resection
Complete LA - minimal touch technique, include surrounding periadrenal fat

LAPAROSCOPIC ADRENALECTOMY FOR METASTASES

Nb :25
(5 %)



Lung	**14**
Melanoma	**4**
Mesothelioma	**1**
Rhabdomyosarcoma	**1**
Colon ADK	**1**
Renal cell	**4**

LA FOR METASTASES

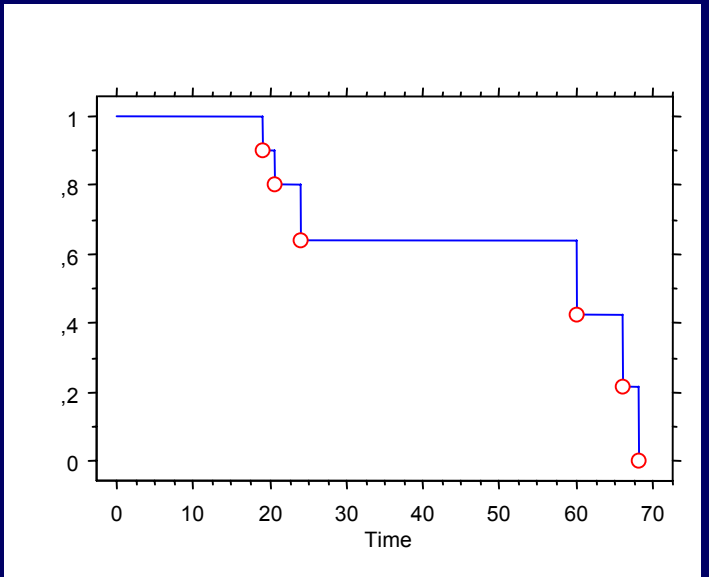
- Synchronous AM (n=15), Metachronous AM (n=9)
- 13/16 patients presented other metastatic sites in their history (controlled at the time of LA)

LA FOR METASTASES

- All patients : lateral, transperitoneal approach
- Conversion 6/25 (24%) (<5% conversion rate)
- Macroscopic complete resection : 75%
- Microscopic complete resection : 56%
- Minor Complications : 4/25
- Hospitalisation : 5 days (3-18)

Follow up (16 patients)

- Observed FU 25 months (1-68 months)
- 5 years O. Survival : 42 % (24.4 months) (KM)
- 8 Patients alive with a mean FU of 35 months
  - 3 without evidence of disease at 60, 24, 19 months after surgery



- **We did not identify any prognostic factors** such as primary tumour, meta/synchromous

Conclusions (1)

- Appropriate evaluation close before surgery :
  - To avoid conversion : loss of the advantages of laparoscopy compared to open approach, and conversion often means incomplete resection
  - To avoid incomplete resection (AM incomplete resection or other uncontrolled metastatic sites)

⇒ Complete and appropriate evaluation using at least **thin cut CT scan and PET scan** performed close to the time of surgery

Conclusions (2)

- When AM matches the « good criteria » for resection (confined to the adrenal gland…), subsequently the AM may be resected by LA in most cases.
- AM which match those criteria are rare…
- AM that would require open adrenalectomy with a curative intent are probably rarer…

Conclusions (3)

- Some factors are usually related to good prognosis…
- In our series, a majority of patients presented synchronous AM or others metastatic sites in their history. Despite these characteristics, survival compared favourably…
- When "classical" favourable factors are absent, patient should not be excluded de facto from a surgical approach
- A patient specific multidisciplinary approach is required.

Conclusions

- If all these conditions are respected, patients may benefit from both surgical resection with the comfort of laparoscopy.

ENDOSCOPIC ADRENALECTOMY

- Invasive adrenal carcinoma is an absolute contra-indication for laparoscopic adrenalectomy
- Whether the laparoscopic approach should be considered for large-volume (>5-6 cm) and potentially malignant adrenal tumors remains debatable
- Endoscopic adrenalectomy may be considered for solitary adrenal metastases in patients in whom a primary carcinoma has been completely resected