Lauma Zariņa, M.D.

10 September 2009

Clinical case presentation

Case history

- 56 years old male
- Admitted urgently to the Pauls Stradins Clinical University hospital in Riga
- Complaints:
  - Progressive weakness, particularly in both legs. Difficulty to stand up from the sitting position
  - Legs' oedema
  - Thirst

Case history

- History of the illness
  - 2 weeks before admission to the hospital visited GP. Elevated glucose level in blood was detected (14-16 mmol/l). Treatments with biguanids (Tab. Metformini 1000 mgx2) was started.
- Past history
  - Arterial hypretension
  - Tuberculosis
  - Operation of spine due to discal hernia
  - Smoker
  - Alcohol
  - No known medication allergies

Physical examination

- General: lying in bed, conscious
- Normostenic
- Vitals: T 36.7; TA 140/80 mmHg, pulss rate 80 times/min, regular, respiratory rate 16 times/min,
- Skin: ruddy face, pale limbs
- Abdomen: soft, non-tender
- Reduced power in the proximal muscles of lower extremities
- Peripheral oedema (on legs)

On admission

Blood

- **WBC 18,9 t (N 4-10);** RBC 4,92 mlj; HGB 156 g/l; PLT 147 t

Biochemistry

- ALAT 29 U/L; ASAT 28 U/L; **GGT – 275 U/l;** Crea – 86 mkmol/l; Na – 141 mmol/l; **K – 1,7 mmol/l !** (Normal 3,5-5,1); **random blood glucose 16,4 mmol/l** (Normal 3,5-6,5)

On admission

Abdominal ultrasound

- Liver – normal size, smooth surface, inhomogenous structure. In both lobes there are **multiple focal mixed echogenicity lesions** till 4,5 cm of size. Dg:Metastasis in liver?

Chest X-ray

- No inflammatory changes in lungs. Peribronhovascular fibrosis. Asimetric multiple calcified nodules localised mostly in both upper lobes. Post infection TB changes.

Summary

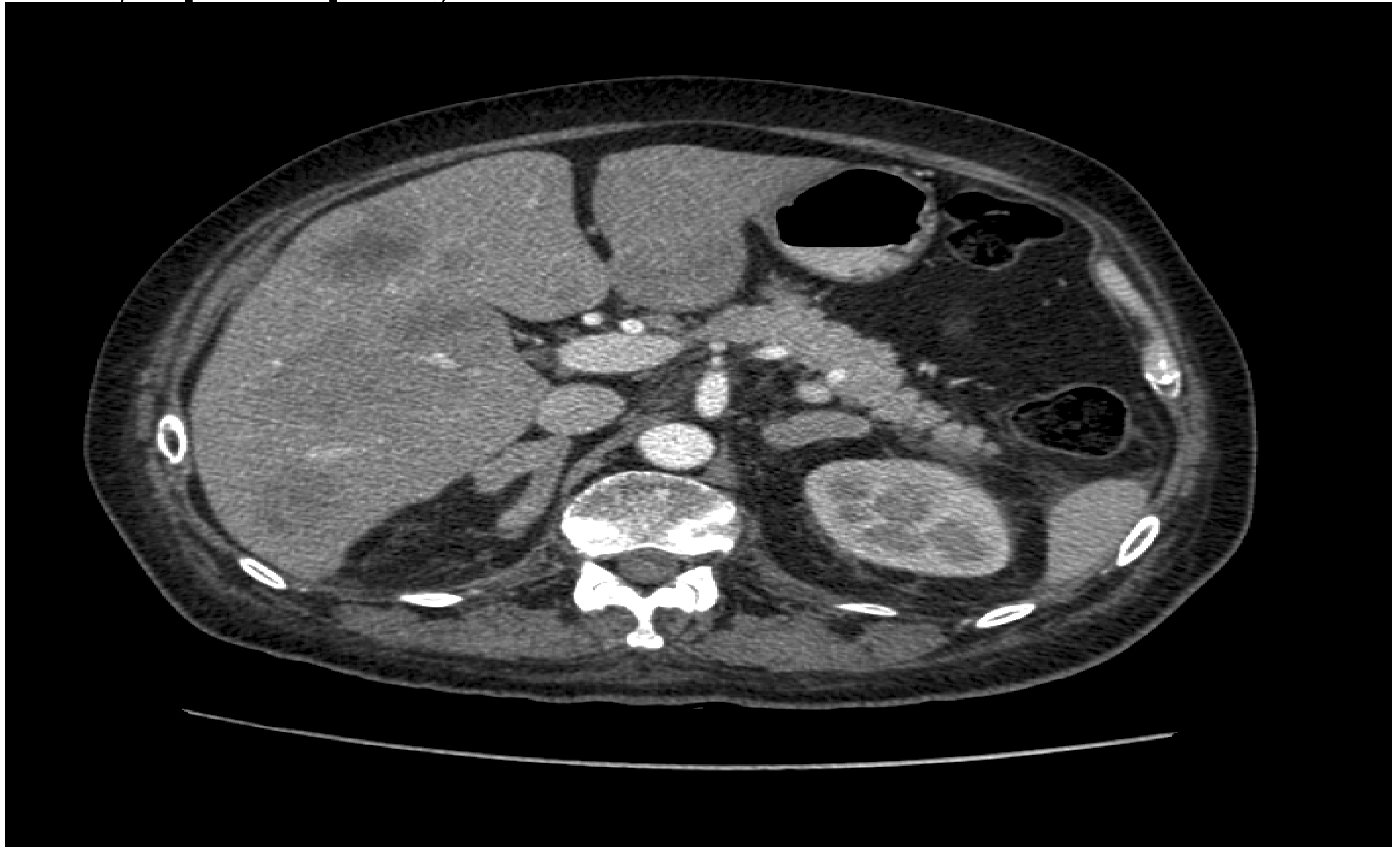
- The patient had glucose intolerance, leucocytosis, hypertension, hypokaliemia
- Weakness
- Abdominal US – Difuse nodules in liver. Metastasis?

- Working diagnosis
  - Diabetes mellitus, newly diagnosed
  - Metastasis in liver? with unknown localization of primary tumor
  - Cushing‘s Syndrome? Ectopic?

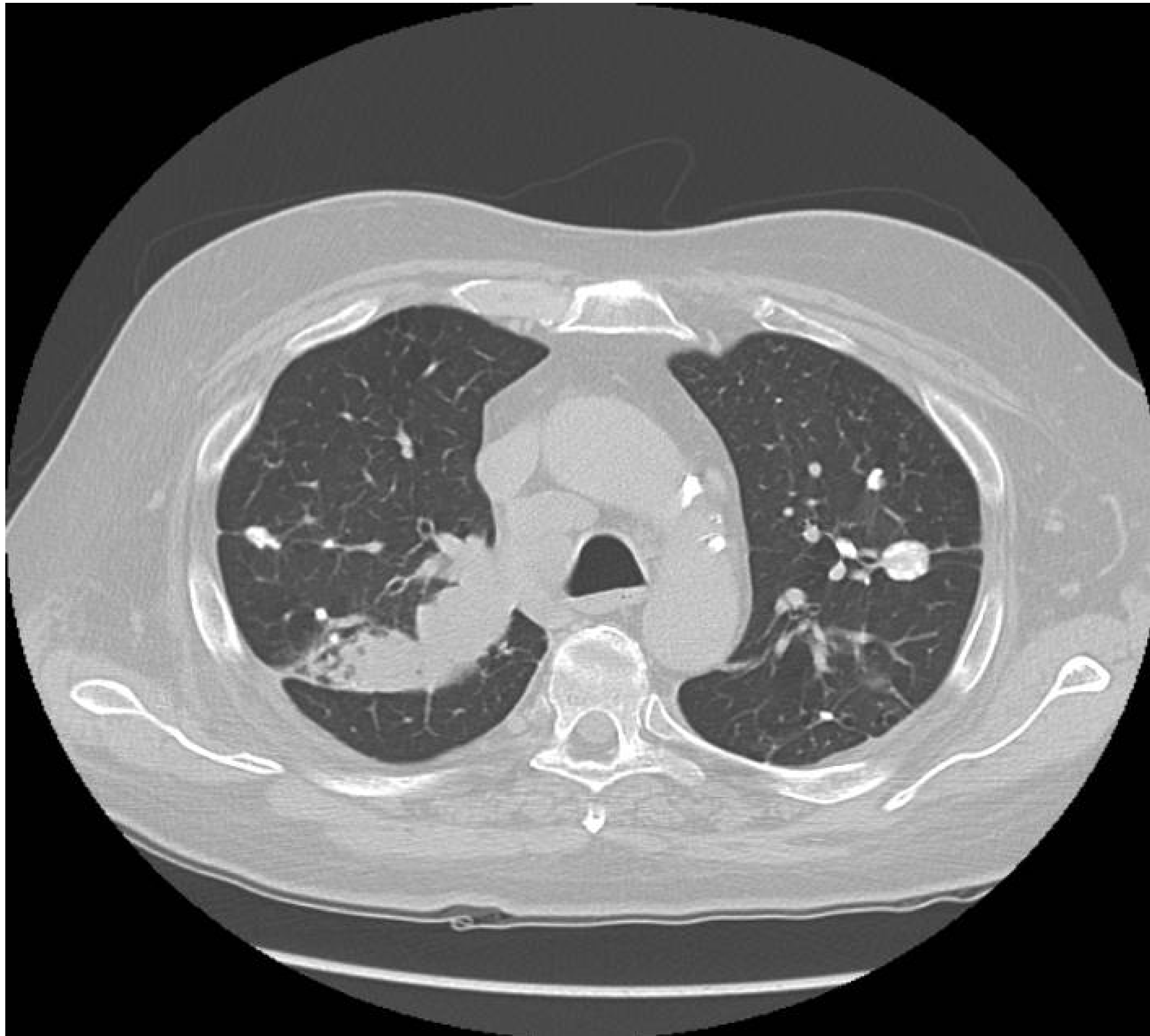
CT of the abdomen

Conclusion: Diffuse liver metastases

Lymphadopathy.



CT of the lungs and mediastinum



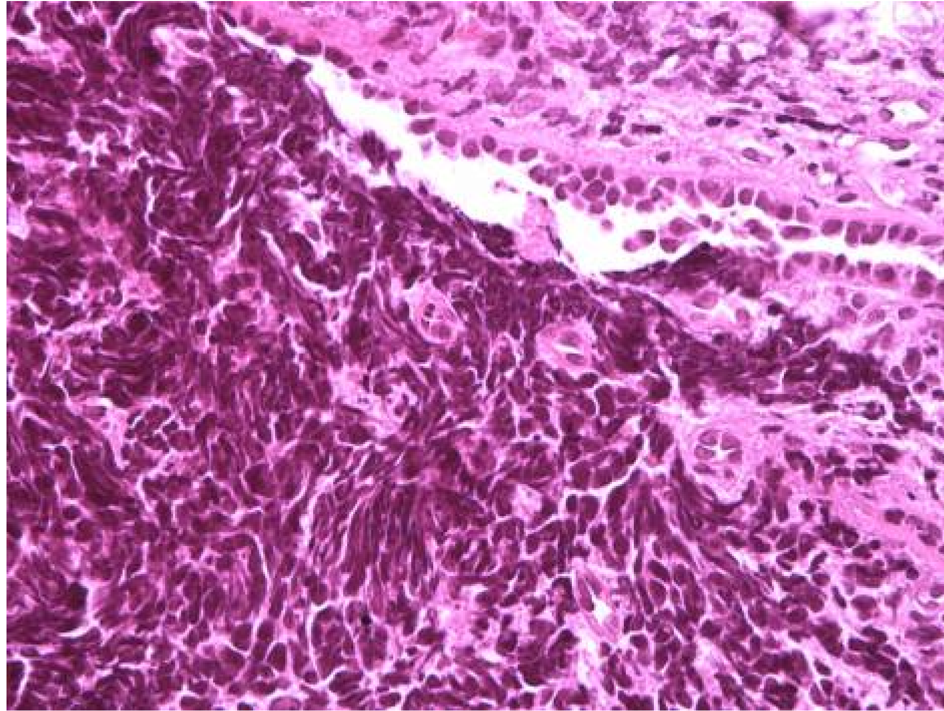
Conclusion:
Evidence of central tumor of the right lung (S2) with metastases in the
right hilar and mediastinal lymph nodes.

Laboratory findings and other investigations

- **Plasma cortisol 106 mikrog/dl** (5- 25);
- **ACTH 128 pg/mL** (0 – 46);
- **HbA1c 8,3%** (4,5-6,2)

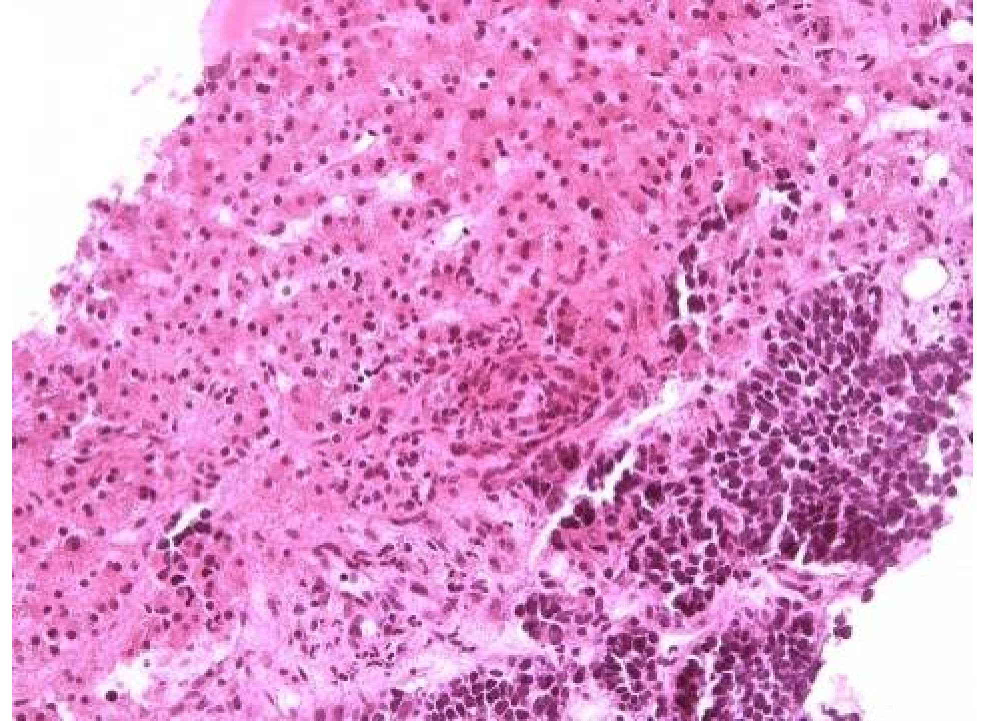
- Cytology results:
  - Aspirate of liver: Conclusion: Small cell carcinoma.
  - Aspirate of lung: Conclusion: Small cell carcinoma.

Biopsy of lung

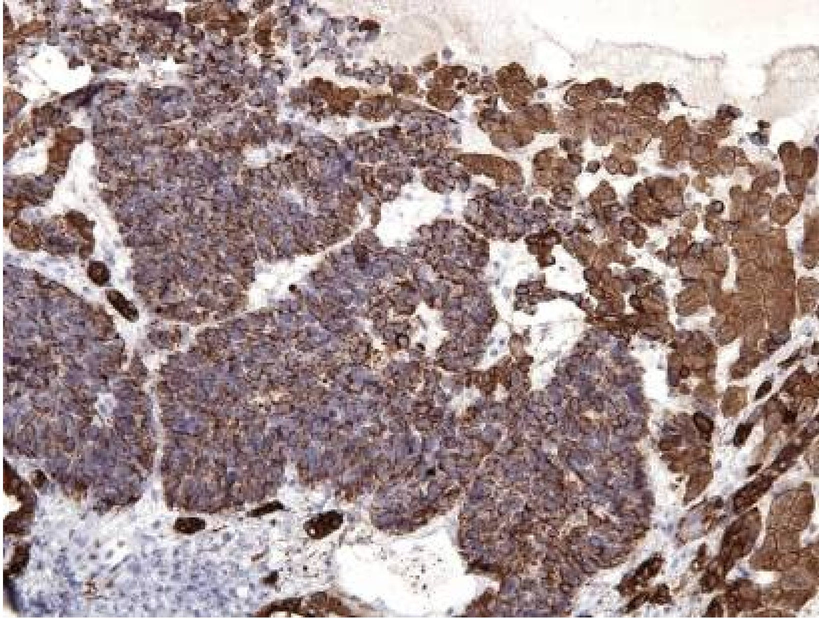


H&E x 40

Biopsy of liver

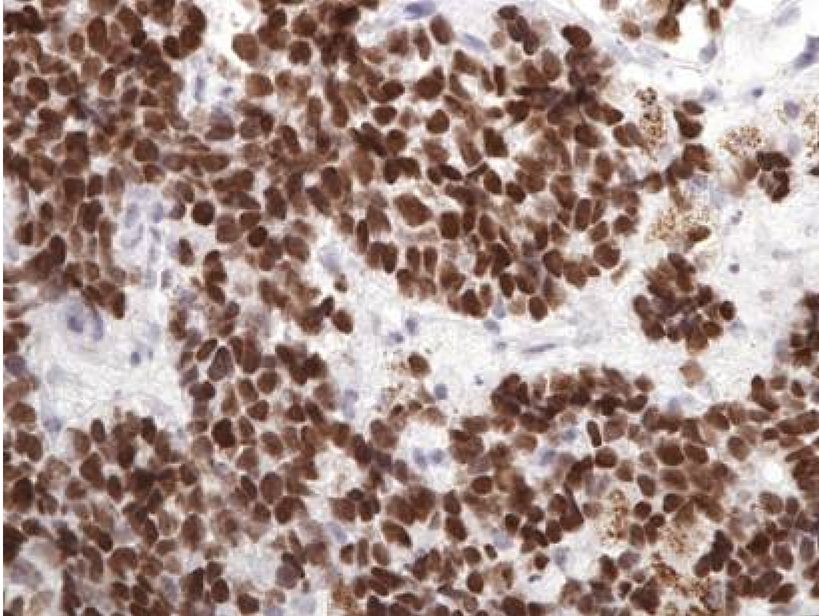


H&E x 10



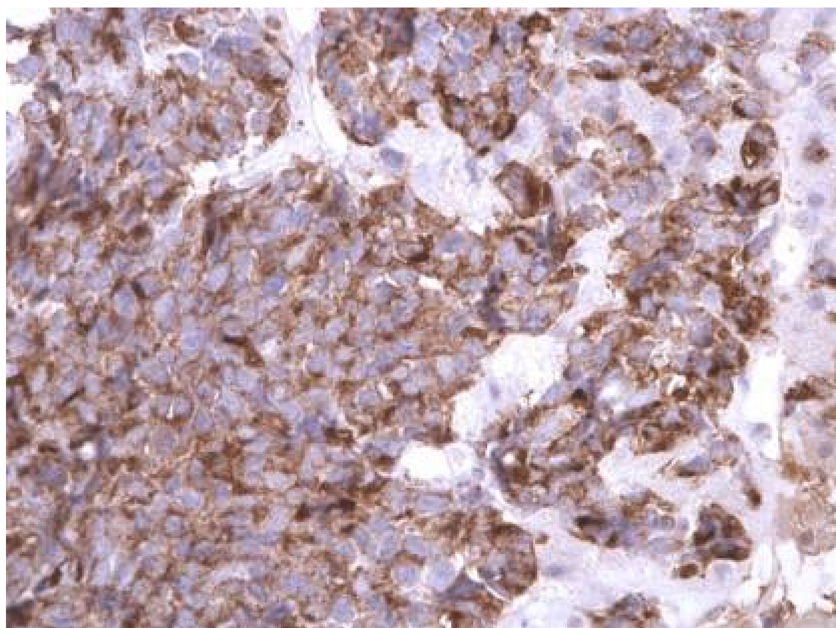
Hepatocytes are with diffuse cytoplasm staining, and tumor cells are with diffuse partial cytoplasm and diffuse perinuclear staining with antibody to CKAE1/AE3

Immunoperoxidase x 20



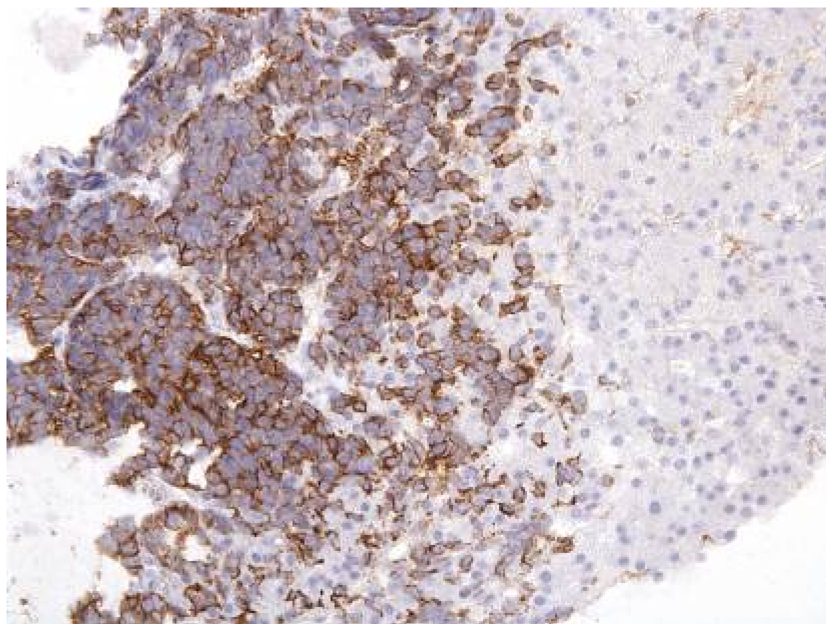
Diffuse nuclear reactivity for thyroid transcription factor one (TTF-1)

Immunoperoxidase x 40



Diffuse cytoplasm staining of tumor cells with antibody to Chromogranin A

Immunoperoxidase x 40



Diffuse CD56 immunoreactivity with a typical membranous staining pattern

Immunoperoxidase x 20

Conclusion

- Consilium: taking into account the dissemination of the process the operative therapy and specific therapy (chemotherapy and radiotherapy) impossible
- Prescribed treatment: insulin th, Spironolactoni (Spirix) 100 mg x 2 p/o; intravenosus K^+ replacement; Ketoconazoli 100 mg x 3 p/o

	3.08	4.08	5.08	6.08	7.08	8.08	10.08	11.08
K^+, mmol/l	1,7	1,6	1,7	1,5	1,9	2,1	2,6	2,6

Clinical diagnosis

- Small cell carcinoma of the lung with its metastasis in the liver with neuroendocrine activity (ACTH-producing)
- Ectopic Cushing‘s syndrom with persistant hypokaliemia

Main learning points

- Don’t forget to think about endocrine disease when you see the patient with severe persistent hypokaliemia
- The possibility of an intra-thoracic neoplasm should be kept in mind in any case of Cushing’s syndrome especially in the middle aged male patients
- The classic Cushing’s habitus can not be seen in patients with rapidly growing lung cancers

Wayne McLaren,
The Marlboro Man,
died of lung cancer

Thank you!