Sometimes it takes a couple of years to find the right diagnoses

Norway, Medha Sharma and Asha Sundaran

Male 54 years old.

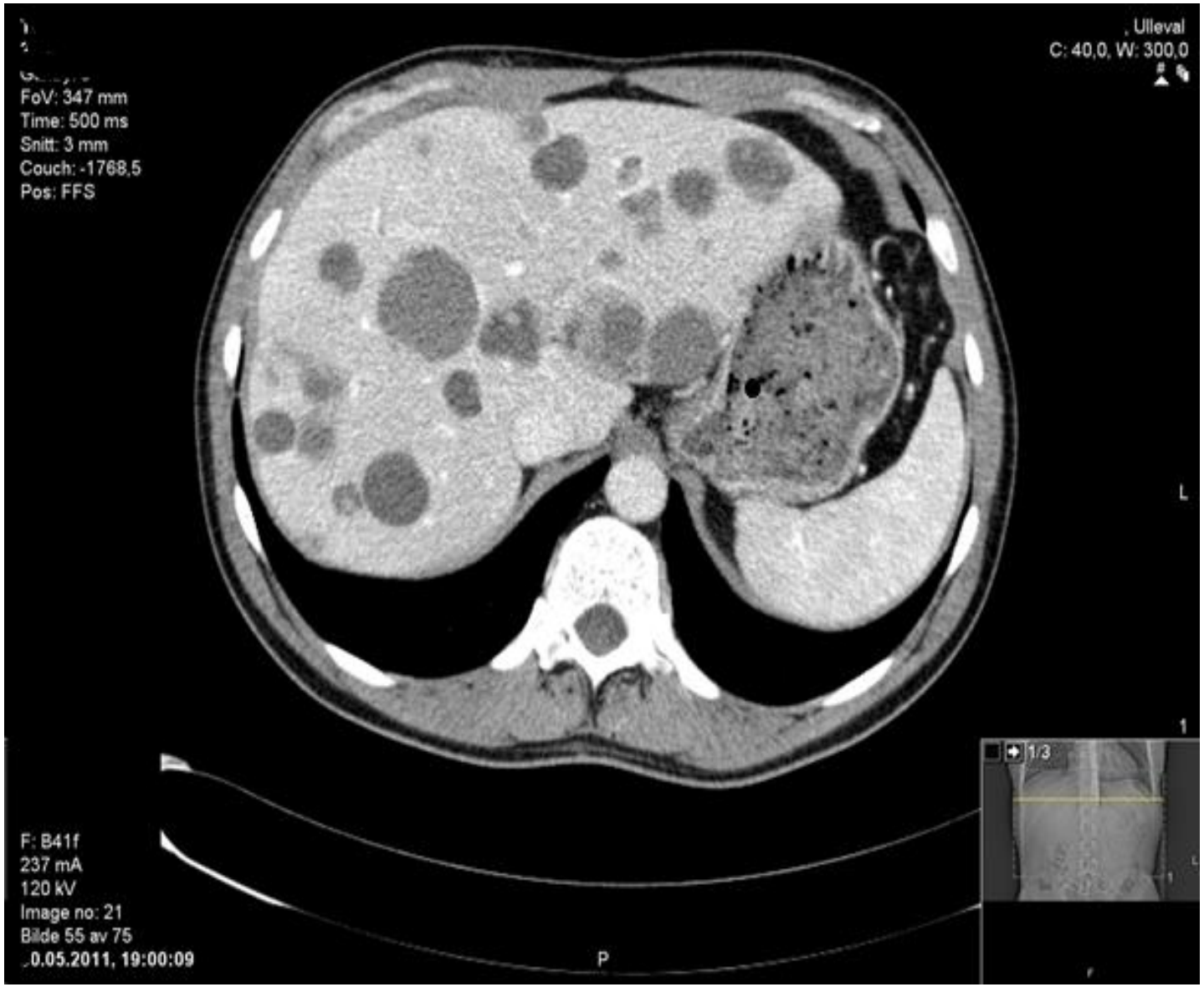
- Personal history : healthy man with normal BMI. Very active.
- previous prolaps operation , gout, asthma.
- Abdominal discomfort and diarrhea last years. Loose stools ca 5x day, aggrevated by meals. Last year tendency of flushing in the face and upper part of thorax.

2011:

- Admitted to surgical department due to acute abdominal pain.
- CT abdomen: multiple livercysts, uncertain etiology. Biggest is 6,8x6,4cm.

- Reffered to university hospital for evaluation, where they did an ultrasound.

- Suspected echinococcus cysts , sent special tests to sweden. Negative tests..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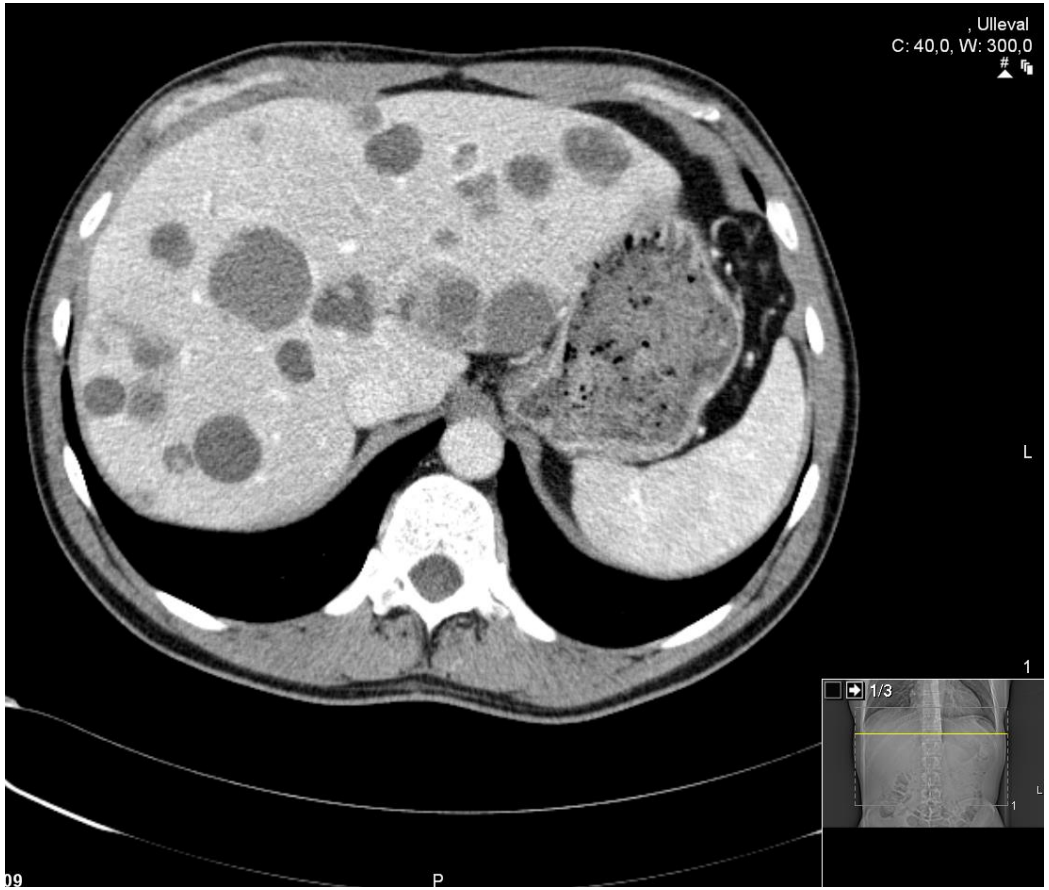
2 years later

- 2014 , admitted twice with abdominal pain , in the epigastric region. It was treated with morphine and the pain subsided.

- Christmas eve 2014
- increasing dyspnea especially on exterion, increased jugular pressure and flushing.
- He has made a video where the jugular vein is protruding ca 5cm above the clavicle on the right side.
- Ct abdomen showed progression of the cysts , biggest short axis. Admitted to general medical ward.

- tired, no shortness of breath in rest, pulsating jugular vein (increased venous pressure) ,
- Cardiac murmur grade 3 with radiation to the axillirary line. BP 90/80mmHg, puls 60. temp 37,0, RR: 18,
- Enlarged liver.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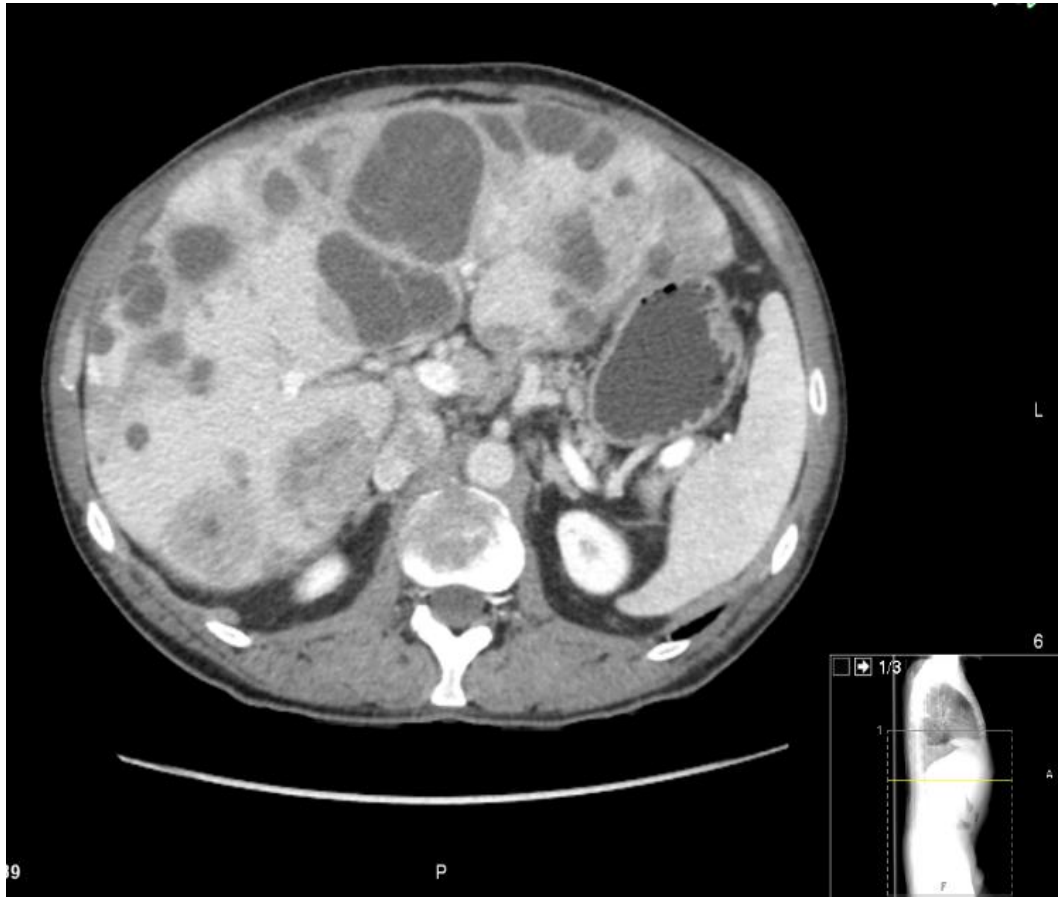
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Diagnostics:

- Eccho: Right HF, EF 30 %, pulmonal and tricuspid insufficiency .
- LAB: Bnp 1200, trop 20, crp 5, WBC 8 (normal), Hb 11g/dL.

- Gastroscopy showed some unspecific fibrotic changes: foveolar hyperplasia, slightly atrophic mucosa. H pylori neg.

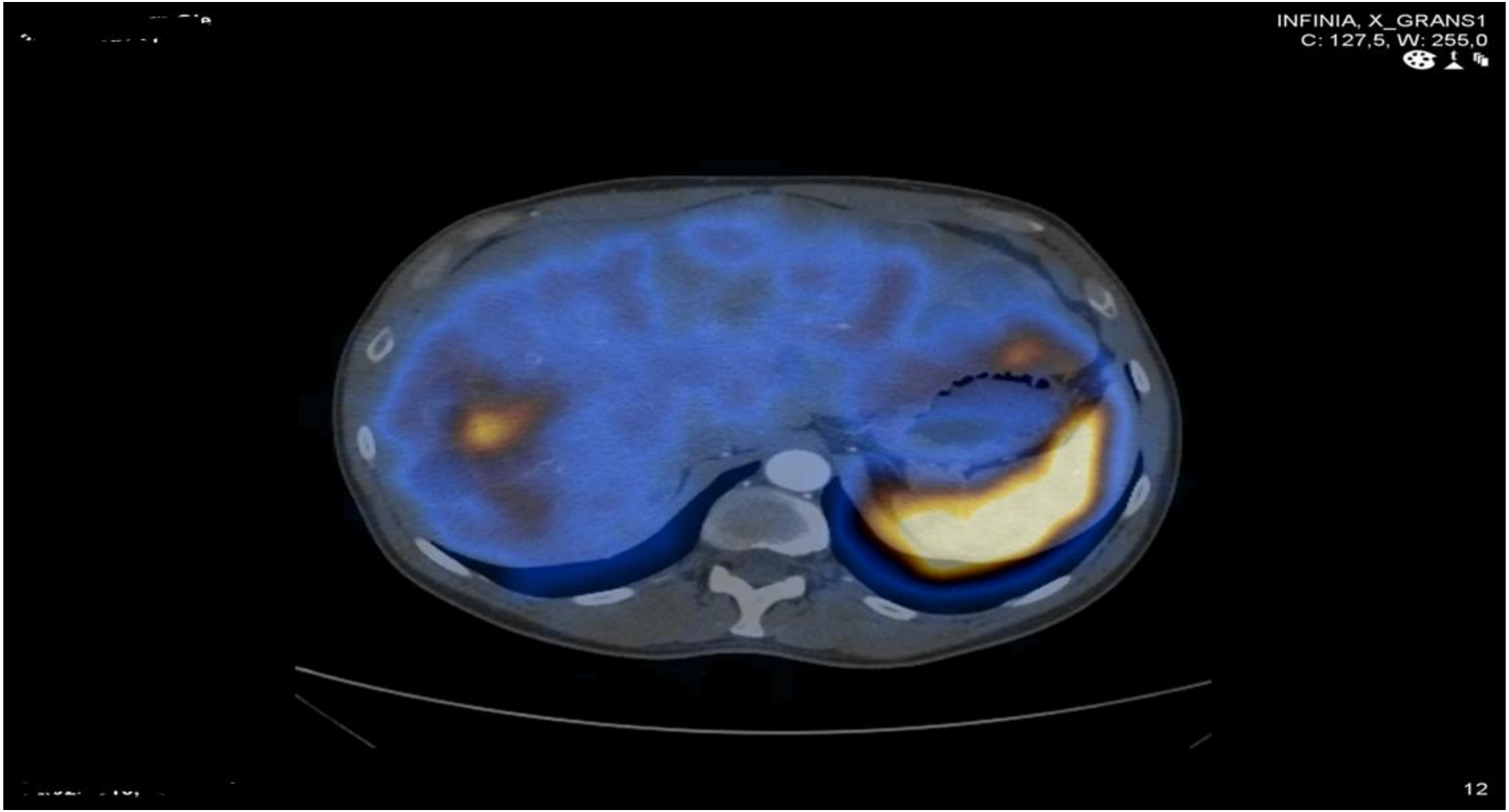
- CT liver/ abdomen: mulitple big cysts, abscesses , echincoccysts? No free fluid or air , multiple lymphnodes ventral to the liver and mesentery, reactive pattern.

DD?

- WHAT OTHER TESTS WOULD YOU DO?

- Chromogranin A and urinary 5 HIAA clearly elevated!!!

- BOOM!!!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CrgA and U – 5 HIAA

- These are peptide products of serotonin (5 – hydroxytryptamine) , degraded via a first pass metabolism via the liver. That is why we see the carcinoid syndrome after the livermetastes are established.

- Biochemically Serotonin is dependent on the uptake of tryptophan. Primarily found in the GI tract.

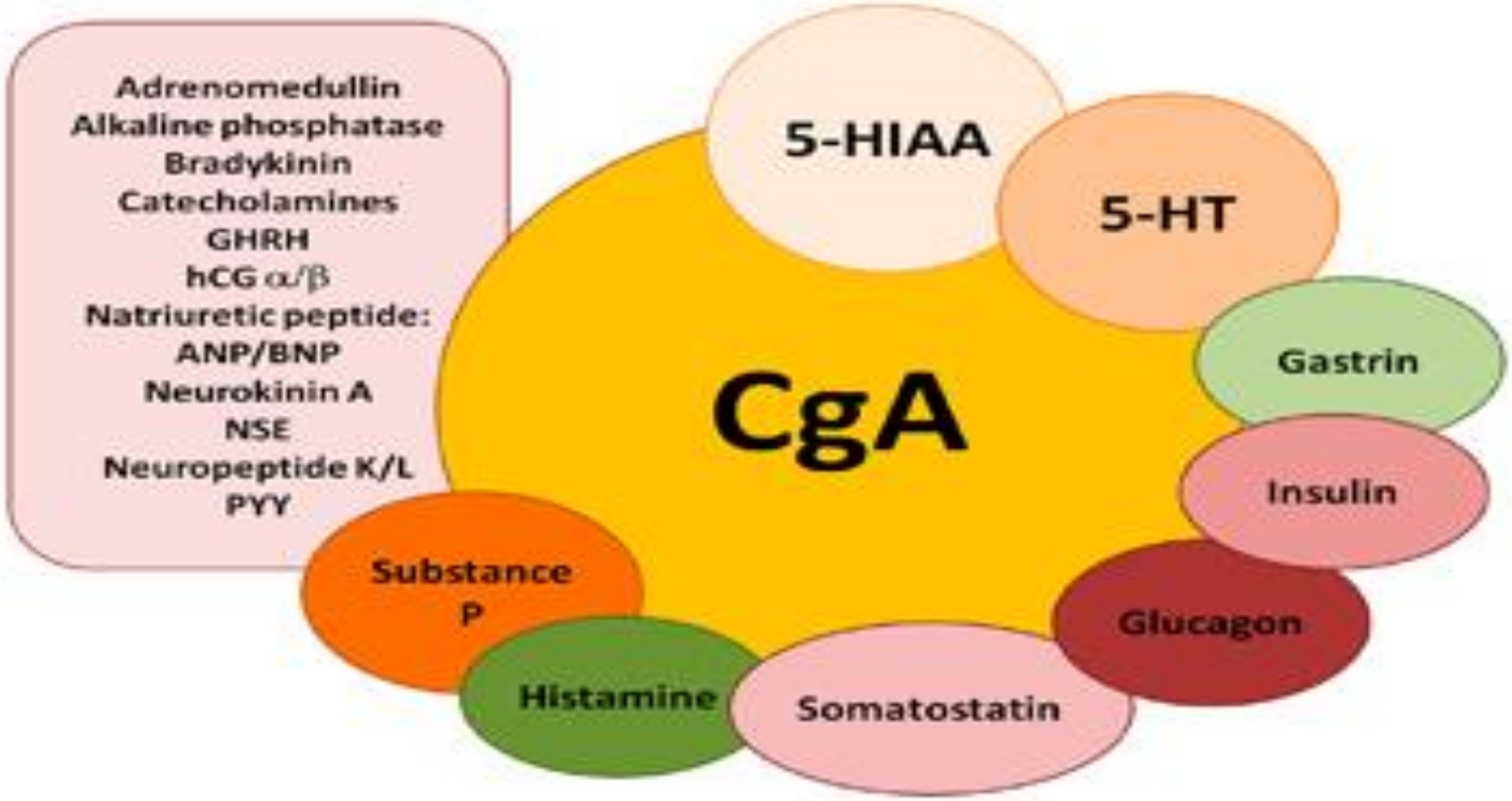
- In the blood the serotonin is absorbed by the platelets and then metabolised primarlily in the liver. The main biproduct is 5-HIAA excreted by the kidneys.

- High level of CgA = worse outcome

- How to do the urinary test? 24 hour collection? Any precautions on the diet before testing?

- Remember to do a diet restriction before taking the test.
- Bananas, advocados, pineapple increase serotonin can give falsely high results.

- In Norway they don`t focus much on diet restriction.


Adrenomedullin
Alkaline phosphatase
Bradykinin
Catecholamines
GHRH
hCG α/β
Natriuretic peptide:
ANP/BNP
Neurokinin A
NSE
Neuropeptide K/L
PYY
5-HIAA
5-HT
CgA
Gastrin
Insulin
Glucagon
Somatostatin
Histamine
Substance P

CrgA

- Falsely elevated under other conditions?

Conclusion

- Carcinoid syndrome, neuroendocrine tumour of the small intestine, with metastasis to the mesentery, liver, lymph nodes and the heart.

- Irreversible fibrotic changes at the tricuspid and mitral valve. Biological heart valve replacement is indicated.

- CT small intestine CT could not reveal any stenosis.
- Biopsy to do further diagnostics (ki67 Index) is not necessary

Treatment

- Sandostatin analog : Ipstyl sc. every 6 months ,
- (somastostainanalog that reduces the bloodflow, especially postprandial blood flow in the upper mesenterial artery and portal vein.
- Aim is to reduce the load of the disease.
- Only curatie therapy is surgery: If you`re able to find the primary tumour resection is indicated, icluding mesenterial lymph nodes. The whole small intestine should be palpated intraoperativ.
- Liverembolization is possible , showed good effect on flushing and diarrea.
- In either treatment the aim is to reduce diarrhea and flushing.

Epidemiology

- Gastroenteropancreatic NET`s in Norway from 2003-2013 :
- Median age 61 years, range 10-94 years
- Insidens 5,8 per 100 000. Increasing trend.
- 60 % have NET in the small intestine.
- Ca 50 percent are men.
- Prognosis is a 5 years survival 78 % . Liver metastasesm

Neuroendocrine tumours of the gut/ Carcinoid syndrome.

- **Biopsy stained with immunohistochemical marker:** i Ki67 index.
- **G1**: under or same as 2 %
- **G2**: 3-20%
- **G3:** over 20% =These are neuroendocrine carcinomas. / neuroendocrine tumours, (NET)
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- <u>Nevroendokrine svulster utgått fra tynntarm</u>
- Nevroendokrine svulster (heretter NET) som oppstår i tynntarmen produserer vasoaktive substanser/ peptider / hormoner. Serotonin er det vanligste peptidet som er forhøyet ved tynntarms-NET. Produksjonen av vasoaktive substanser kan føret til det såkalte carcinoide syndrom. Svulstene vokser ofte svært langsomt, ca. 60% av pasientene får påvist metastaser på diagnosetidspunktet