Thyroid Disorders

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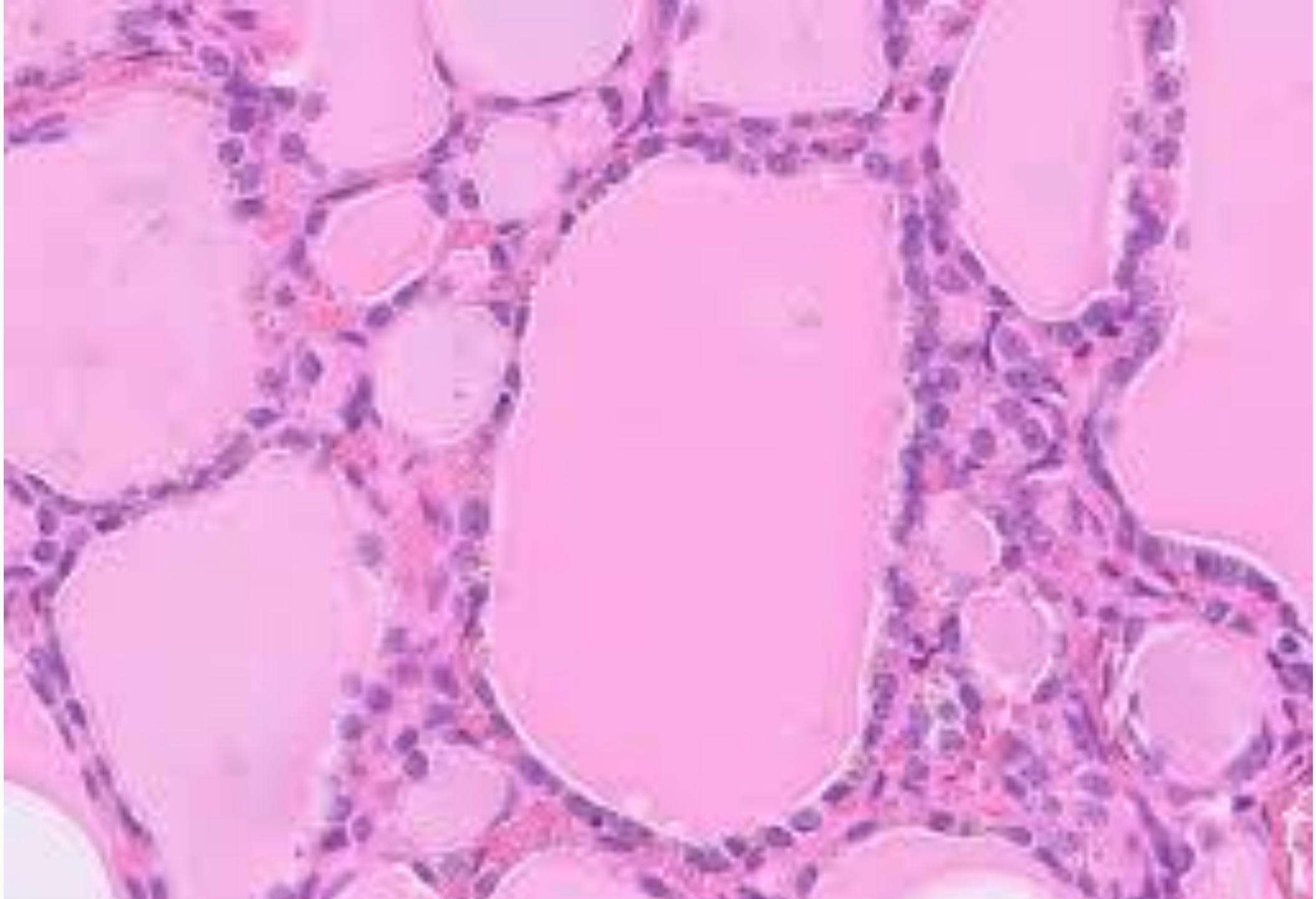
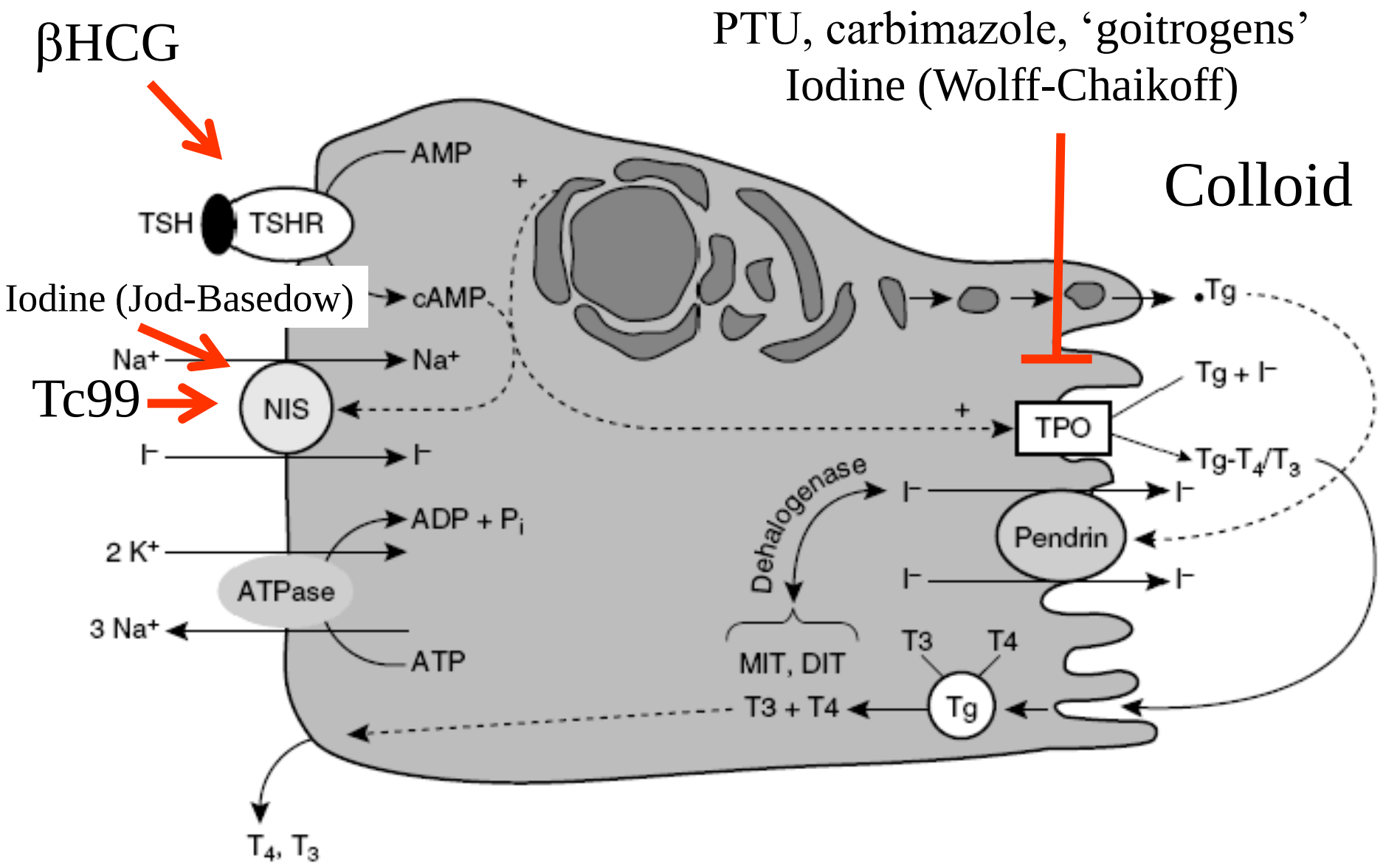


The ‘engine room’ of thyroid hormone synthesis



Jenny, a 27yo newly wed presents with menstrual irregularity and fertility concerns

Lighter periods for last 3 months
Weight loss and fatigue

Hand tremor, HR 90bpm

Prolactin 327mU/L (RR 150-630)
TSH 0.02mU/L (RR 0.4-4.0)
fT4 19pmol/l (RR 11-19)

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fT4 19pmol/l (RR 11-19)
fT3 7.2pmol/l (RR 3.0-6.0)

Common causes of thyrotoxicosis

Graves’ disease
Thyroiditis
Toxic thyroid nodule

Useful aspects of history and examination

- Gender and age
- Past history of thyroid disease
- Duration of toxic symptoms (e.g. weight loss, palpitations, heat intolerance)
- Family history of thyroid autoimmune disease or of type 1 diabetes or coeliac disease
- Recent iodine exposure
- Exposure to relevant drugs such as amiodarone or lithium
- Eye exam – chemosis, proptosis
- Neck tenderness or mass

Useful investigations for thyrotoxicosis

Prior TFT results

Thyroid antibodies (TSHrAb in particular; TPO and TG antibodies are less helpful)

Technetium-99 uptake scan

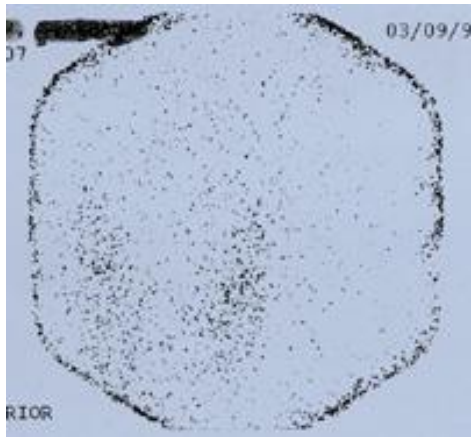
Not so useful investigations

Thyroid ultrasound scan

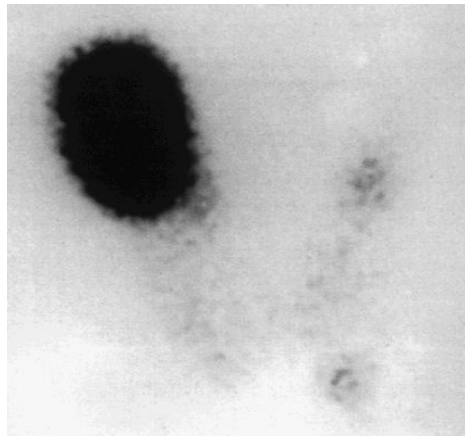
Technetium scan to define the cause of toxicosis

Graves’

Thyroiditis



Toxic nodule



Jenny reports that her mother had an under-active thyroid and you note mild proptosis. She had a CT with contrast to investigate abdominal pain two months prior.

Elevated TSHrAb confirmed Graves' disease
(Tc99 scan not possible due to recent IV contrast)

Treated with carbimazole 10mg bd and risks of neutropaenia and rash discussed and the importance of planning pregnancy stressed.

Treatment of thyrotoxicosis

Graves' disease

- Anti-thyroid drug (carbimazole or PTU) ± propranolol
- Radioactive iodine with subsequent thyroxine therapy
- Thyroidectomy

Toxic nodule

- Radioactive iodine
- Anti-thyroid drug

Thyroiditis

- Address cause
- Propranolol if symptoms warrant it
- NSAIDS or even steroid for neck pain or for amiodarone-induced disease

Jenny returns in 4 weeks with improved symptoms and a desire for pregnancy

TSH 0.20mU/L (RR 0.4-4.0)
fT4 11pmol/l (RR 11-19)
fT3 5.1pmol/l (RR 3.0-6.0)

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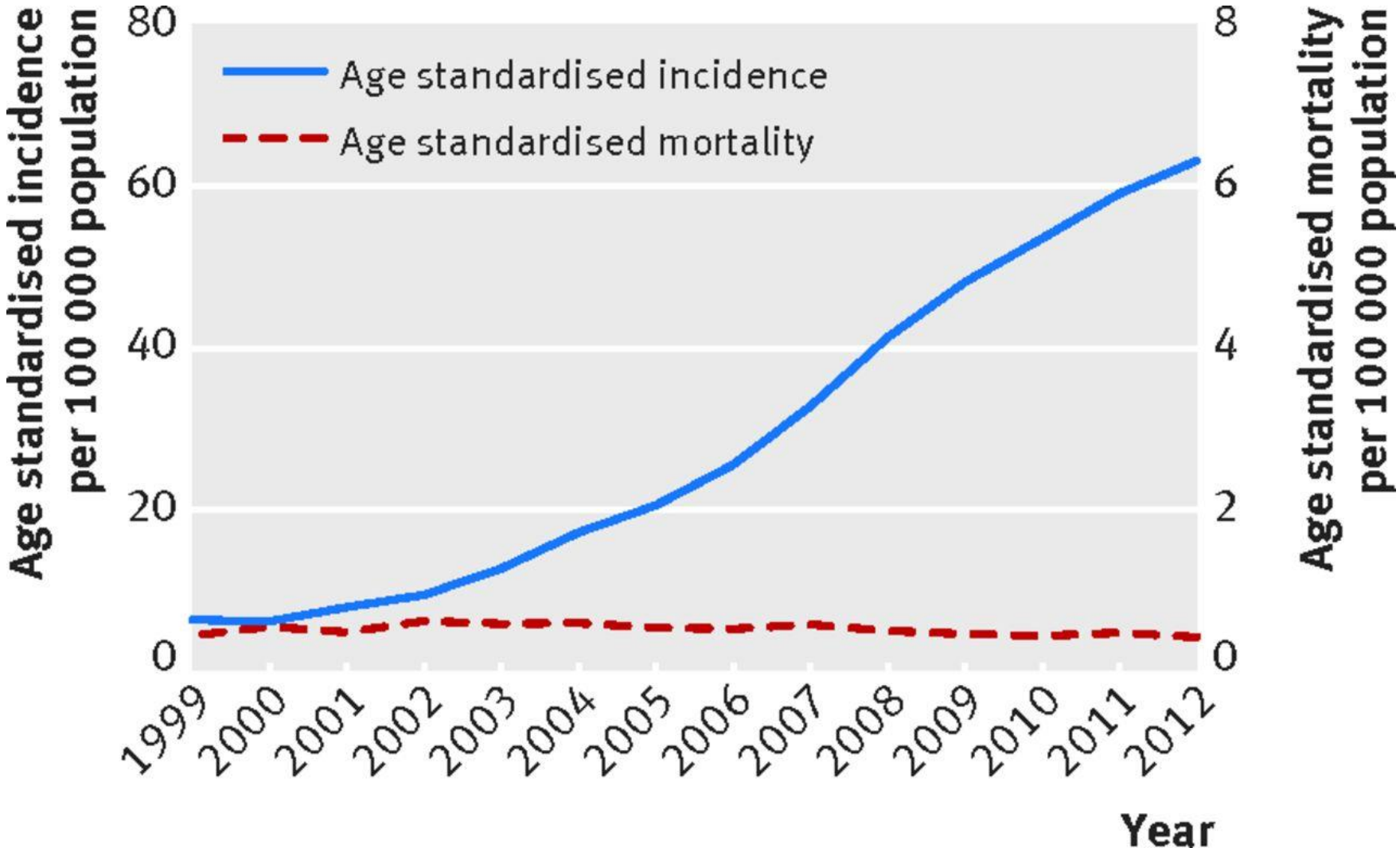
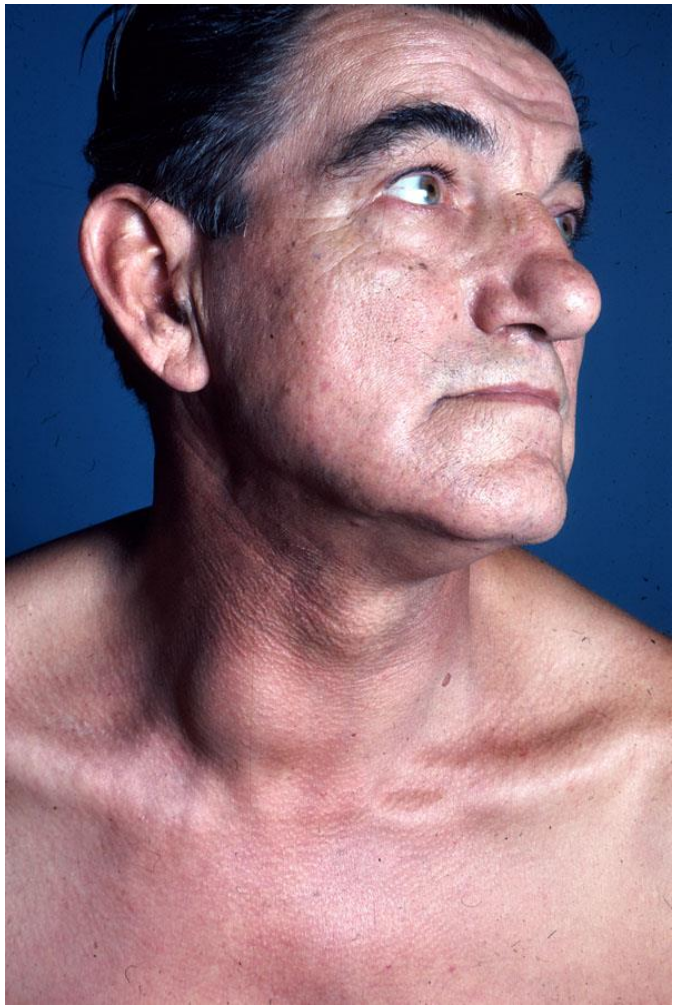
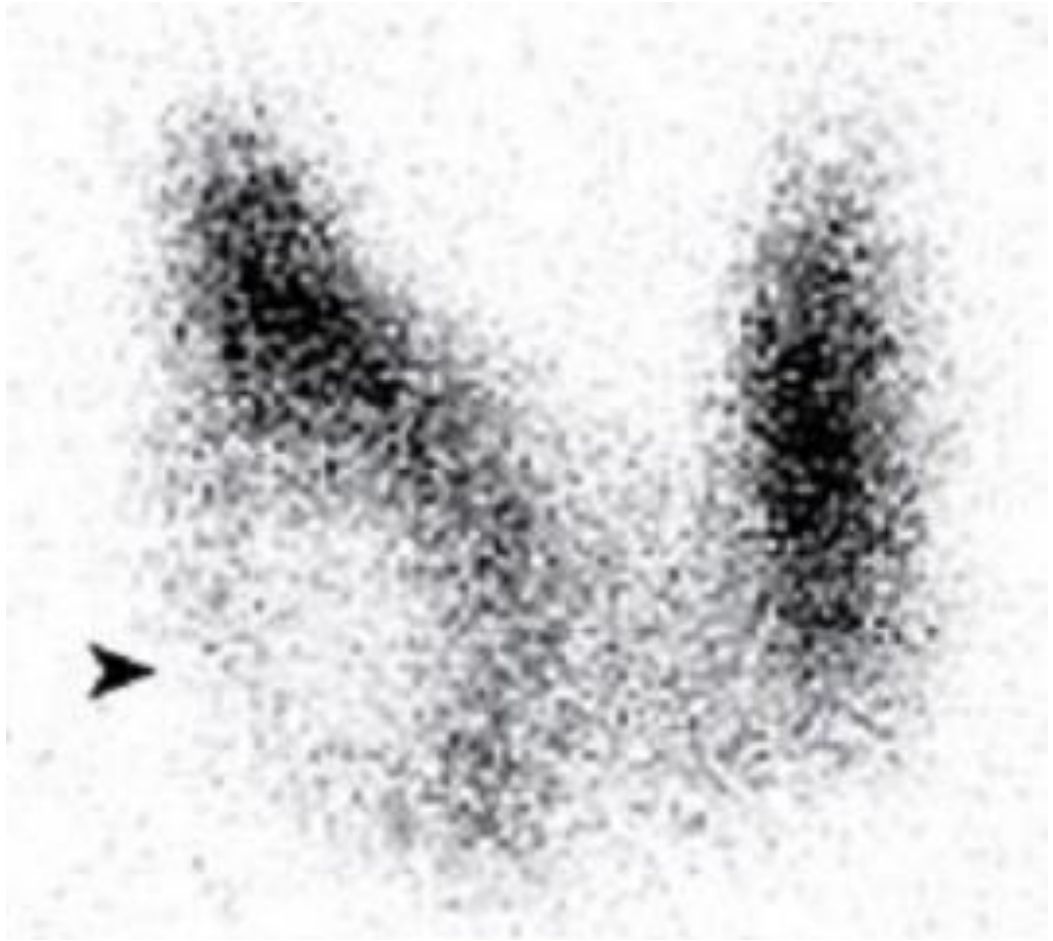
Ideally should swap from carbimazole to PTU during first trimester
TSH during pregnancy is usually suppressed due to ability of βHCG to weakly stimulate TSH receptor
Need to be careful to ensure adequate fT4 levels during early pregnancy
Monthly TFT monitoring during pregnancy is advisable
Coeliac work-up might be worthwhile if abdominal pains are ongoing

Thyroid cancer incidence and mortality
(or why routine thyroid ultrasound should be banned)



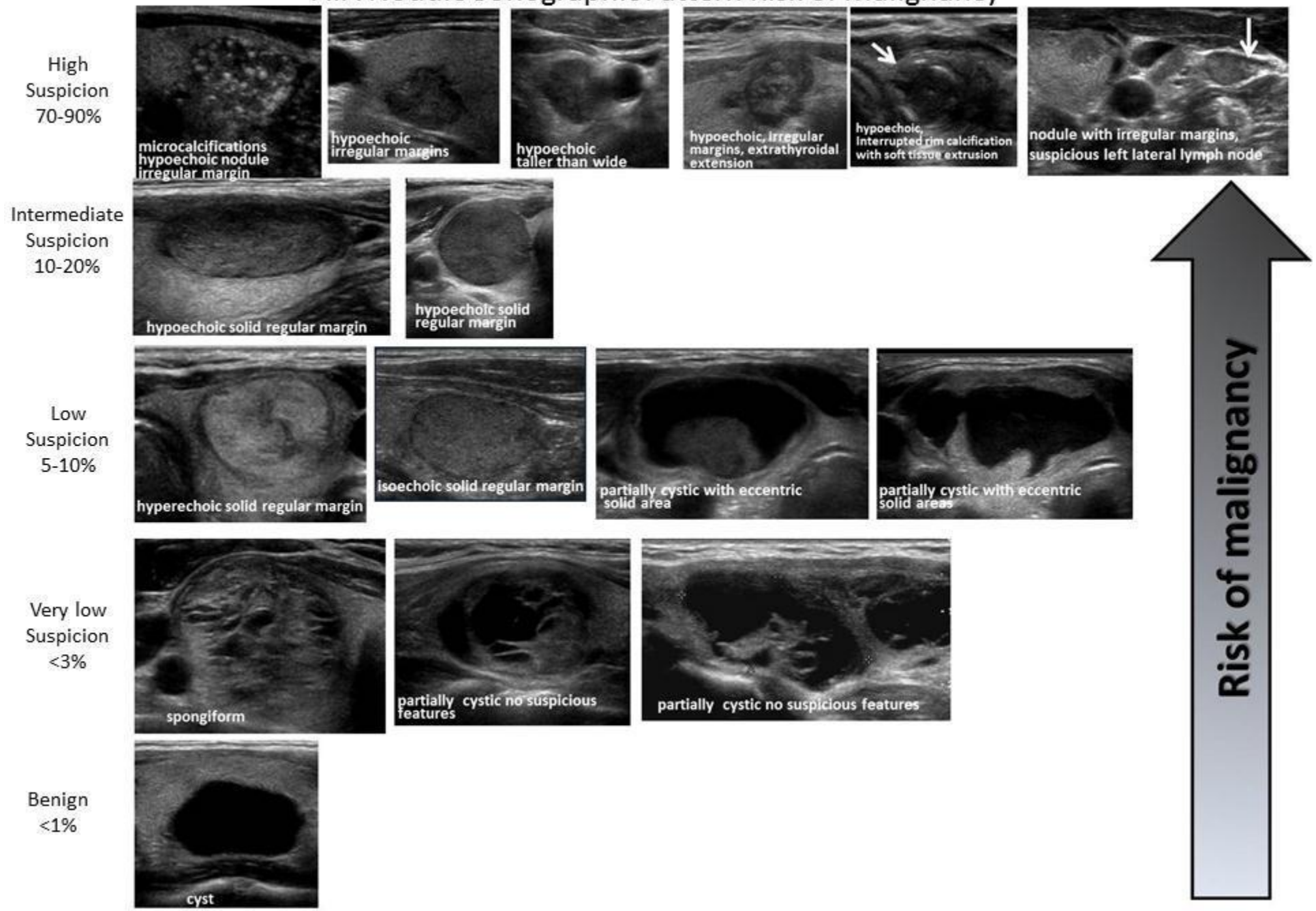
A clinical scenario that should not be missed



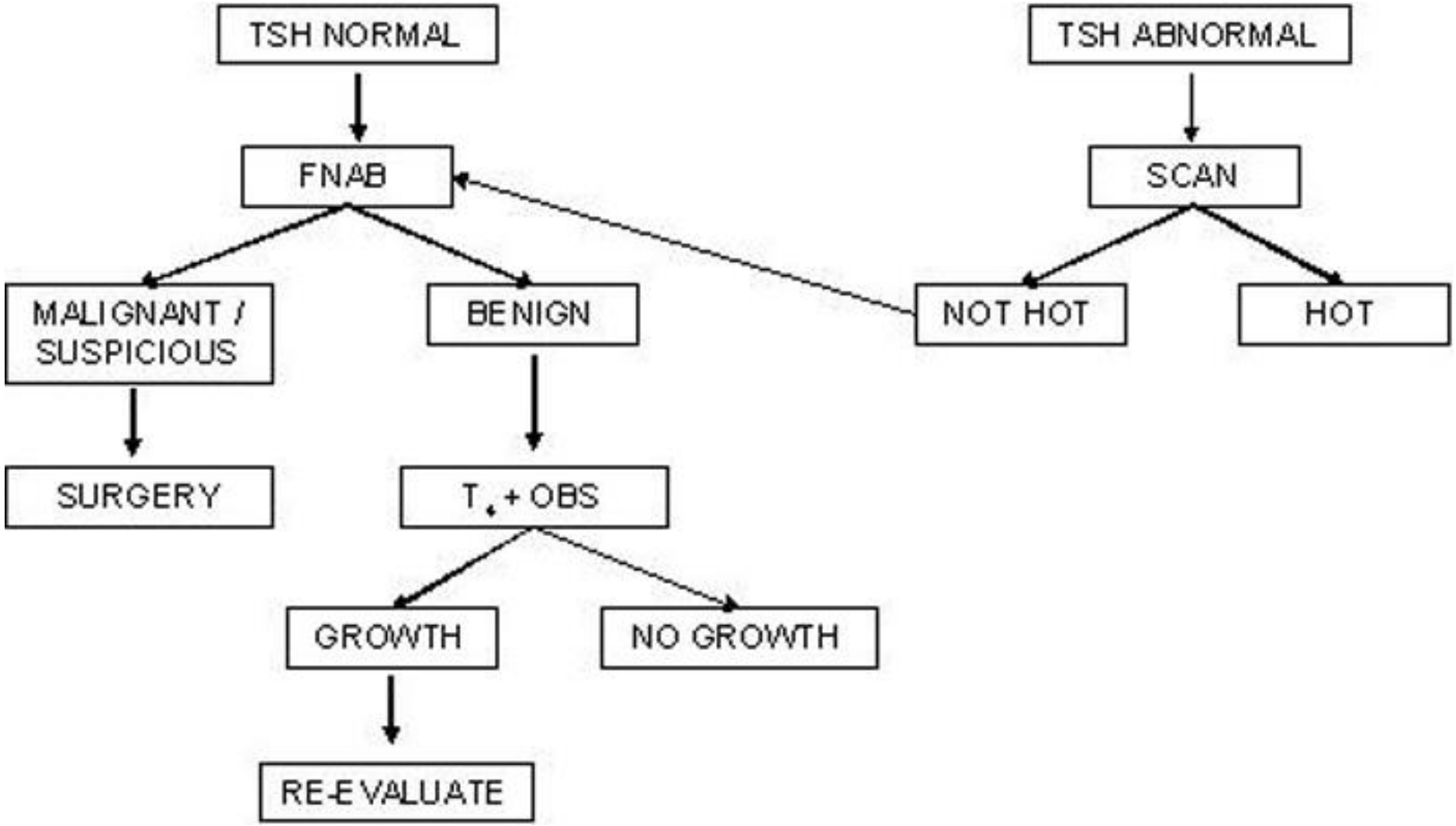


enlarging solitary mass that is cold on Tc^{99} scan

ATA Nodule Sonographic Pattern Risk of Malignancy



Thyroid nodule (>1cm) diagnostic algorithm



Max has a history of pituitary failure and receives hydrocortisone, thyroxine and testosterone therapy and feels well. His recent TFT results are:

TSH 0.20mU/L (RR 0.4-4.0)
fT4 18pmol/l (RR 11-19)
fT3 4.1pmol/l (RR 3.0-6.0)

Should he decrease his thyroxine dose?

Rachel reports heavy menses for the last 3 months and was found to have elevated prolactin of 975mU/l (RR 150-630)

Is hyperprolactinaemia the explanation for her symptoms?

Rachel reports heavy menses for the last 3 months and was found to have elevated prolactin of 975mU/l (RR 150-630)

Is hyperprolactinaemia the explanation for her symptoms?

TSH 12 (RR 0.4-4)
fT4 9 (RR 11-19)
fT3 3.0 (RR 3.0-6.0)