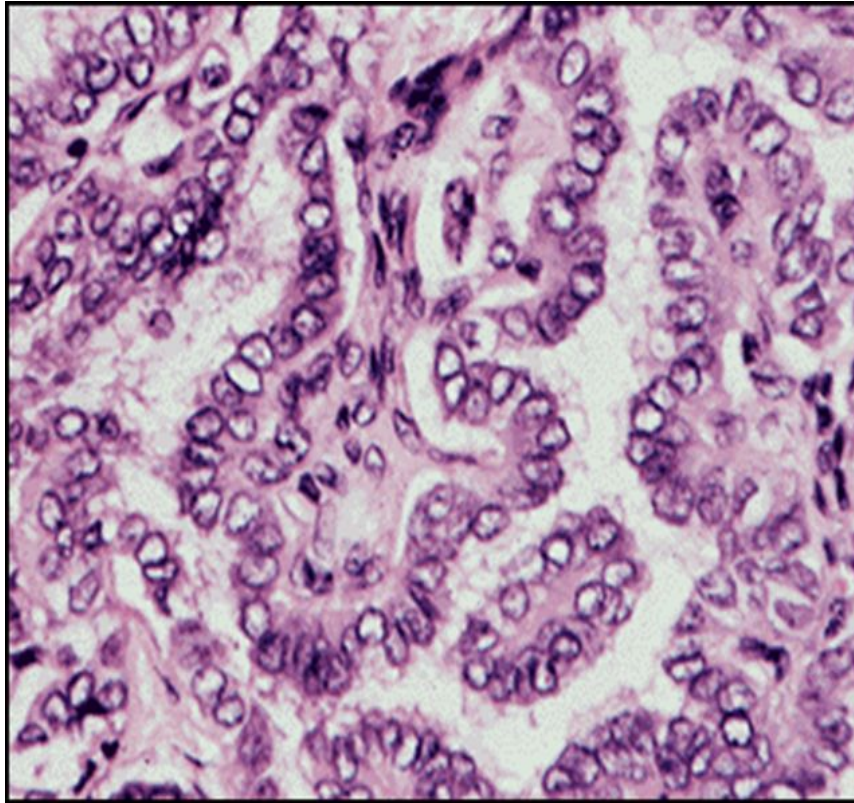
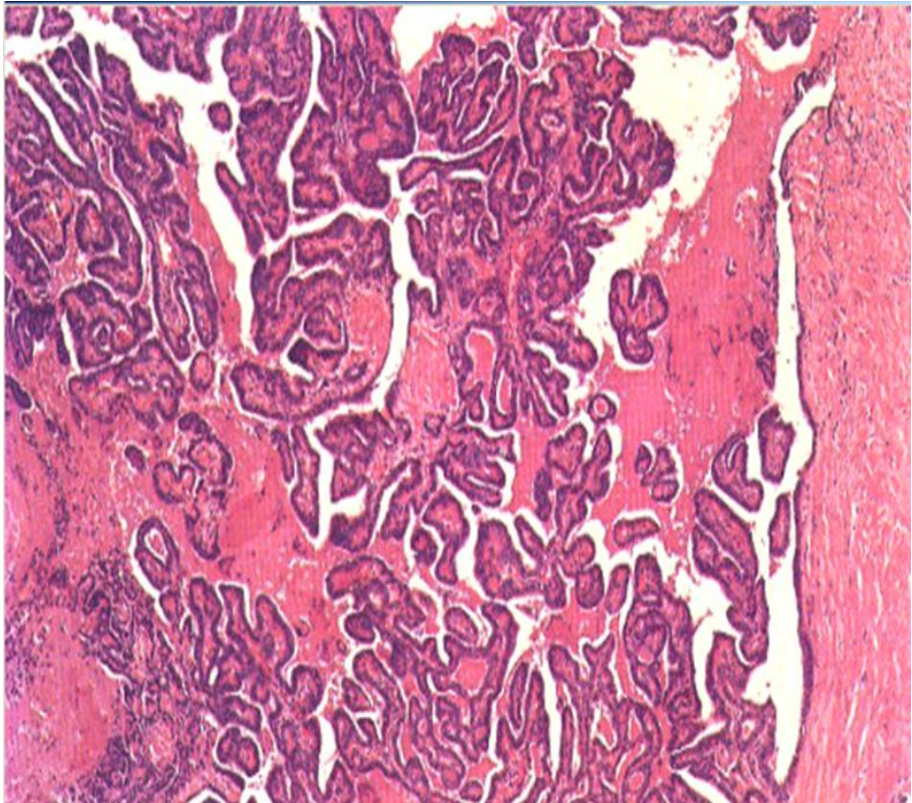


# PBL endocrine-3with keys

Dr.Esraah Alharris

Case 1 :- A 25 years old female accidentally discovered a small non tender thyroid nodule. By radio-isotopic scan it was proved to be a cold nodule. Biopsy from thyroid showed finger like projections covered by epithelial cells with ground glass nuclei.



- a) What is the most likely diagnosis?
- b) How does you reach this diagnosis
- c) What is the earliest method of distant spread in this tumor?
- d) What are other microscopic features of this tumor?

- e) Radioactive iodine scan finding ?
- f) Prognosis
- g) way of transmission

# Answer

a) Papillary ca. thyroid

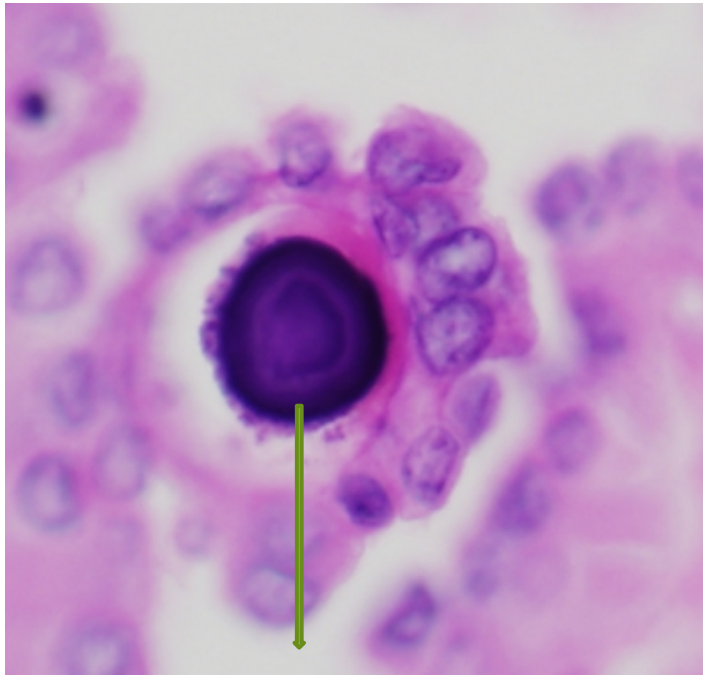
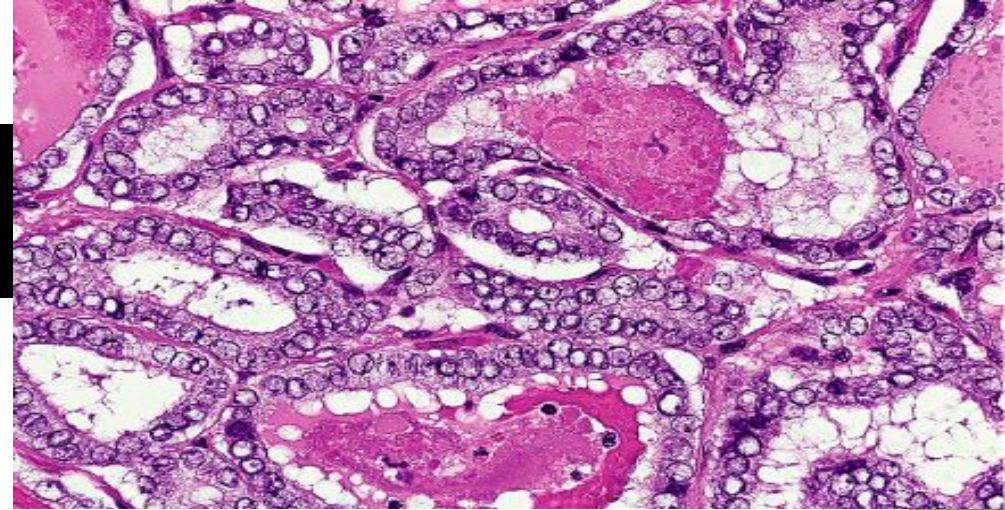
b) APPROACH TO A CASE OF THYROID NODULE

C) Local infiltration to the surrounding tissues

- **Lymphatic spread common & early** to cervical lymph nodes
- Blood spread rare and late to the lungs and the bone
  - Distant metastases are present at diagnosis in 3-5% of cases.

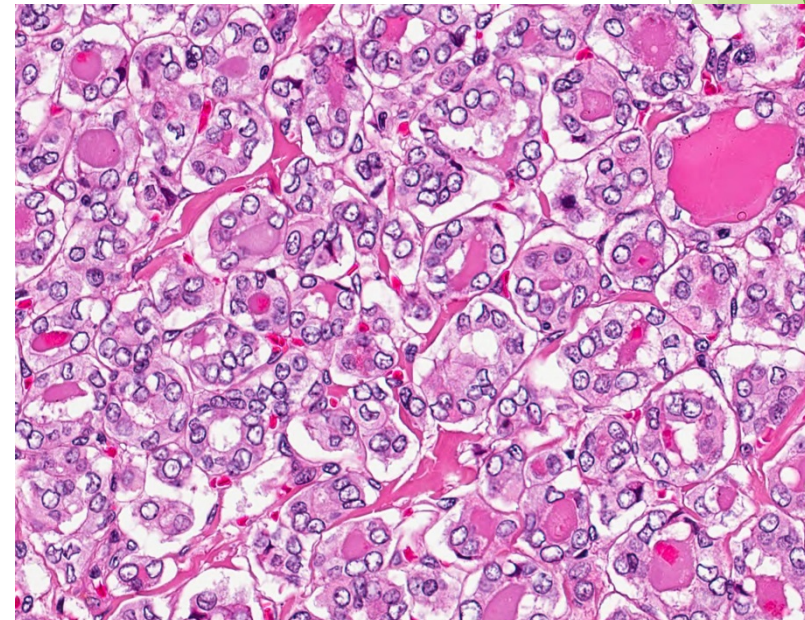


Nuclear features of papillary carcinoma: optically clear (ground glass) nuclei



**Psammoma  
bodies**

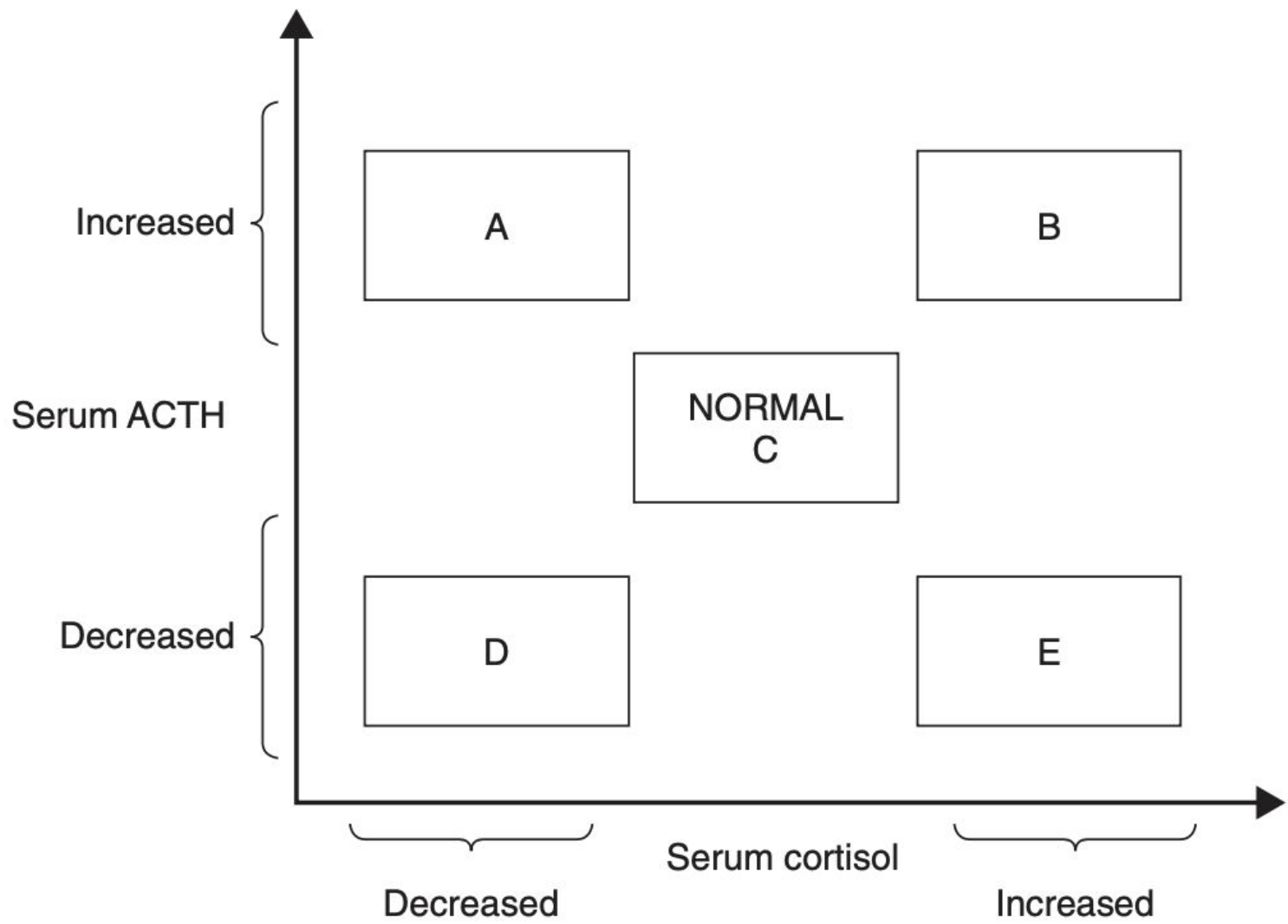
## Follicular variant of Papillary carcinoma



NIFTP:  
microfollicular pattern, PTC nuclei with prominent clearing and membrane irregularity (H&E, x40)

Case.2 Which box in the schematic represents the most likely serum findings for an individual on long-term exogenous glucocorticoid administration?

- A. Box A
- B. Box B
- C. Box C
- D. Box D
- E. Box E



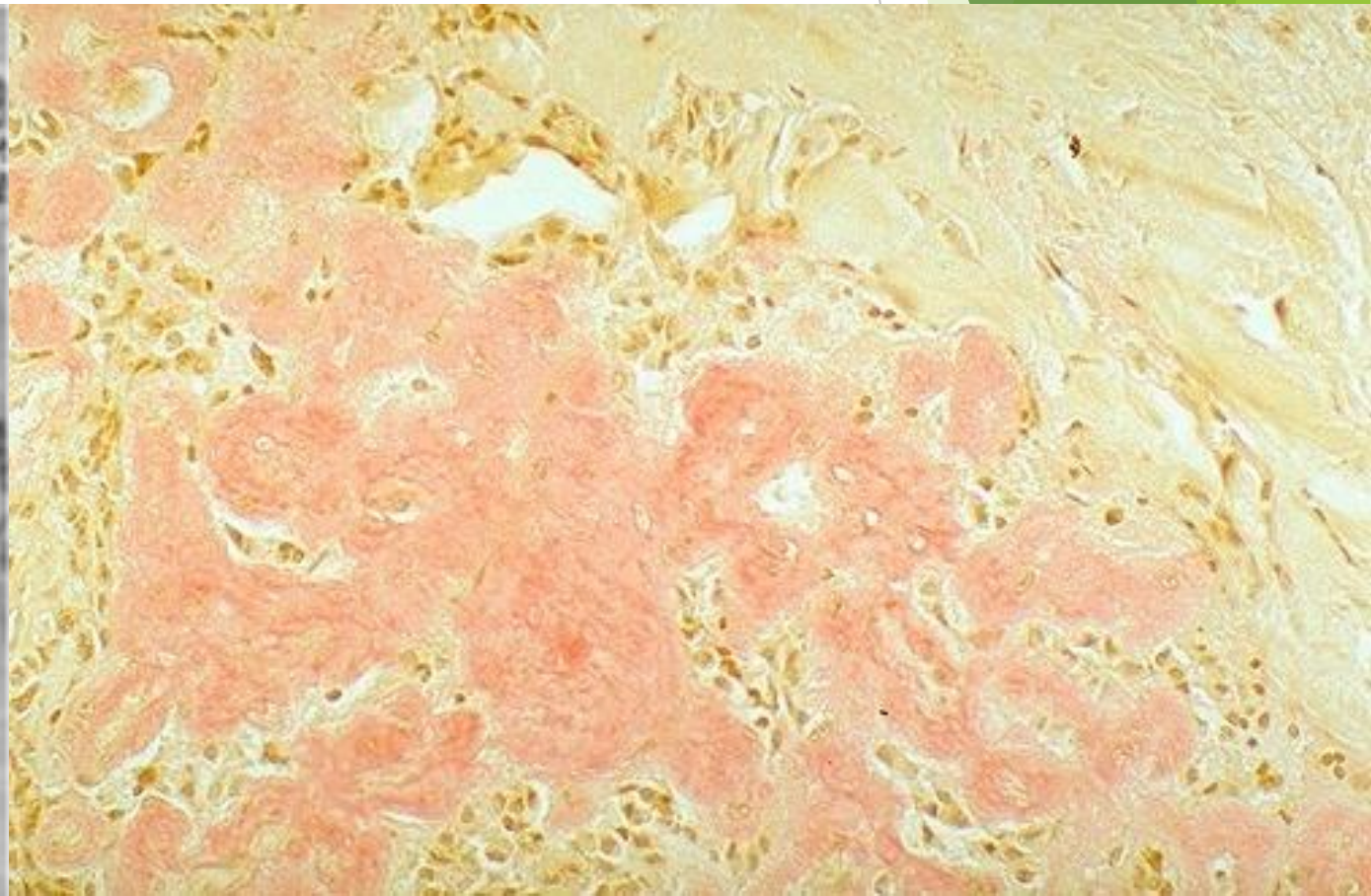
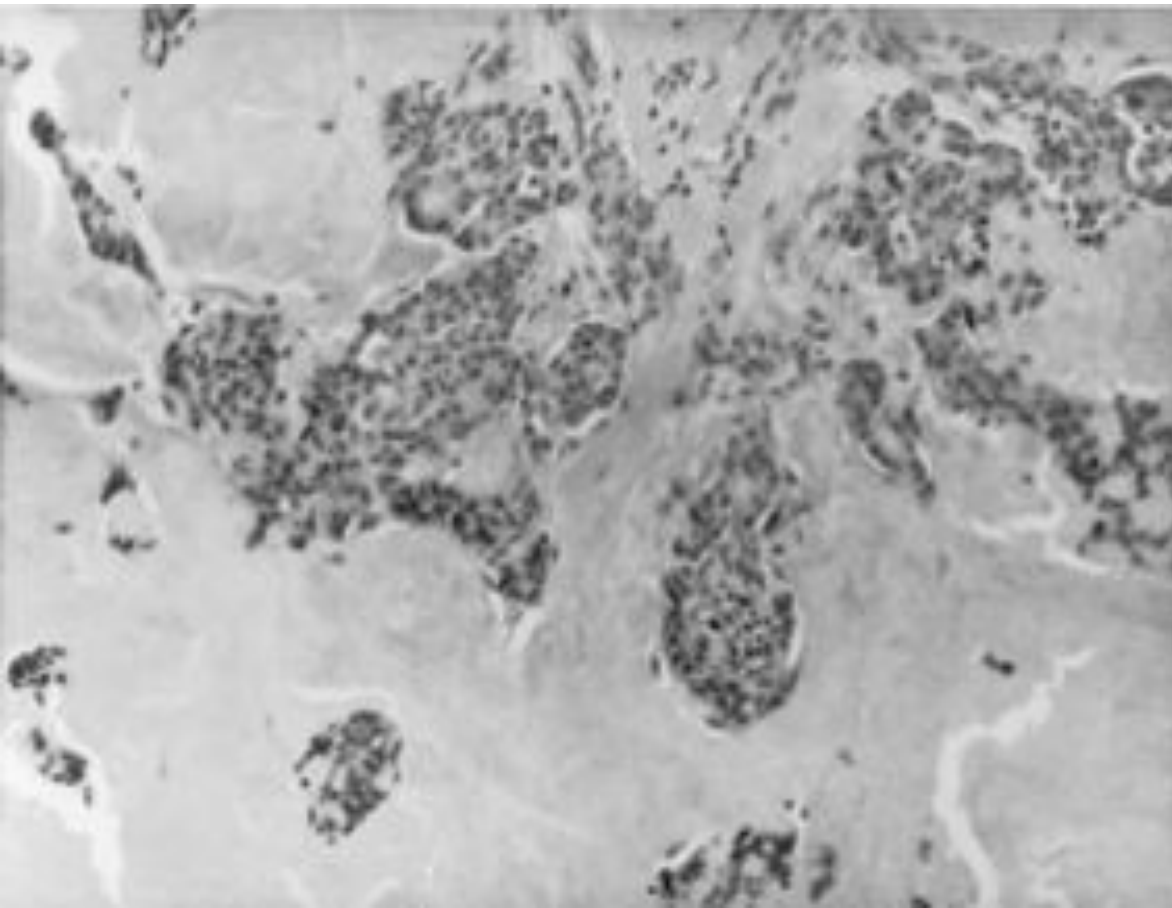
# Answer

The answer is e.

Increased serum cortisol, which produces clinical symptoms of Cushing's syndrome, may be secondary to excess ACTH production or independent of ACTH production. Causes of increased cortisol levels that are independent of ACTH (box E in the diagram) may involve abnormalities of the adrenal gland itself, such as a cortical adenoma or cortical carcinoma, or they may involve exogenous (iatrogenic) corticosteroids. Increased cortisol levels that are dependent on ACTH are associated with excess ACTH production (box B in the diagram) and may result from an abnormality of the pituitary itself, such as a tumor of the anterior pituitary (Cushing's disease), or from the ectopic production of ACTH outside of the pituitary, such as paraneoplastic syndromes, one example being small cell carcinoma of the lung.



Case.3 A 37-year-old man presents with a single, firm mass within the thyroid gland. This patient's father developed a tumor of the thyroid gland when he was 32 years of age. Histologic examination of the mass in this 37- year-old man reveals organoid nests of tumor cells separated by broad bands of stroma, as seen in the photomicrograph. The stroma stains positively with Congo red stain and demonstrates yellow-green birefringence.

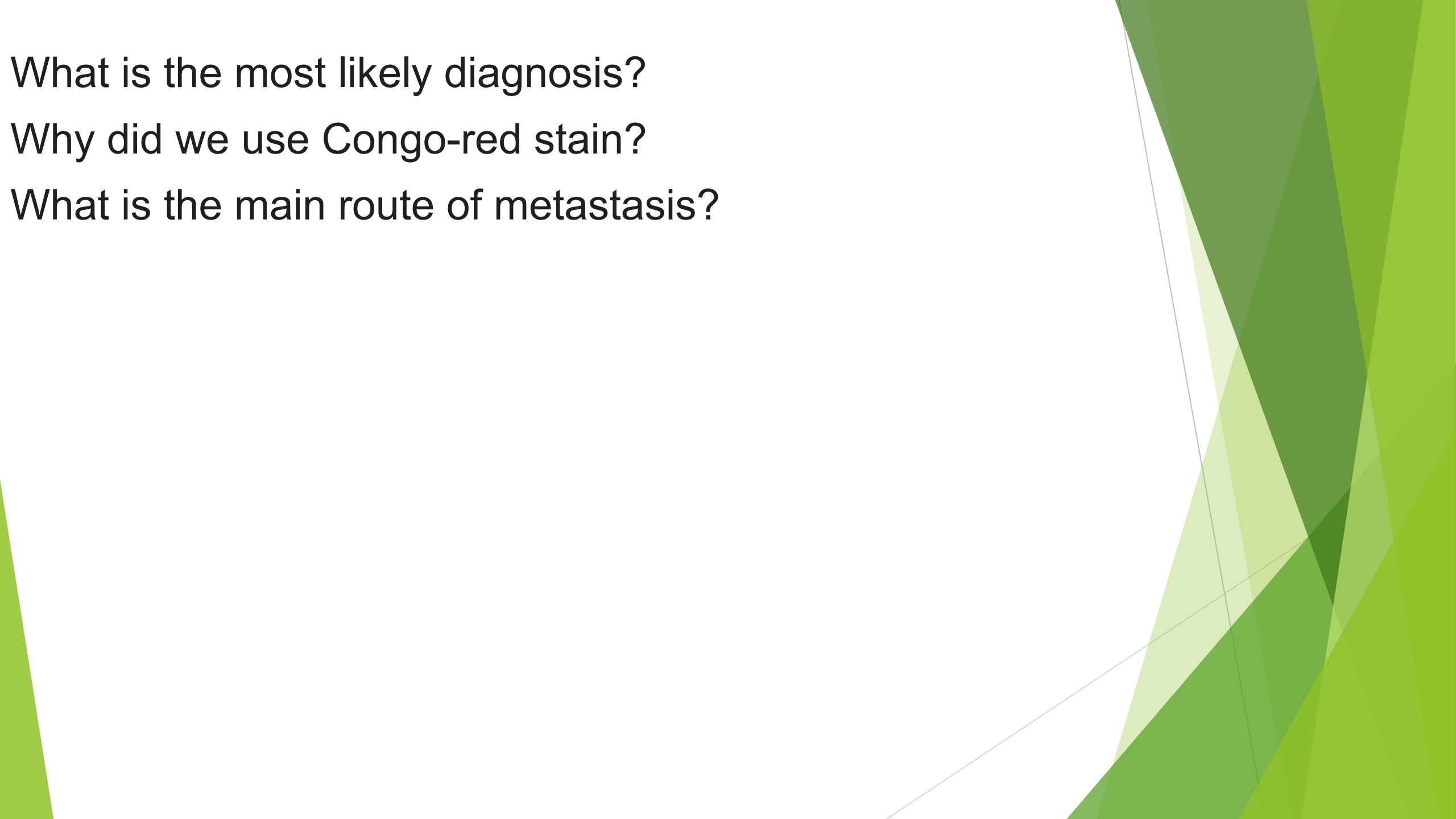




What is the most likely diagnosis?

Why did we use Congo-red stain?

What is the main route of metastasis?



# Answer

The development of a thyroid mass in a young person who gives a familial history for a similar lesion should raise high clinical suspicion of the possibility that the mass is a medullary carcinoma of the thyroid (MCT). MCT is a tumor of the parafollicular (C) cells of the thyroid and as such is associated with secretion of calcitonin.

The procalcitonin is deposited in the stroma of the tumor and appears as amyloid, which stains positively with Congo red stain. The tumor cells have peripheral nuclei that give them a plasmacytoid appearance when viewed cytologically with fine-needle aspiration (FNA).

The main route of spread is hematogenous.