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Young Child With Thyroid Follicular Neoplasm: - A Case Report

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Abstract

A 6yr young girl child presented with swelling in front of neck .The girl was evaluated thoroughly and after doing clinical and pathological investigation she was diagnosed with follicular neoplasm of Bethesda grade IV. She has been started on thyroxine and the swelling is responding to it well. Although follicular neoplasm is seen very rarely in this age group and moreover conservative response obtained is good too.

Keywords

Follicular carcinoma, neck swelling, thyroid neoplasm, Bethesda grading and thyroxine.

Introduction

Thyroid carcinomas, especially thyroid follicular carcinoma, are rare in young people. Papillary carcinoma in the thyroid accounts for about 90% of thyroid carcinomas, and follicular carcinoma account for 10% of thyroid cancers and occur more commonly in iodine deficient areas. Women have a higher incidence of follicular cancer, with a female-to-male ratio of3:1, and a mean age at presentation of 50 years old.[1] Herein, I introduce a case of juvenile thyroid follicular carcinoma responding well to thyroxine.

Case Presentation

A 6yr old child from Raniyamau, Barabanki ,Uttar Pradesh presented with painless neck swelling localized in front of neck and noticed 6months back.(Fig A)It was gradually increasing in size and there is no compressive symptoms associated with it. Personal history suggests intake of gota namak (iodine deficient salt). Her elder brother too has neck swelling. There is no past history but after clinical evaluation ultrasound was done. Left lobe of thyroid – hyperechoic nodule (TIRADS3)-well defined smooth outline, size-38x37mm, predominantly solid with cystic component, no micro/macro calcification / any echogenic foci seen.

Isthmus 14mm and right lobe 27mm are bulky with few ill-definedisoechoic nodular lesions. Multiple subcentimetric left sided neck lymph nodes noted.(Fig B). Endocrine examination reveals that child is hypothyroid (Fig C). Chest x ray shows that trachea is in the midline and no retrosternal extension is present. Based on fine needle aspiration Cytological examination Follicular neoplasm Bethesda category IV is suspected (Fig Di –iv). Currently child is on low dose of thyroxine and swelling is reducing in size. She is under follow up (FigE).

Fig A

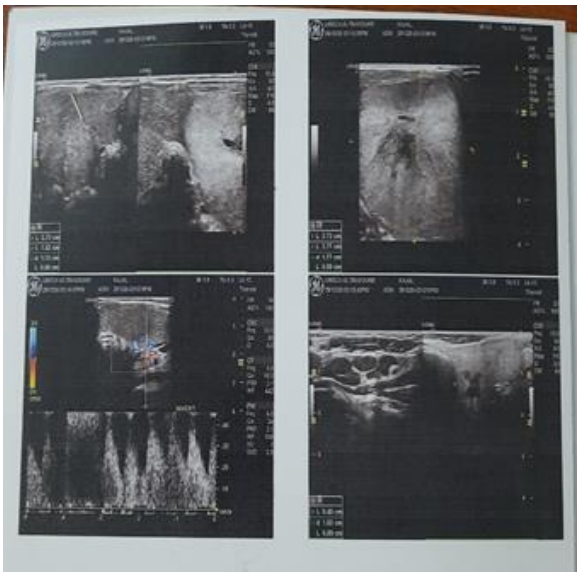

Fig B

- Triiodothyronine total (T3)- 0.37ng/ml (Ref-1.05-2.07)
- Thyroxine total (T4)- 1.10microgm/dl (Ref- 6.1-12.6)
- Thyroid stimulating hormone (TSH) - >150micro IU/ml (Ref- 0.37-5.90)
- S. Calcium- 11.38 mg/dl (Ref -8.2-16.5)

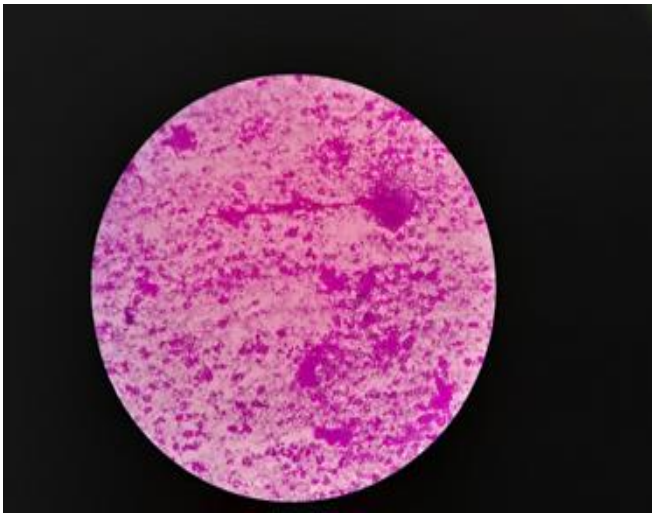

Fig D i-Smears are cellular (4x)

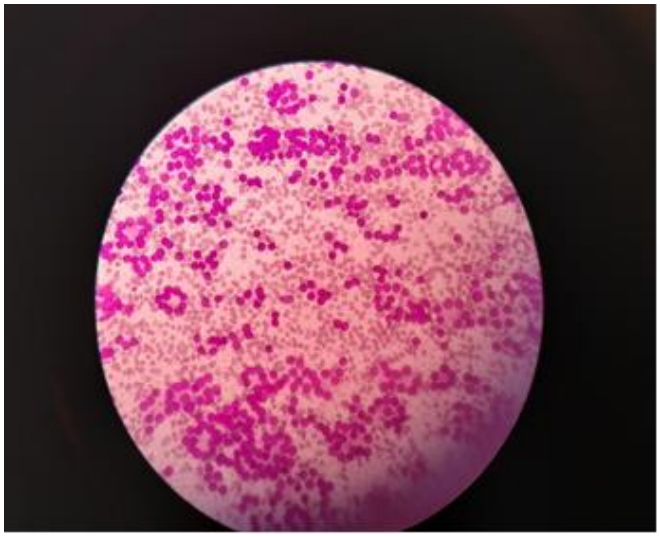

Fig D ii-Many uniform sized follicular cell clusters, microfollicles and rosette formation (10 x)

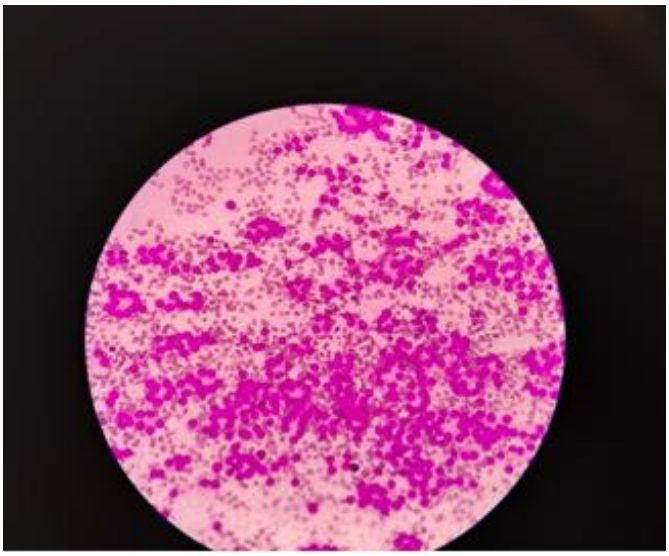

Fig Diii-Syncytial aggregates , nuclear crowding and overlapping are also often seen.(10X)

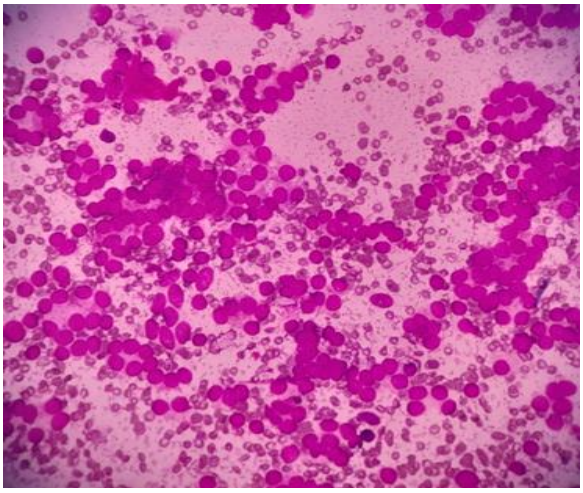

Fig Div-Cells having round nuclei , inconspicuous nucleoli and scant amount of cytoplasm (40X).

Fig E

Discussion

Children and adolescents represent 1-1.5% of all patients with thyroid cancer (TC). The vast majority of Thyroid cancer in children and adolescents is papillary Thyroid cancer; follicular Thyroid cancer (FTC) is exceedingly rare but the outcomes are similar to those observed among adults. Vascular invasion is poor prognostic indicator in pediatric/adolescent FTC patients[2]

Relating to areas with an iodine deficiency or affected by radioactive fallout, where the risk of nodules and carcinomas is increased. Therefore, it is a great challenge for the physician to distinguish between benign and malignant lesions preoperatively, and not only in these areas of greater risk. A careful work-up, comprising the patient's history, clinical examination, laboratory tests, thyroid ultrasound, scintigraphy, fine-needle aspiration biopsy (FNAB) and molecular studies, is mandatory to improve the preoperative diagnosis.[3]

Childhood-onset thyroid carcinoma is a more metastatic and aggressive local disease than thyroid carcinoma in adults.[4] Therefore, management of thyroid nodules in children needs more attention than that in adults, and early detection is important. Nevertheless, children with thyroid carcinoma, especially those with follicular carcinoma, have a relatively good prognosis even if they have neck or distant metastasis.[5] In addition, the general development and thyroid function of children born from mothers with childhood-onset thyroid carcinoma do not seem to be affected by their former diseases.[6]

Not only thyroidectomy but also radioiodine ablation can be chosen as treatment for childhood-onset thyroid carcinoma. Although radioiodine therapy is effective even for inoperable cases and adjuvant radioiodine therapy has been reported to reduce the risk of loco regional and distant recurrence[7]

Therefore, the balance of benefits and risks should be carefully considered. Pediatric follicular carcinoma has a lower frequency of metastasis and a lower grade of malignancy than those of papillary carcinoma.[8]

In this rare case follow up is important and monitoring of the size of the swelling is needed. If compressive symptoms seen or any sign of malignancy is observed then we will proceed for total or partial thyroidectomy. Serial work up will be conducted during this follow up period.

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