

Paediatric Papillary carcinoma of thyroid: Tale of two young cases diagnosed on cytological smears

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Abstract

Thyroid nodules are less common among children than among adults. By contrast, thyroid nodules are more often malignant in childhood than in adulthood. We report two cases of papillary thyroid cancer in young patients; one 9 years old child and the other 13 years old who presented with lateral neck mass. Both the cases were diagnosed on cytology.

Introduction

Papillary thyroid cancer can occur at any age, but most often it affects people ages 30 to 50. ^[1] Thyroid cancer is a rare pathology in childhood and adolescence being responsible for 1.5–3% of all carcinomas in this age group. However, in teenagers, this prevalence may reach 13% ^[2]. When compared to adults, children have four times greater risk of malignancy when a thyroid nodule is diagnosed. Age is an important prognostic

factor in papillary thyroid cancer (PTC), with better survival observed in patients <45 years of age, regardless of stage. ^[3]

We report two cases of PTC in young patients; one 9 years old child and the other 13 years old who presented with lateral neck mass.

Case No.1

A 9 year old female child presented with painless and gradually increasing thyroid swelling for last one and half months. Thyroid hormone profile was within normal limits. On physical examination a 4 x 3 cm. firm, non-tender swelling in front of the neck moving with deglutition was observed. USG neck revealed heterogeneously enlarged right lobe of thyroid. Fine needle aspiration cytology was done and bloody aspirate was obtained.

Case No.2

A 13 year old male presented with painless swelling on right side of neck for last 7 months. No thyroid enlargement was noted. Physical examination revealed a 2 x 1 cm. firm non tender swelling on the right side of neck. Thyroid hormone profile was done later which was within normal limits. USG neck revealed an ill-defined hypoechoic nodule. No abnormality was revealed in the thyroid gland. Fine needle aspiration cytology was done and bloody aspirate was obtained.

The cytomorphological examination of aspirates of both cases were almost same and revealed moderately cellular smears with follicular epithelial cells in flat sheets, 3 dimensional fragments and papillary fragments. These cells have enlarged round to oval nucleus with powdery chromatin few showing intranuclear cytoplasmic inclusions and nuclear grooving. However no psammoma bodies were seen in any of the two cases. Smears also showed thick and thin colloid in the background of case 2.

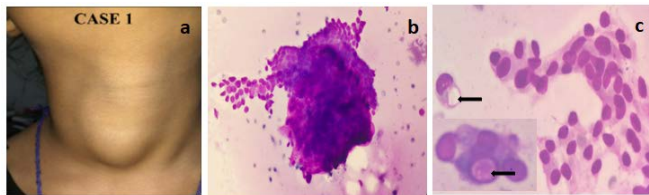


Figure 1: 1a . rm, non-tender swelling in front of the neck of 9 years old girl. 1b. 3-D dimensional papillary fragments. 1c. The cells showing enlarged round to oval nucleus with powdery chromatin few showing intranuclear cytoplasmic inclusions (black arrows) and nuclear grooving.

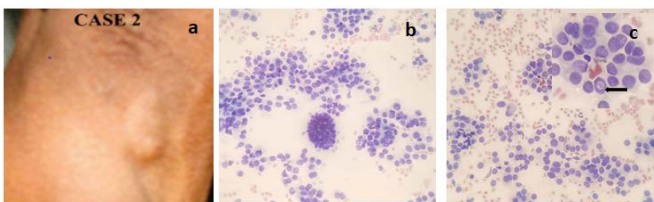


Figure 2a. A 2 x 1 cm. firm non tender swelling on the right lateral side of neck in 11 years old boy. of the neck of 9 years old girl. 2b. 3-D dimensional papillary fragments. 2c. The cells showing enlarged round to oval nucleus with powdery chromatin few showing intranuclear cytoplasmic inclusions (black arrow) and nuclear grooving.

Discussion: Papillary carcinoma of thyroid represents 90% of paediatric thyroid cancer cases and in the literature the average age of presentation is sixteen years.^[1] However both our patients were younger than 16 years. The risk factor for paediatric thyroid cancer includes family history and radiation exposure.^[4] Both of our cases were not associated with any such past history. A lateral thyroid swelling can be the initial manifestation of occult primary carcinoma.^[5] Our case no. 2 was an 11 year boy who presented with a lateral neck swelling on right side of the neck. No thyroid abnormality was noted at presentation. The cytological features were consistent with papillary carcinoma of thyroid in both cases.

Conclusion

Palpable thyroid abnormalities in children should be viewed with a suspicion and worked up for possible malignancy. Any lateral cervical swelling should be thoroughly examined along with thorough physical examination of head and neck. The radiological investigations and FNAC should be performed to determine the diagnosis for a lateral cervical swelling. Paediatric papillary thyroid cancer can have an aggressive clinical course.

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