Case Report

Aerodigestive Tract Invasion by Well-differentiated Thyroid Carcinoma presenting as Anemia: A Case Report

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Abstract

Papillary thyroid carcinoma, is the commonest histologic subtype of thyroid malignancies .It is also renowned for its best prognosis.Invasion of aero digestive tract is commoner with the anaplastic histologic variant.This invasion leads to obstructive (dysphagia) or erosive(hematemesis) symptoms commonly. Invasion of aero digestive tract by well differentiated thyroid cancer presenting with anemia is one of the rarest occurrence. We, report a case of 68 year old female presented with features of iron deficiency anemia and stool Occult Blood Test positive. On further evaluation was observed to have an esophageal growth, which when biopsied was confirmed as papillary carcinoma of thyroid gland.

Keywords:

papillary thyroid carcinoma, anemia, aero digestive

Introduction

Papillary carcinoma is the most common carcinoma of thyroid, more so most common endocrine malignancy. However, it infrequently invades the upper aero digestive tract. Several studies have reported that the incidence of extra thyroid extension of well-differentiated thyroid carcinoma is between 3 and 16%, excludes anaplastic carcinoma, and is considered a poor prognostic indicator of survival, together with patient age, distant metastases, size of the primary tumor and completeness of resection.[1]

If cases of invasion into strap muscles alone are eliminated, the incidence of laryngotracheal or esophageal invasion by cell histologic subtypes is approximately 5-7%.[2] Furthermore, when cases of anaplastic carcinoma are excluded, the incidence of invasion of upper aerodigestive tract by well differentiated thyroid carcinoma is less than 4 %.

We report a case of esophageal invasion by papillary thyroid carcinoma which came for further evaluation of diagnosed Iron deficiency anemia.

Case Report

A 68-year-old known diabetic and hypertensive female patient, diagnosed case of iron deficiency anemia was admitted in our hospital for further evaluation and management. At admission her Hemoglobin was 10.8gm/dl (post transfusion).

On further clinical evaluation, coagulation profile was within normal limits, Carcino Embryonic Antigen and CA19-9 were within range and stool occult blood test was positive. Hence, she was referred for a gastro-enterology opinion. Both upper gastrointestinal endoscopy and colonoscopy were done. Upper gastrointestinal endoscopy showed a polypoidal upper esophageal lesion which was further biopsied. Colonoscopy showed anal internal hemorrhoids.

Biopsy opined presence of tumor composed of complex papillary structures lined by malignant epithelial cells with mildly pleomorphic hyperchromatic nuclei and scant cytoplasm. [Figure 1,2] The tumor cells were positive for Thyroglobulin. Hence a diagnosis of Papillary carcinoma of thyroid gland was made.

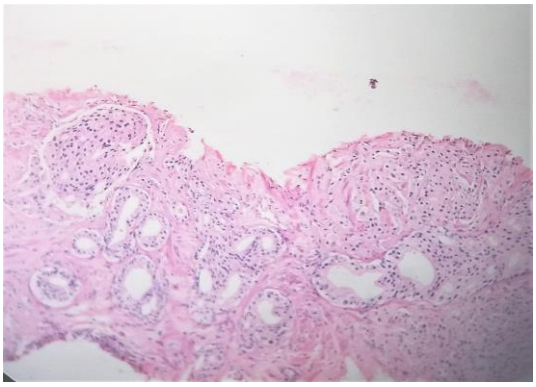

Figure 1 H & E ,10 X .Section shows tumor composed of complex papillary structures lined by malignant epithelial cells with mildly pleomorphic hyperchromatic nuclei and scant cytoplasm

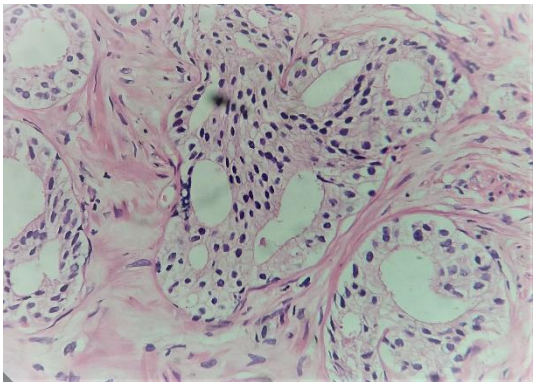

Figure 2 H& E ,40 X.Section shows complex papillary and cribriform structures lined by cells with mildly pleomorphic hyperchromatic nuclei and scant to moderate cytoplasm in a desmoplastic stroma.

To establish it as metastasis or direct extension from thyroid. A Positron Emission Tomography scan was done. Positron Emission Tomography scan showed a large Fluorodeoxyglucose avid heterogeneously enhancing mass involving both lobes of thyroid gland

with mediastinal extension, infiltrating and compressing the cervical and proximal thoracic esophagus and pushing it to the left side infiltrating the prevertebral fascia and posterior ring of cricoid cartilage. The mass extends from level of C3-D2 vertebrae and measures 54x61x87mm. [Figure 3]

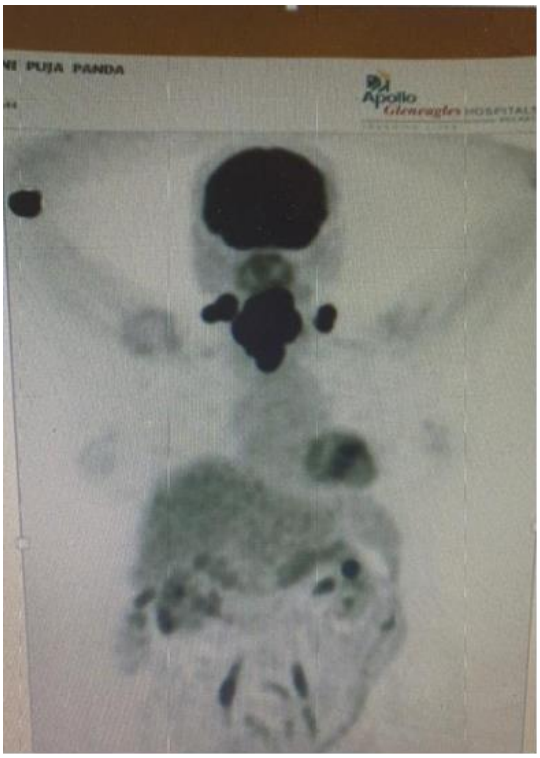

Figure 3 PET(Positron Emission Tomography) scan showed a large Fluorodeoxyglucose avid heterogeneously enhancing mass involving both lobes of thyroid gland with mediastinal extension, infiltrating and compressing the cervical and proximal thoracic esophagus and

After taking into consideration the above relevant details, a diagnosis of Papillary carcinoma of thyroid with extra thyroid extension to aerodigestive tract was made.

Discussion

Well differentiated thyroid carcinoma infrequently invades the upper aerodigestive tract. The most common site of extra thyroid extension into the overlying strap muscles alone are eliminated, the incidence of laryngotracheal or esophageal invasion by all histologic subtypes is approximately 5-7%.[2] Furthermore, when cases of anaplastic carcinoma are excluded, the incidence of invasion of the upper aerodigestive tract by well-differentiated thyroid carcinoma (papillary and follicular subtypes)is less than 4 %.

In our case aerodigestive extension was intraluminal. Proximity of structures in the neck makes it possible but the presenting complaint of anemia is unique. Commoner symptoms of papillary thyroid carcinoma with aerodigestive extension are hoarseness of voice, dysphagia, or hemoptysis.

Although ultrasound is the gold standard imaging for lesions of thyroid, yet in cases with strong degree of suspicion undergo Computerized Tomography scan or Magnetic Resonance Imaging.[3] In our case upper Gastrointestinal endoscopy was done

followed by Positron Emission Tomography scan to evaluate the extension of the tumor since the tumor in thyroid was made retrograde.

Dysphagia is the commonest presentation of esophageal extension, but in our case occult blood in stool was the only gastrointestinal sign.

Esophageal invasion is relatively more innocuous than airway involvement. Because of the relative resistance of the esophageal mucosa to invasion, gross intraluminal involvement of the esophagus rarely occurs. However, tumours readily penetrate through esophageal musculature and cause dysphagia secondary to the compressive effects of the tumor mass on the underlying mucosa.[3]

In this case, patients presented with anemia which when further evaluated, stool occult blood test came to be positive. This was the isolated gastro-intestinal symptom which led to endoscopy and colonoscopy.

Although ultrasound is the gold standard for imaging thyroid masses, it is of limited use in the evaluation of upper aerodigestive tract invasion by well-differentiated thyroid carcinoma. Ultrasound may not detect the subtle signs of invasion that both computed tomography and magnetic resonance imaging can detect. In our case Positron emission Tomography scan was done which showed the extent of tumor infiltration and invasion.

De novo invasive thyroid carcinoma is rare; in the majority of cases, patients have received prior treatment for thyroid cancer, including surgical resection and postoperative iodine-131(I 131) or external beam radiotherapy.[4]

This case reported herein is unique in its presentation. It presented with anemia, which when worked up leads to the incidental diagnosis of well differentiated papillary thyroid carcinoma.

Conclusion

Though rare, invasive, well differentiated thyroid carcinoma is associated with a high incidence of morbidity and mortality. Structures commonly invaded by thyroid carcinoma include the strap muscles, larynx, trachea, esophagus, and recurrent laryngeal nerve. Common symptoms are stridor, hoarseness, hemoptysis, and dysphagia. However presenting with anemia as a symptom is exceptionally rare.

This case is reported for its rarity of presenting complaints which led to the diagnosis of a very common malignant tumor.

References

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