

Cystic Lymph Node Metastases in Papillary Thyroidcarcinoma

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1. Introduction

- Papillary thyroid carcinoma {PTC} - Mostcommon (75% to 90% cases)
- HIGHEST PREVELANCE - 3 rd and 7th decade
- ROUTE OF SPREAD - Cervicallymph nodes [lymphatic]
- PRESENTATION OF PTC: Patient may have enlarged cervical lymph nodes and apalpably normal thyroid gland. {occultPTC}
- Nodal metastases of PTC - either solid or cystic masses.

Aims

- 1) To illustrate and discuss sonographic spectrum of surgically proven cystic lymph node metastases from papillary thyroid carcinoma with pathologic correlation.
- 2) To study the USG findings that facilitate the differential diagnosis of these cystic lymph node metastases from benign cystic lesions of neck

2. Materials and Methods

A retrospective analysis of sonographic examinations of 10 patients, 7 women and 3 men with 20 histologically confirmed cystic lymph node metastases from papillary thyroid carcinoma was done.

Inclusion Criteria

- 1) Patients of PTC with cystic lymph node metastases
- 2) Age Group - 24 to 80 years

Exclusion Criteria: Patients with other type of thyroid cancers like medullary and anaplastic cancer.

Pre – Operative workup: All the 10 patients underwent sonographic examination of the neck and fine needle aspiration biopsy of cystic lymph nodes was done.

Technique:

1) USG:

High frequency linear array transducer {7.5 to 15 MHz} with rectangular scan format were preferred over sector transducers because of the wider near field of view and the capability to combine high frequency gray scale and color Doppler images.

2) Fine Needle Aspiration Biopsy:

A sonographically guided fine needle aspiration biopsy using a 25 gauge bevelled biopsy needle attached to a syringe with capillary action or minimal suction is performed in all patients for each lesion.

Cystic degenerated lymph nodes are qualitatively characterized as simple or complex. The anatomic relationship of the nodes relative to the primary tumor is made.

3. Results

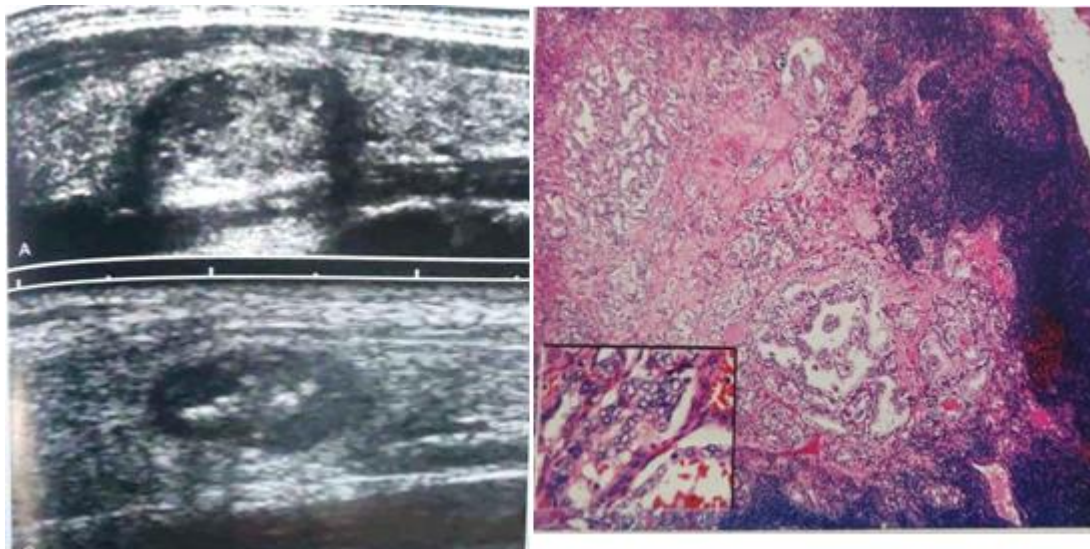
- USG neck examination of **10 patients {7 women , 3 men}** with papillary thyroidcarcinoma was done. They had 20 cystic lymph node metastases on USG and confirmed histologically after fine needle aspiration biopsy.
- **8 lymph nodes** seen in 4 patients were **purely cystic. 12 lymph nodes** seen in 6 patients were **complex** on USG.
- The diagnosis of cystic lymph node metastases was suspected in only 1 patient of the 4 purely cystic lymph node metastases on USG alone and remaining 3 were assumed to be benign cystic neck lesion like branchial cyst. On fine needle aspiration biopsy, cystic metastases in lymph nodes was seen in 3 patients and only 1 patient had branchial cyst.
- **8 out of 20 cystic lymph nodes tend to cavitate by cystic degeneration** and mimic benign cervical cyst.
- Multiple cystic metastatic nodes or solid lymph node mets are easy to differentiate from branchial cleft cyst. In our study only 8 out of 20 lymph nodes were purely cystic on sonography and all of these were found in less than 35 yrs old patients so should be **differentiated from branchial cysts**.
- In our study **most lymph nodes were complex (12 out of 20)**, so they must be differentiated from non infected branchial cysts. Internal septations, nodules, thick outer wall not found in non infected branchial cyst.
- **Punctate calcifications are a typical finding in PTC**, That helps to differentiate from other cystic neck lesions.
- Another way to differentiate cystic nodal metastases from benign cystic neck lesion is to identify the primary tumor. In young patients with no visible primary tumor, any cervical cystic lesion is addressed as branchial cleft cyst
- 16 to 17 cystic lymph node metastases were ipsilateral to the tumor

They were mostly located in the lower jugular chain.

- Primary thyroid tumor was palpable in 7 out of 10 patients. Nodal metastases was palpable in 5 out of 10 patients.
- After FNAB, 9 patients underwent partial thyroidectomy, 11 patients underwent complete thyroidectomy. 15 patients had partial neck dissection, 5 had radical neck

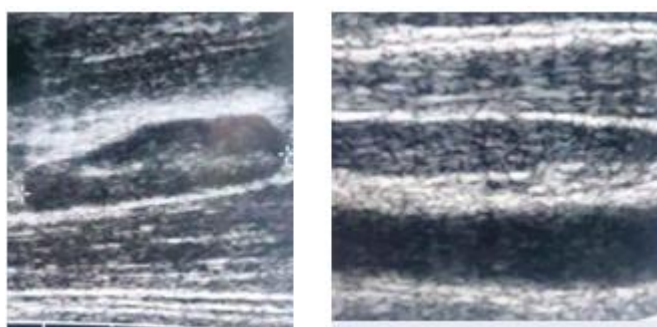
dissection.

USG Findings OFPTC	Histopath Findings of PTC
1. HYPOECHOGENECITY is seen in 90% cases due to closely packed cell content.	1. Fibrous capsule and micro calcifications seen
2. MICROCALCIFICATIONS appear as tiny punctate hyperechoic foci with or without acoustic shadow.	2. Ground Glass NUCLEI, CYTOPLASMIC Inclusion In Nucleus, Indentation of Nuclear Membrane
3. HYPERVASCULARITY is seen in 90% cases in well capsulated forms	3. PSAMMOMA BODIES

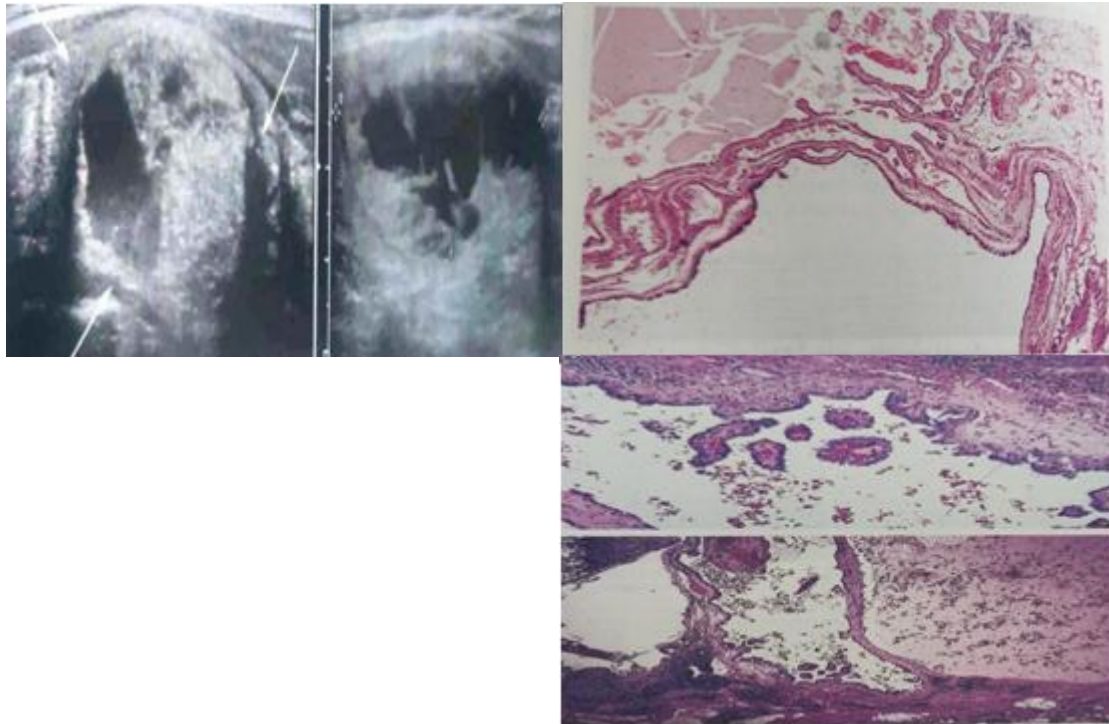


USG Findings of Complex Cystic Lymph Nodes	USG Findings of Solid Lymph Nodes	USG Findings of Benign Cervical Lymph Nodes	USG Findings of Maligna NT Cervical Lymph Nodes
1. INTERNAL SEPTATIONS SEEN IN 6 LYMPH NODES	1. DIFFUSE, HYPERVASCULARITY	1. SLENDER, OVAL SHAPE	1. ROUNDER
2. INTERNAL NODULES SEEN IN 5 LYMPH NODES	2. HIGH VASCULAR RESISTANCE	2. CENTRAL ECHOGENIC BAND THAT REPRESENTS FATTY HILUM	2. HAVE NO ECHOGENIC HILUM
3. CALCIFICATIONS SEEN IN ALL 12 LYMPH NODES			
4. THICKENED OUTERWALL SEEN IN 4 LYMPH NODES			

Cystic Degeneration in Neck



Lymph Nodes on USG Andhistopath



Branchial Cyst

4. Conclusion

- Cystic lymph node metastases may occur in papillary thyroid carcinoma and are sonographically characterized by the presence of **thickened outer wall, internal echoes, internal nodularity** and **internal septations** in most patients.
- In **younger patients**, the lymph nodes may appear as **purely cystic** metastases mimicking branchial cleft cysts.
- The presence of a **solitary asymptomatic lateral cystic mass, especially with a complex sonographic texture** should alert the sonographer to the possibility of a metastases from an occult thyroid carcinoma and subsequent assessment of thyroid gland.
- In case of an **occult primary carcinoma** or in case of doubt, one should verify cystic neck lesions with fine needle aspiration biopsy

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