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## Solitary Thyroid Nodule

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Solitary nodules of the thyroid gland are rare in pediatric age group(1-3). The primary aim in their management is to rule out the presence of malignancy which occurs in 14(4) to 57%(5) of cases. Clinically it is difficult to differentiate between benign and malignant lesions. Two cases of this lesion are presented highlighting the problems related to their diagnosis and management.

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## Case Reports

*Case 1:* An 11-year-old boy presented with swelling in front of neck for 2 months and dysphagia for 2 weeks. He was clinically euthyroid. There was mild thyromegaly and a 2 × 2 cm firm non-tender nodule in the right lobe, moving side to side and with deglutition. A RAI (radioactive iodine) scan showed a cold nodule in the right lobe and aspiration cytology revealed only a few follicular cells. In view of the short history of dysphagia and a cold thyroid scan, thyroid malignancy could not be ruled out. A right hemithyroidectomy was done which histologically proved to be a benign thyroid adenoma.

*Case 2:* An 11-year-old girl presented with swelling in the front of neck for one month. She was clinically euthyroid.

The overlying skin on the thyroid was indurated, a solitary nodule 4 × 2 cm in size was present in the right lobe of the gland, firm, tender moving side to side with deglutition. There was no significant lymphadenopathy. Thyroid scan revealed a cold nodule in the right lobe and on aspiration cytology only a few follicular cells were found. In view of the clinical findings and the report of thyroid scan a provisional diagnosis of thyroid malignancy was made and the gland was explored. The tissues around the right lobe were indurated and on dividing the strap muscles whole of the right lobe was found to be replaced by thick pus. Right lobectomy was done and the histopathology showed evidence of chronic non specific abscess with mild hyperplasia.

## Discussion

Rare solitary thyroid nodules continue to present problems in diagnosis(4). It is

almost impossible to differentiate between benign and malignant lesions clinically. Suspicion of malignancy is raised in the presence of enlarged lymph nodes(5).

Laboratory evaluation, thyroid scintiscanning(4), ultrasonography and CT scan(6) are equally deceptive in differentiating between benign and malignant nodules. Nuclear scan can differentiate between hot and cold nodules with precision(7).

Incidence of malignancy on histology in cold nodules varies between 18.5%(4) and 30%(5). It is a well known fact that the conversion of a hot nodule to cold during serial examinations indicates either hemorrhage or malignancy. However, nuclear scan cannot differentiate between malignant and benign lesions(6), as was observed in our patients also. Solid and cystic lesions can be accurately differentiated by ultrasonography(8). It may detect lesions measuring over 1 cm in diameter and may differentiate between localized and more diffuse thyroid lesions. However, even ultrasonography cannot distinguish between carcinoma and benign nodular lesions, since as high as 50% of the malignant nodules may be cystic(6).

Needle biopsy of thyroid nodules is a commonly used procedure. False negative and false positive results have been frequently reported. False negatives are usually associated with an occult primary carcinoma or a mis-diagnosed follicular adenoma on cytologic and frozen sections which proved to be a follicular carcinoma on permanent sections(6). Hence, the final diagnosis is only established after surgical intervention and pathological examination whereas laboratory and modern thyroid imaging diagnostic techniques have limited usefulness. Our recent experience with such cases emphasizes the necessity of

cooperation between pathologist and surgeon and the need to improve our methods of diagnosis.

The recommended procedure for thyroid nodules of 2 cm or less in diameter is lobectomy and isthmectomy(9). For larger lesions and follicular carcinoma with major capsular invasion and lymphnode metastases, a near total thyroidectomy should be done with later radioactive iodine therapy(10). Total thyroidectomy is reserved for medullary carcinoma only(9). In papillary carcinoma more extensive thyroid surgery followed by radioactive iodine therapy should be reserved for patients demonstrating pulmonary metastases. Multiple lymphnode metastases are an indication for regional node dissection preserving the sternomastoid(10).

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## Unusual Complications in a Multidrug Resistant *Salmonella typhi* Outbreak

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A sudden change in the clinical profile of typhoid fever was noticed in Bangalore city during September and October, 1990. Prolonged fever inspite of standard antibiotics, multidrug resistance and unusual

complications were seen in these patients. A detailed analysis of this clinical material is presented.

### Material and Methods

Fifteen children, ages ranging from 1½ to 12 years were admitted with typhoid fever in the pediatric ward of St. John's Medical College Hospital, Bangalore, over a period of two months. Clinical features, laboratory investigations and response to treatment were studied.

The diagnosis of typhoid fever was based on clinical picture supported by the laboratory parameters: (i) isolation of *S. typhi* from blood; (ii) a four fold rise in widal agglutinins; (iii) a single 'O' and 'H' titre of 1/160 or more.

### Results

In our series, male to female ratio was 4:1. A total of 73.3% of cases had continuous fever, 20.0% had remittent fever and 6.7% had intermittent fever. Before admission to our unit, 40% had fever of 5-10 days, 40.0% had fever for more than 10 days. The remaining 20% were admitted within 5 days of fever onset. Fever persisted for an average of 6-7 days after instituting culture and sensitivity based drugs. Total duration of fever ranged from 11-42 days. *S. typhi* was isolated from blood in 60% cases. All the culture negative cases had received prior antibiotics. The average duration of fever in culture positive cases was 24 days and in culture negative cases 20 days. However, this was not statistically significant. Multidrug resistance was noted in 88.9% of cases. The *in vitro* antibiotic sensitivity pattern as assessed by method of Kirby-Bauer and unusual complications are shown in Tables I & II.

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