

inflamed and bled on probing. The tongue movements were however normal and there was no significant lymphadenopathy. Hematological profile was within normal limits. Intra-oral periapical X-ray was essentially normal.

A conservative excision of the mass, sparing the teeth was done. Histopathological examination revealed bundles of interlacing collagenous fibres interspersed with fibroblasts, fibrocytes and small blood vessels. The surface was covered by a layer of stratified squamous epithelium which showed shortening and flattening of rete pegs. A diagnosis of gingival fibroma was made. The patient was followed up till 3 months after discharge and showed no recurrence.

## Discussion

The gingival fibroma is more common in females and the average age reported is 34.16 years(2). Our case was a male child only 8 years old. The cell of origin for gingival fibroma may be the submucosa, the outer layers of periosteum and periodontal membrane(3). Poor oral hygiene causing chronic gingivitis becomes a cause for chronic irritation stimulating proliferation of the fibroblasts which ultimately lead onto form the fibroma(4).

After excision, the fibroma may recur in about 8.9% of cases(2). Our child was followed up for 3 months after surgery and showed no recurrence.

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## Follow-up of Children Surgically Treated for Nodular Goitre

M. Oğuz

A. Oğuz

F. İçli

M. Dülger

A. Ünal

The incidence of nodular goitre varies between 1.8 and 6.0% in childhood(1-6). Thyroid nodules carry a high risk for carcinoma even in the hyperfunctioning nodules(1,2). Hopwood *et al.*(2) identified a carcinoma in one of four patients with hyperfunctioning nodules. Very little data is available on the long term follow-up of patients subjected to thyroidectomy for benign nodular disease. Thus no precise information is available on the type of operation to be carried out and the nature of postoperative therapy needed in these children.

*From the Departments of General Surgery, Pediatrics and Hormone Research Laboratory, Medical Faculty, Cumhuriyet University, Sivas, Turkey.*

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The long term follow-up of 17 patients subjected to thyroidectomy for benign nodular goitre is presented here. Patients with hypothyroidism and diffuse hyperplasia were not included in this study.

### Material and Methods

Between January, 1981 and December, 1987, 17 patients were subjected to thyroidectomy. Their ages ranged from 9 to 17 (mean 12.3). Fifteen of these were girls.

### Results

The age, sex, diagnostic methods, the functional status of thyroid and the type of

goitre are shown in *Table I*. Except solitary nodules, all patients in this series were subjected to thyroidectomy due to large goitres (weight 150-400 g). A 9-year-old boy with a solitary nodule (No. 2) had follicular carcinoma and right total lobectomy, isthmectomy and left near total thyroidectomy was carried out.

Patients with solitary nodules were subjected to subtotal lobectomy plus isthmectomy while patients with multinodular goitre (MNG) disease were subjected to bilateral subtotal thyroidectomy regardless whether they were hyperthyroid or euthyroid. Aspiration biopsy were done pre-operatively in 10 patients and were normal (Nos. 8-17).

**TABLE I—** Age, Sex, Diagnostic Methods, Status of Thyroid Function and the Distribution of Solitary and Multinodular Goitres.

No.	Age	Sex	PE	Diagnostic measures	Functional state
1	9	F	MNG	PE	E
2	9	M	SN	PE	E
3	10	F	SN	PE+TFT	H
4	12	F	MNG	PE	E
5	17	F	MNG	PE	E
6	15	F	MNG	PE	H
7	12	F	MNG	PE+TFT	E
8	9	M	SN	PE+TFT	E (US solid)
9	14	F	MNG	PE+TFT	E
10	17	F	MNG	PE+TFT	E
11	12	F	SN	PE+TFT	E (US cystic)
12	16	F	MNG	PE+TFT	E
13	14	F	MNG	PE+TFT	H
14	10	F	MNG	PE+TFT	E
15	9	F	MNG	PE+TFT	E
16	10	F	MNG	PE+TFT	E
17	10	F	MNG	PE+TFT	E

F = Female, M = Male, SN = Solitary nodule, MNG = Multinodular goitre, PE = Physical examination, TFT = Thyroid function tests, E = Euthyroid, H = Hyperthyroid.

Ultrasonography (US) was carried out in 10 patients (Nos. 8-17). In two patients with solitary nodules a cystic (No. 11) and a solid (No. 8) lesion were identified, respectively. In the other eight patients with MNG both cystic and solid lesions were identified in combination.

In a patient with solitary nodule (No. 8) and in four patients with MNG (Nos. 14-17) scintigraphy showed cold lesions. In the patient with carcinoma none of these investigations could be performed preoperatively. This patient was treated in 1983. His thyroglobulin level was negative in 1987 and there was not any metastasis in bone scintigraphy in 1987. Examination of vocal cords and the determination of calcium and phosphorous levels were carried out in every patient both preoperatively and on the third postoperative day.

Thyroid function tests (TFT) were done preoperatively in 12 patients (Nos. 3, 7-17). The other five patients including the one with hyperthyroidism were diagnosed clinically. Tachycardia during sleep, muscle weakness, heat intolerance and warm feeling with large MNG helped in the diagnosis. Repeat, TFT were carried out after June 1985 and included total tri-iodothyronine (T3), thyroxine (T4) and thyroid stimulating hormone (TSH). All patients were controlled in June and July of 1988 with normal T3, T4 and TSH levels determined by radio immunoassay method. The normal values for T3, 0.8-2.7 nmol/L, for T4 62-105 nmol/L and for TSH are less than 5 IU/ml. These levels were determined once in a year after 1985.

Patients with hyperthyroidism were not administered any thyroidal drug during postoperative period. While euthyroid patients were placed on maintenance doses with 4  $\mu$ g/kg of thyroxine. The patient with carcinoma was administered 100 mg/day

of desiccated thyroid initially and dose increased to 200 mg/day in 1988 and his TSH level was less than 1 IU/ml.

During follow-up period, scintigraphy was not available in our region, but US was available after 1987 and did not show any remarkable finding and it was done every year. Also, during this follow up period fine-needle biopsy was not used.

Except the patient with carcinoma, histologic examination of other glands revealed colloidal goitres.

## Discussion

On physical examination, carcinoma was not suspected in any of the patients with the exception of the solitary nodularity. Generally, carcinoma can be suspected in patients having (a) rapid enlargement of the nodule of thyroid gland, (b) enlargement of the neck lymph nodes, (c) a hard nodule, (d) hoarseness, (e) paralysis of vocal cords, and (f) attachment of the gland to deep neck structures(3,5,7).

Our patients were operated due to large goitres. Generally the treatment offered is surgical excision of the lesion because of the increased risk of malignancy(3,4). They may also be given suppressive doses of thyroidal drugs especially in patients without any risk of carcinoma as detected by physical examination coupled with other diagnostic modalities(1,7,9). There are some studies showing that other risk of carcinoma is declining(6), even form the 2% of nodules during childhood(5). Cystic nodules greater than 4 cm in diameter, having bloody or brown fluid in aspiration also carry a high risk of carcinoma(8).

Both groups of patients with hyperthyroidism and euthyroidism during follow-up period were found in good condition. We

recommended that all patients subjected to thyroidectomy in euthyroid state should be given maintenance dose of thyroidal drugs. During follow-up period a careful physical examination is the most important step. Thyroid function tests could be used to presage the occurrence of hypothyroidism or recurrence of hyperthyroidism.

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## Lead Poisoning Due to Environmental Pollution

S. Bhatia  
S.K. Saxena  
R.L. Khatri  
A.K. Jain

Lead is one of the most ubiquitous elements present in man's immediate environment, *i.e.*, food, water, dust, air and soil. Such usual exposure which is about less than 120  $\mu\text{g}/\text{day}$  leads to normal blood lead level of 5-25  $\mu\text{g}/\text{dl}$  and this level does not cause any side effects(1-5).

Due to inappropriate exposure of lead, lead enters the human physiological system and causes lead poisoning which varies from asymptomatic cases leading to increased risk for future neurobehavior and acute lead encephalopathy(1,3).

Lead poisoning is a well known occupational hazard and major health problem due to increase in small scale industries in the residential area without any engineering control measures. Children suffer more than the adults during such exposures(1,6).

We report a case of lead poisoning due to environmental pollution.

## Case Report

An 11-month-old muslim girl presented with generalized convulsions and unconsciousness for half an hour. One hour after

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*From the Department of Pediatrics, Kasturba Hospital, Delhi 110 006.*

*Reprint requests: Dr. Sunita Bhatia, C-180, Sarvodya Enclave, New Delhi 110 017.*

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