disorders, as well as those with lesser degrees of disturbed eating, merit specialised help. Treatment approaches that deal with both the behaviour and attitudes characteristic of these patients seem to show promise.^{25 26}

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Risk of neoplasia and malignancy in "dominant" thyroid swellings

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Abstract

Objective—To determine the risk of neoplasia and malignancy in "dominant" thyroid swellings.

Design—Prospective analysis during six years.

Setting—Thyroid clinic serving the Grampian region.

Patients—574 consecutive patients presenting with a discrete thyroid swelling, of whom 179 (31%) were classified clinically as having a dominant area of enlargement within a multinodular gland.

Results—After clinical and cytological assessment 77 dominant swellings were excised. Of the excised swellings, 45 were non-neoplastic and 32 neoplastic, including 11 malignant lesions. The minimum incidence of neoplasia and malignancy in all 179 dominant swellings was therefore 18% and 6% respectively.

Conclusion—Dominant thyroid swellings should be regarded with greater clinical suspicion than has been traditional.

Introduction

Although thyroid swellings are common and most are benign, there is a substantial incidence of malignancy in isolated (solitary) swellings, usually quoted at about 20-30%.¹⁻⁴ Swellings associated with clinically palpable generalised abnormality of the thyroid are generally regarded with much less suspicion. In 1983 Beierwaltes stated, "If palpation reveals palpable enlargement of the ipsilateral lobe containing the nodule and of the opposite lobe also, the probability of the lesion being malignant decreases from 35-45% range to less than 1%."⁵

To distinguish swellings associated with (and presumably, in pathological terms, most likely part of) a generalised thyroid abnormality from clinically isolated swellings we have termed them dominant thyroid swellings. Previously the term dominant has apparently been used neither precisely nor consistently, and some authors use it interchangeably with solitary nodule⁶ or do not distinguish between isolated and dominant swellings in analysing data.⁷

Patients and methods

During six years (September 1981 to August 1987) all patients referred with a thyroid swelling to the surgical team at a joint medical and surgical thyroid clinic were entered into a prospective study. On the basis of clinical examination swellings were classified as isolated, dominant, or generalised. A discrete swelling was termed isolated if the thyroid was otherwise impalpable and dominant if there was evidence of a generalised abnormality, usually in the form of a palpable nodularity or enlargement of the contralateral lobe.

Fine needle aspiration cytology and histology—Fine needle aspiration cytology was performed routinely in the outpatient clinic as described⁸: that paper also gave details of cytological and histological interpretation and data handling.

Terminology and indications for operation—The term neoplastic embraces all follicular neoplasms as well as malignant lesions. According to histological criteria most follicular neoplasms are apparently benign, but careful histological study is the only means of detecting invasive features on which the differentiation between

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adenoma and carcinoma is based. In addition, it may be biologically unsound to categorise follicular neoplasms as benign and malignant.⁹ Our management aim was therefore to remove all neoplastic swellings. All swellings reported cytologically as malignant or possibly neoplastic, even if on only one of several aspirates, were excised. When the cytological picture was non-neoplastic a decision to operate was based on known clinical risk factors such as age, male sex, increase in size, and associated lymphadenopathy. We were also influenced by size, consistency, retrosternal extension, tracheal deviation and compression, and the patient's wishes. The inconvenience, according to distance, of continuing review and repeated aspiration was also a consideration, especially in patients from Orkney and Shetland.

Results

During six years 574 patients presented with discrete thyroid swellings, of which 179 (31%) were classified clinically as dominant and 395 (69%) as isolated. The isolated swellings were the subject of a separate paper with emphasis on the accuracy of cytology.⁸ Of the patients with dominant swellings, 167 (93%) were women and 12 (7%) men. Their modal age group was 50-60 years (median 51, range 18-82), and the modal swelling size was 2-4 cm in diameter. After clinical and cytological assessment 77 patients (43%) (71 women, six men) had the swelling excised.

Of the 77 excised swellings, 45 were non-neoplastic and 32 neoplastic, including eight malignant lesions (three papillary carcinomas, three follicular carcinomas, two lymphomas) and three occult carcinomas. Two of these were 0.7 and 1.0 cm in diameter and separate from the dominant mass; the third showed a small area of papillary change within a cystic swelling and was considered equivalent to occult carcinoma. The remaining 21 neoplasms were follicular adenomas (table I).

TABLE I—*Histological findings in 77 resected dominant thyroid swellings*

Histological findings	No of patients
Colloid degeneration	25
Colloid adenoma	13
Chronic lymphocytic thyroiditis	7
Follicular adenoma	21
Occult carcinoma	3
Malignant (papillary 3, follicular 3, lymphoma 2)	8

In six of the eight malignant lesions there was evidence of chronic lymphocytic thyroiditis (autoimmune thyroiditis, Hashimoto's disease). Both lymphomas were associated with thyroiditis, previously diagnosed in one case and evident histologically in the other. Adjacent thyroid tissue showed histological changes of thyroiditis in two of the three papillary carcinomas and one of the three follicular carcinomas (the microsomal autoantibody titre was strongly positive in another). The remaining two carcinomas were associated with colloid degeneration. One of the occult carcinomas was associated with thyroiditis.

The cytological and histological findings are compared in table II. In nine cases (12%) aspiration cytology was unsatisfactory. In three cases a cytological diagnosis of malignancy was made and was confirmed histologically in all. In analysing the accuracy of aspiration cytology in distinguishing neoplastic—that is, follicular adenoma together with malignancy—from non-neoplastic lesions the cytological criteria possibly neoplastic and malignant were taken together. Unsatisfactory aspirates and swellings associated with occult carcinoma were excluded.

TABLE II—*Cytological predictions and histological findings in 77 removed dominant thyroid swellings*

Histological findings	Cytological prediction			
	Non-neoplastic	Possibly neoplastic	Malignant	Unsatisfactory
Benign	18	23	0	4
Follicular adenoma	8	8	0	5
Malignant	0	5	3	0
Occult carcinoma	2	1	0	0
Total	28	37	3	9

Of 24 removed neoplastic lesions with satisfactory cytological assessments, 16 were correctly predicted cytologically. All eight carcinomas were correctly predicted as either malignant or possibly neoplastic, but eight of 16 follicular adenomas were incorrectly predicted as non-neoplastic. Of 41 non-neoplastic lesions, 23 were incorrectly predicted as possibly neoplastic. Overall accuracy was 52%.

In the 102 patients not operated on, the diagnosis, based on clinical examination, repeated cytology, and autoantibody titres, was either simple multinodular goitre or chronic lymphocytic thyroiditis. None of these patients had a possibly neoplastic picture cytologically and there were no other indications for operation. Nevertheless, at the time of analysis 46 patients were still under review with repeated aspiration cytology at the thyroid clinic and a further 19 with chronic lymphocytic thyroiditis had been registered on the Scottish Automated Follow-up Register for long term surveillance.

Discussion

It seems to be commonly accepted that the incidence of neoplasia in swellings associated with multinodularity is much lower than that in true solitary swellings.^{4,5} We acknowledge that clinical categorisation of thyroid swellings as isolated or dominant is inaccurate, given that some clinically isolated swellings are found at operation to be associated with subclinical abnormality elsewhere in the gland. Dependence on physical examination alone therefore results in underestimation of the true frequency of dominant swellings and overdiagnosis of isolated swellings. The isolated or dominant nature of thyroid swellings may be accurately established by ultrasound scanning, but our findings confirm our prejudice that this information should have little impact on management.

Despite the limitations of physical examination some 30% of discrete thyroid swellings may be so categorised as dominant rather than isolated, and on the basis of prospective study the risk of neoplasia and malignancy in such swellings is higher than expected. The frequency of neoplasia and malignancy (including three occult carcinomas) was 42% (32 cases) and 14% (11) respectively in 77 excised dominant swellings compared with 59% and 21% in 307 excised isolated swellings.⁸ Only 43% of dominant swellings were excised, however, compared with 78% of isolated swellings, which in itself reflects less clinical concern when swellings are dominant. With the assumption that neoplasia and malignancy had not been overlooked in patients not operated on the overall incidence of neoplasia and malignancy in dominant swellings was 18% and 6% respectively compared with 46% and 17% in isolated swellings. These figures should obviously be regarded as indicating the minimum risk of neoplasia and malignancy.

Multinodular thyroid enlargement attributable either to colloid degeneration or to chronic lymphocytic thyroiditis is common and it is not surprising that neoplasia may coexist. Our findings are therefore

hardly unexpected, and it is more surprising that multinodularity should be taken as reassurance against the likelihood of neoplasia in any dominant area of enlargement. Malignancy in association with chronic lymphocytic thyroiditis is a particular diagnostic pitfall. The hard consistency of some malignant lesions is similar to that of a dominant area of thyroiditis. In addition, it may be difficult cytologically to distinguish between thyroiditis and lymphoma and between thyroiditis and oxyphil cell follicular neoplasm.

Although dominant swellings should clearly be regarded with greater clinical suspicion than has been traditional, the discriminant power of investigations to predict the risk of neoplasia is in general disappointing, including fine needle aspiration cytology, now widely regarded as the preferred investigation. We find that the accuracy of aspiration cytology analysed prospectively is lower than generally believed.⁸ The main source of error in this small series of dominant swellings was the inaccurate prediction of possible neoplasia in histologically benign swellings. We emphasise, however, that all patients with a possibly neoplastic cytological picture were operated on whereas 102 patients with non-neoplastic findings on repeated sampling were not. The true false positive rate was therefore likely to be considerably lower than might appear from this highly selected analysis. In addition, although eight of 24 neoplastic lesions were incorrectly predicted as non-neoplastic, these were histologically benign follicular adenomas, and all eight carcinomas (and one of three occult carcinomas) were correctly predicted as either malignant or possibly neoplastic.

Clearly dominant thyroid swellings cannot simply be

dismissed as part and parcel of chronic lymphocytic thyroiditis or multinodular goitre, but it is not possible on the basis of this study to give clear guidelines on which should be removed. There are other factors, outlined above, apart from cytology, which influence the decision. Despite its apparent limitations, however, routine aspiration cytology has alerted us to the risks of neoplasia and malignancy in dominant swellings and, although cytological appearances influenced the decision to remove roughly four non-neoplastic dominant swellings annually, we still consider it the most valuable and only appropriate investigation.

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Reported social alcohol consumption during pregnancy and infants' development at 18 months

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Abstract

Objective—To determine the relation between mothers' self reported drinking habits before, during, and after pregnancy and infants' mental and motor development at 18 months of age.

Design—Follow up study of all singleton live births born to primigravidas living in Dundee and booked into antenatal clinics from 1 May 1985 to 30 April 1986.

Setting—District of Dundee.

Subjects—846 children aged 18 months, of whom 592 attended for assessment.

Main outcome measures—Scores on Bayley scales of infant mental and motor development.

Results—For full term children, maternal alcohol consumption was not significantly related to any adverse effect on the children's mental or motor development measures at age 18 months. After confounding factors had been controlled for, alcohol consumption before pregnancy and after pregnancy was significantly related to better motor performance and mental performance.

Conclusion—Pregnant women probably need not abstain from alcohol altogether as no detectable adverse relation was found between the child's mental and physical development and the mother's weekly consumption at levels in excess of 100g absolute alcohol. However, to allow for a margin of safety and taking into account the findings of an earlier phase of this study on the immediate effects

on the newborn, it is recommended that pregnant women should drink no more than eight units of alcohol a week, the equivalent of about one drink a day.

Introduction

The serious effects on the offspring of excessive maternal alcohol consumption during pregnancy have been known for over 15 years. In 1973 Jones and Smith developed the term fetal alcohol syndrome to describe a cluster of signs including abnormal facial features, central nervous system dysfunction, and growth deficiency.¹ Follow up studies of patients with fetal alcohol syndrome have indicated that these signs tend to persist into childhood.²⁻⁴

The question then arose whether more moderate levels of maternal alcohol consumption during pregnancy could have smaller but nevertheless disadvantageous effects on child development. Some studies have shown adverse effects of mothers' moderate drinking on infants' mental development,^{5,6} motor development,⁷ behaviour,⁸⁻¹⁰ and size,^{11,12} but others have found no detectable adverse effect on moderate drinking on the development of the child.¹³⁻¹⁵

The main aim of the present study was to determine the nature of the relation between maternal alcohol consumption before, during, and after pregnancy and infant mental and motor development at 18 months, taking into account the possible con-