Role of fine needle aspiration cytology

Joan Lamb and her colleagues are to be congratulated on their timely publication on the role of fine needle aspiration cytology in breast cancer screening.¹ There are, however, some points which require clarification as they have a bearing on the interpretation of the authors' results in relation to the provision of a similar service in other districts where breast cancer screening is to be undertaken.

What was the overall size of the screened population that generated 562 aspirates and exactly what criteria were used to select the patients from the screened group who were deemed suitable for fine needle aspiration? Did all the selected patients have a palpable lesion, or were some of the aspiration procedures mammographically or radiologically "targeted", or even performed "blindly"?

It may be inferred from the paper that the aspirates were not performed by the pathologist who was to report on the specimen. We feel that this is an important point. It is certainly no accident that in Scandinavia where fine needle aspiration cytology is most widely practised, aspiration is generally performed by the cytopathologist.

At this hospital aspiration cytology has been performed on patients presenting at the breast clinic with a palpable mass since September 1986. Most aspirates are performed by a pathologist attending the clinic who personally stains and reports the specimen within the clinic. The pathologist benefits from a clinical impression of the nature of the lesion, and the speed of the procedure means that a scanty or inadequate aspirate can be immediately repeated for a second, or on rare occasions, even a third time to gain a diagnostic sample. The use of an ethyl chloride spray on the skin before aspiration makes multiple attempts more acceptable to the patient. These advantages are reflected in the overall results that we obtained. One hundred and fifty aspirations were performed over nine months, and of these, 109 were carried out by the same pathologist. A definite cytological diagnosis was possible in all 109 patients aspirated, and we believe this to be a direct consequence of the pathologist performing his or her own aspirations. In those cases in which histological results were subsequently available 22% were confirmed as benign, 66% were confirmed as malignant, 4% diagnosed as suspicious were found to be malignant and 8% diagnosed as benign were found to be malignant (aspirates negative on review). There were no false positive results but one

case reported as suspicious proved histologically to be a benign fibroepithelial neoplasm. The benefits of the pathologist as aspirator, particularly with respect to the sensitivity of the procedure and the reduction in numbers of suspicious and inadequate samples cannot be emphasised too much. While there are obviously important differences between the role of fine needle aspiration in screening and in the different population of women presenting with a palpable mass, we believe that the principle of pathologist as aspirator should be extended into the screening process and this should help to keep inadequate samples or "suspicious" diagnoses to a minimum. The psychological morbidity generated by a screening programme is not to be underestimated and the facility of giving the women a rapid diagnosis at the stage of initial specialist assessment must surely be of benefit.

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Reference

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Drs Lamb and Anderson comment:

As commented on in the results and discussion sections of our paper, we undertook a retrospective non-consecutive study of fine needle aspiration cytology in a breast cancer screening programme. The details of the population and methods of selection of women for further investigation have been given in a publication describing the protocol.¹

None of the cases was radiologically targeted for aspiration, although this is now part of our procedures.

With regard to the aspirator, we think the most important factors are motivation, aptitude, and ability to make good smears. Local situations and availability of personnel will vary, and the degree of collaboration between the different disciplines of surgery, radiology, and pathology will affect the quality of service provided.

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Mucinous thyroid carcinomas

I read with interest the article by Rigaud and Bogomoletz about mucin secreting and mucinous primary thyroid carcinomas.¹ The authors concluded that, "carbohydrates contained in thyroglobulin and colloid could well be responsible for the apparent 'positive' staining obtained with the conventional histochemical methods for mucins, and this could apply to thyroid tumours of both follicular and C cell origin."

Recently, it has been shown that thyroid follicles with acid mucins mostly composed of, and or related to, C cell conglomerates (sometimes true mucinous C cell complexes) exist. It was also shown that acid mucin is present in the cytoplasm of C cells lining these follicles.² These secondary types of thyroid follicles are anatomically related to the mucin containing C cells or ultimobranchial solid cell nests of the thyroid.^{2,3} According to the conclusions of Rigaud and Bogomoletz,¹ it would have been expected to find acidic mucins in the colloid of thyroid follicles not related to solid cell nests, but acid mucosubstances were not present in the many control sections far from the ultimobranchial nests derived from the gut.²

I think that it is plausible to assume that the histogenesis of some mucin-producing thyroid tumours, especially medullary carcinoma⁴ could be linked to the "ultimobranchial" thyroid follicles with acid mucins.²

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