Hospital Topics

Needle Aspiration of Breast Cysts

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Summary

A total of 149 breast cysts have been treated with primary aspiration. Findings were abnormal in 36 patients, 30 of whom underwent excision of the breast cyst with cancer being found in four. Careful examination of the breast after aspiration and follow-up are necessary, but, provided these precautions are observed, this type of treatment is simple, safe, and cheap besides often giving the patient relief at the first consultation.

Introduction

Cystic disease is the commonest abnormality of the female breast. Usually multiple small cysts are embedded in breast tissue affected by varying degrees of fibrosis where it forms a localized thickening or general diffuse lumpiness of the breast. At any time one or several cysts may suddenly enlarge to form a discrete mass. Clinically, this presents as a discrete lump in the breast, which is usually smooth, mobile, and firm but if surrounded by an area of gross fibrocystic disease may be ill-defined and integrated into surrounding breast tissue, when it may simulate a scirrhus carcinoma.

Though most surgeons still prefer to excise a localized cyst and safeguard the patient against the possibility of an underlying cancer an increasing number treat cysts by simple aspiration, a technique which was described over 20 years ago.¹

Needle aspiration of all discrete lumps in the breast at the patient's first attendance at our clinic is now our normal practice. Should the mass prove to be solid excision biopsy is clearly indicated. Should it be cystic, however, it is aspirated to dryness, and provided certain precautions are taken this is all that is required. The policy is safe, economical, and reassuring to the patient. We describe here our procedure and the results in 134 patients treated up to December 1974.

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Procedure

When clinical examination shows a discrete mass in the breast the findings are recorded and a 19- or 21-gauge needle attached to a 20-ml disposable syringe is inserted. If the lesion is solid its consistency is noted and suction is applied. After removal of the syringe and needle smears are made of the material in the needle by ejection on to a glass slide. If the lesion is cystic it is aspirated to dryness and the needle and syringe are withdrawn. A small sterile strip dressing is applied.

The breast is examined immediately after aspiration. The presence of a residual mass or thickening is an indication for biopsy. The fluid, which may be brown, green, yellow, muddy, or clear, is tested for blood either biochemically or by microscopy. The fluid is normally sent for routine cytological examination. Bilateral mammography or xeromammography is arranged.

Patients are reviewed three weeks later. The breast is carefully examined for refilling of the cyst or for other palpable masses and the findings recorded. Indications for excision biopsy at this stage are (a) a palpable mass at the site of the cyst; (b) an abnormal mammogram or xerogram; or (c) blood or abnormal cells in the cyst fluid. If none of these indications are present no further treatment is given but a follow-up appointment is arranged. We usually discharge patients under the age of 40 years after six months if at that time clinical examination shows nothing abnormal and continue to follow up patients over the age of 40.

Results

Up to December 1974 149 cysts in 134 patients were treated by primary aspiration. Findings were abnormal in 36 patients: 12 had a residual mass after aspiration, 20 refilling of the cyst at three weeks, nine blood in cyst fluid, six abnormal cytological findings, and five suspicious mammograms. Excision of the area occupied by the cyst was performed in 29 of these patients and four proved to have cancer. Another two patients had a different area of the breast explored because of suspicious mammographic appearances, and both had cancer. No biopsy was performed in the remaining five patients despite the abnormal findings.

The incidence of abnormal findings in the six patients with cancer and the 25 with proved benign disease is shown in the table. All four cancers found in association with a cyst were associated with refilling of the cyst and blood in the cyst fluid, and three had a residual mass. Though mammography detected only two of these four cancers it did point to the presence of cancer at other sites in two further patients. Both these cancers were palpable when the patient was re-examined in the light of the mammographic findings.

The commonest indications for biopsy in those with benign disease were refilling of the cyst at three weeks or a residual mass after aspiration. Of the five patients with abnormal findings who had no biopsy one with a residual mass refused operation; one with a suspicious

Abnormal Findings Related to Diagnosis in 36 Patients

Diagnosis	No. of Patients	Residual Mass after Aspiration	Refilling of Cyst	Blood in Cyst Fluid	Abnormal Cytology	Suspicious Mammogram
Cancer at site of cyst	4	3	4	4	1	2
Cancer at other site	2					2
Benign disease	25	8	16	3	2	
No biopsy	5	1	0	2	3	1

mammogram was over 80 years old and operation was not considered justifiable; and in the others we doubted the significance of the microscopic findings in the absence of significant clinical abnormality.

Altogether 105 patients needed no treatment other than a single aspiration of their cyst. Follow-up of these women for six months or up to two years in those over 40 years disclosed no further masses at the sites of the original cysts. In three of the 15 patients who were followed up for over a year further cysts developed at other sites; these were also treated by primary aspiration.

Discussion

Provided certain precautions are taken the treatment of breast cysts by primary aspiration is simple, safe, and inexpensive. In a large series reported recently no cancers developed at the sites of previous aspiration.² As cysts of the breast are always multiple³ it may be considered illogical to treat them otherwise, particularly when resources for inpatient surgery are in short supply. Careful examination of the breast after aspiration for a residual mass and after an interval for refilling of the cyst and mammography or xeromammography are essential safeguards.

Routine cytological examination of the cyst fluid has not proved valuable. Only one of the four patients with cancer had cytological abnormalities and, conversely, several with abnormal cytological findings proved not to have cancer. Microscopy for red blood cells also proved difficult to interpret; a few red cells are often present as a result of the needle puncture. In all four patients with cancer the presence of blood was gross, and simple biochemical assessment seems to be adequate. Spectrophotometry is under study.

Needle aspiration of all discrete lumps in the breast at the patient's first attendance has many attractions. By immediately defining whether a mass of the breast is solid or cystic it is a useful diagnostic procedure, and finding a solid lesion immediately indicates the need for biopsy. If cancer is suspected we often follow this by a Tru-cut needle biopsy. Though the cytological examination of the needle aspirates may lead to a firm diagnosis,^{4 5} the smears are difficult to interpret and we prefer the greater certainty of a histological diagnosis. Needle aspiration also allows immediate recognition and definitive treatment of cysts of the breast. All women coming to a breast clinic with a discrete lump in their breast are anxious, and immediate assurance at their first attendance that the lesion is only a cyst and that the likelihood of cancer is very small brings welcome relief.

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References

- ¹ Patey, D. H., and Nurick, A. W., *British Medical Journal*, 1953, 1, 15.
- ² Abramson, D. J., *Surgery, Gynecology and Obstetrics*, 1974, 39, 531.
- ³ Cheate, G. L., *British Journal of Surgery*, 1920, 8, 149.
- ⁴ Hayes, E., Martin, M. D., and Ellis, E. B., *Annals of Surgery*, 1930, 92, 169.
- ⁵ Franzen, S., and Zajicek, J., *Acta Radiologica*, 1968, 7, 241.

Letter from . . . Canada

The Hot Stove League

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Economics is not taught in medical schools. Most doctors would prefer to get on with their work and leave any financial finaglings to somebody else. Medical economics has never been quite respectable. World-wide inflation is rapidly changing this attitude. Ivory towers can get a little drafty.

So soon as a paying agent, be it a government or an insurance agency, appears between a doctor and his patient that doctor is forced to negotiate his fees. Increasingly through the Western world the paying agency is a monopoly government employer against which a highly individualistic profession is at a considerable disadvantage.

In Canada we have 10 separate provincial medical insurance schemes, partly funded by the federal government. Each province negotiates separately with its doctors, and with 10 separate negotiations going on each year we are building up a

considerable body of experience. National conferences on negotiation and collective bargaining, in which in the 10 provincial branches of the Canadian Medical Association pool their knowledge, are paralleled by the federal-provincial meetings of health ministers.

Some lessons have already clearly emerged. One organization must negotiate for the whole profession. When there is lack of unity between specialists and general practitioners, as in Quebec, one side can be played off against the other. Academic colleges have weighty responsibilities in the fields of medical standards and medical education but they should not be involved in negotiations. In Canada 30% of physicians are salaried. They have long ago realized that their reward is directly related to the earnings of non-salaried physicians. It would be frank hypocrisy to deny this. In several provinces the salaried physicians have asked the medical associations to negotiate on their behalf. In Newfoundland the final stage has been taken by the government as part of a settlement with the profession. All Newfoundland doctors have to belong to the Newfoundland Medical Association, which is recognized as the sole bargaining agent. While many feel that this takes the profession away from the tradition of a voluntary association and towards that of a trade union, there is no denying that the bargaining position of the Newfoundland doctors has been strengthened.

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