

# Localisation and Excision of Occult Breast Lesions: The Early Experience of a District General Hospital

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## ABSTRACT

During 18 months period (April 1989-September 1990), 29 female patients, with mean age of 53 (range 34-80 years), were found to have occult (clinically impalpable) breast lesions, suspicious of malignancy on mammographic examination. In four cases, the occult abnormalities have disappeared at the time of localisation. The remaining 25 patients underwent localisation and excision of the occult lesions. The histological diagnoses of the excised lesions were 20 (80%) benign and 5 (20%) malignant, giving a predictive positive value (PPV) of 20%. All the malignant lesions were invasive ductal carcinomas, three of which were inpatients under the age of 50 years. Two of the five patients with malignant lesions (40%) developed axillary lymph node metastases within 9 months of excision of the occult breast lesions. We concluded that localisation and excision of impalpable breast lesions can be performed in district general hospitals with results comparable to those from larger, specialised centres.

The increasing use of mammography in management of breast disease and recent implementation of breast cancer screening programme, have resulted in an increase in detection of occult breast lesions that are otherwise clinically impalpable. Detection of such lesions warrants excision biopsy to exclude malignancy. This requires x-ray localisation prior to excision which demands close collaboration between surgeons, radiologists and pathologists and may pose problems to the surgeon especially in district general hospitals where resources are limited.

We report our early experience with localisation and excision of occult breast lesions and discuss the problems

encountered and the ways to reduce the number of benign lesions biopsied for every malignancy detected.

## METHODS

During 18 months period (April 1989 to September 1990) 29 female patients with age range 34-80 (mean 53 years) attending the breast clinic at the Royal Oldham Hospital, were found to have occult breast lesions detected on mammographies that were requested for variety of breast symptoms listed in Table 1. Two patients were asymptomatic and referred from the breast cancer screening service which was launched in April 1990. The mammographic abnormalities were either a mass lesion (irregular, speculated or with ill defined margin) or microcalcification. Fine needle aspiration cytology (FNAC) was performed in patients with palpable lumps (different from the occult ones), areas of nodularity and nipple discharge.

## Technique

Patients were admitted a day prior to localisation and excision, and fully informed of the procedure. After localisation of the lesion by the radiologist using a flexible hooked wire, the patients were then taken to theatre<sup>1</sup>. All biopsies were carried out under general anaesthetics. It is our practice to reinforce the flexible wire during excision by threading a sterile hypodermic needle gauge 21. The lesion was excised with the hook wire in situ, and subjected to radiological examination. The wound was then closed and the patient was kept in theatre until adequate excision was confirmed by the radiologist. The excised specimen and x-ray films were then sent to the pathology department for histological examination.

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Table 1

## Symptoms for which mammograms were requested

Breast Symptom	No of Cases	%
Lump	20	69
Pain	3	10
Nipple Discharge	2	
Nipple Retraction	2	
No Symptom (screening service)	2	
Total	29	

## RESULTS

Twenty nine patients were found to have occult breast lesions suspicious of malignancy, detected on mammographies requested for variety of breast symptoms listed in Table 1.

Twenty patients were referred with breast lumps, but clinical examination revealed no lump in 8, nodularity in 4, benign lumps in 8. FNAC was performed in 14 patients (2 with nipple discharge, 4 with nodularities and 8 with lumps different from the occult lesions). The results of the FNAC were: 9 benign, 2 unsatisfactory, 1 suspicious (proven carcinoma on histology) and 2 malignant (confirmed histologically). In 4 patients (14%), the suspicious lesions were no longer visible during localisation, therefore no excision was performed and patients were reassured. This was attributed to menstrual changes since all were pre-menopausal. The remaining 25 patients underwent localisation and excision, 13 (52%) had mass lesions on mammography and 12 (48%) had microcalcification.

Table 2

## The histological diagnoses of the excised lesions

Histological diagnosis	No.	%
Infiltrating duct carcinoma	5	20
Fibroadenosis	8	32
Fibroadenoma	3	12
Sclerosing adenosis	3	
Intraductal papiloma	3	
Duct ectasia	2	
Hyaline fibrosis	1	
Total	25	

In all cases, lesions were excised completely at first attempt and none required further biopsy. In one patient, complete radiological excision was achieved but the histology showed incomplete excision of an intraduct carcinoma. The histological diagnoses of the excised lesions are shown in Table 2. There were 20 (80%) benign and 5 malignant. The benign to malignant ratio, ie number of benign lesions biopsied for every malignancy, was 4:1. The predictive positive value was 20%. All the five malignant lesions were infiltrating duct carcinoma. Three (60%) showed as mass lesions on mammography and 2 (40%) as microcalcification. The age of cancer patients ranged 34-62 (mean 50 year). The youngest patient in the cancer group developed axillary lymph node metastases 9 months after localisation and excision. The histology of the excised lesion from the eldest patient showed complete excision of an intraductal one. She underwent mastectomy and axillary clearance and the histology of the lymph nodes was positive. The correlation between symptoms, clinical examination, mammographic findings and results of FNAC in the cancer patients is shown in Table 3.

Table 3

## The correlation between symptoms, examination mammography and FNAC in patients with histologically confirmed intraduct carcinoma

Patient	Age	Symptom	Examination	Mammography	FNAC
1	34	Lump	Nodularity	Mass lesion	Malignant
2	48	Lump	Normal	Microcalcification	Benign
3	46	Screening	Nodularity	Mass lesion	Suspicious
4	60	Pain	Normal	Microcalcification	Normal
5	62	Screening	Nodularity	Mass lesion	Malignant



## DISCUSSION

The wide spread use of mammography in management of breast disease and recent implementation of breast cancer screening programme as recommended by Forrest report has led to greater increase in detection of clinically impalpable breast cancers<sup>2</sup>. This will improve cure rate, and therefore will reduce the high mortality associated with this disease<sup>3-5</sup>. It will also enable complete excision by lumpectomy and breast conservation sparing the patient the psychological morbidity associated with mastectomy<sup>6</sup>. However, this will be on the expense of performing more biopsies of mammographic abnormalities.

The New York health insurance plan (HIP) study and the Swedish two counties trial have shown reduction in mortality from breast cancer in females over the age of 50 years screened by mammography every 1-3 years by 25-31% respectively<sup>7,5</sup>. No benefit has been reported for females under the age of 50 years, although Verbeek et al suggested reduction in mortality rate of approximately 50% in females of 35 or over by screening of all eligible females<sup>4,5</sup>. The British screening programme which offers females aged 50-64 years a single view mammography once every 3 years is based on the Swedish two counties trial<sup>2,5</sup>. The recommended range of the predictive positive value (PPV): percentage of mammographic lesions classified as "suspicious" which are diagnosed clinically as cancer, is 10-30%. Low PPV means many females will have unnecessary biopsy, and high PPV means many cancers will be missed<sup>8</sup>. The benign to malignant ratio and PPV in our small series are 4:1 and 20% respectively. This compares favourably with much larger series<sup>1,3</sup>. Three of the five malignancies (60%) were in females aged less than 50 years, an age group which is not included in the screening programmes since no benefits reported from the Swedish two counties trial in screening 40-49 age group<sup>5</sup>. Two patients with malignant lesions (one pre and one post menopausal) developed axillary lymph node metastases within 9 months, indicating spread of breast cancer at an early stage even if clinically impalpable. The aim is to reduce the number of benign lesions biopsied for each malignancy detected. To achieve this objective, it has been suggested: (i) to follow up some mammographic abnormalities with repeated mammography. However this may cause some delay in excision of some cancers and increase patient's anxiety. In the Malmö trial 17% of cancers presented clinically between rounds of screening (interval cancers), but tumour palpation is enhanced by breast examination with the knowledge of

the precise site of the radiological abnormality. (ii) to seek out a second opinion on mammographic reports. Over-diagnosis increases the rate of breast operations by 2 folds and causes widespread anxiety and fear<sup>8</sup>. Reports such as "malignancy cannot be excluded" leave the surgeon no choice but to biopsy the lesion. Seeking second opinion reduces the rate of over-interpretation by inexperienced radiologists, but increases the work load of the radiologists and poses problems to who should initiate the referral<sup>3</sup>. (iii) to subject each mammographic abnormality to FNAC. The role of FNAC in diagnosis of palpable breast lesions is well established, but its use in impalpable lesions requires x-ray guidance and needs further evaluation. In three of our cancer patients, FNAC performed with the knowledge of the mammographic abnormalities revealed one suspicious and two malignant smears. We now routinely perform mammogram-directed FNAC prior to listing patients for biopsy. Several problems were encountered when localisation and excision was first introduced to our hospital. This was caused mainly by lack of communication between the involved departments. In some cases, the unfamiliar nursing staff sent patients to theatre prior to localisation. This resulted in delay in performing the operation and increased patient's anxiety. In other cases, the excised specimen were taken to the pathology department prior to radiological confirmation of complete excision. This resulted in prolonging the anaesthetic time and the late finishing of the operative list. All problems were overcome by adequate explanation to the nursing staff in the ward and theatre, and by close collaboration between the involved departments: surgery, radiology and pathology.

## CONCLUSION

**Our experience with localisation and excision of occult breast lesions, at present is limited to reach a purposeful conclusion; however our early results are encouraging and compares well with the larger series<sup>1,3</sup>. Now, with the introduction of breast cancer screening services, larger number of patients can be collected and results can be analysed with the aim to achieve 1:1 benign to malignant ratio, and to reduce the high mortality associated with breast cancer to argue for the value of mass screening.**

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## METHODS

Between January 1, 1989 and December 30, 1990 at King Abdullah University Hospital, 4,844 infants were delivered. Two hundred and twenty one infants (2.3%) were macrosomic (above 4,000 gm). A control group of 221 infants whose gestational age was between 37-42 weeks and weighed between 3,000-3,999 gm born during the same period were selected. Twin pregnancy and congenital anomalies were excluded from the control group.

Factors which have significant association with fetal macrosomia, maternal characteristics and fetal outcome were identified and evaluated. The maternal age, parity, weight at booking, mode of delivery and complications at delivery were recorded. The apgar score and neonatal events mainly birth asphyxia and meconium aspiration were also recorded. The statistical analysis was performed using student's "t" test.

## RESULTS

There were 65 Saudi women with macrosomic infants in the study group (28.0%) and 85 in the control (38.4%). Palestinian, Egyptian and Sudanese women had a tendency to have a large fetus (Fig. 1). The average maternal age in the mild macrosomic group was 27.3 years; 30.4 years in the massive macrosomic group and only 24.3 years in the control group (Table 1).

This is a two year retrospective review of 221 pregnancies that resulted in the delivery of an infant weighing 4000 gm or more (macrosomic babies). Women delivering macrosomic babies were significantly older, of high parity, obese (> 90 kg) and had higher frequency of postnatally than the control. The macrosomic infant was more often male and had more birth trauma and shoulder dystocia but not to a statistically significant level.

The method of delivery of a macrosomic baby should be individually considered as some women can achieve vaginal delivery of "very macrosomic baby" without significant increase in the maternal and perinatal morbidity or mortality, although in our series there was a relatively higher rate of delivery by caesarean section.

The dangers associated with delivery of macrosomic fetus have not received enough attention in the past due to over emphasis almost exclusively on the dangers associated with low birthweight infants<sup>12</sup> in the past perinatal mortality was used as the basis of judging the risk of delivery of a macrosomic infant<sup>13,14</sup>. The obstetric care of the pregnant group of infants must look beyond neonatal morbidity and consider mortality, to include the danger of asphyxia, trauma and meconium aspiration.

Some of the recent studies have not indicated or shown a significant higher perinatal mortality but some morbidity.

This report was conducted at King Abdullah University Hospital (KAUH) to determine the incidence of

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