

The Role of FNAC in the Diagnosis of Breast Lumps in Karbala

Dr. Ali A. Ali.-FRCS

Iraq / Karbala / University of Karbala / College of Medicine

Abstract

Objectives: The aim of this study is to find out the sensitivity of FNAC in the diagnosis of breast lumps in Karbala.

Patients & Methods: This is a clinical study of FNAC of breast lumps done in Al-Hussein Teaching Hospital in Karbala, from May 2005-May 2007. FNAC findings were correlated with the histopathological findings of the excised lump of the same patient to determine the sensitivity of FNAC.

Results: Eighty five cases were included in the study, one male and eighty four females. The age range was between 20-70 years. Benign cases composed 52.9% (45 patients) while malignant cases were 47.1% (40 patients) of the total number of patients. Sensitivity was 92%.

Conclusion: FNAC of the breast is a simple, highly sensitive test. It can minimize the need for open biopsy, and is recommended as a routine test for determining benign or malignant lesions in correlation with clinical examination and imaging procedures.

Key Words: FNAC, breast lumps, breast disease diagnosis, breast lumps in Karbala.

الخلاصة

أجريت دراسة سريرية في مستشفى الحسين (محافظة كربلاء) خلال الفترة ما بين أيار ٢٠٠٥-أيار ٢٠٠٧ على ٨٥ حالة مرضية مصابة بعقدة الثدي (٨٤ إناث و ذكر واحد). تم فحص كل حالة بطريقة الشفط الأبري الخلوي، ومن ثم تمت مقارنة التشخيص مع نتيجة الفحص النسيجي للعقدة، وكانت النتيجة كما يلي: بلغت نسبة الحالات الحميدة ٥٢,٩% (٤٥ حالة) و نسبة الحالات السرطانية ٤٧,١% (٤٠ حالة) من مجموع الحالات المشمولة بالدراسة وكانت حساسية الفحص الخلوي 92% يستنتج من الدراسة ومن النسب أعلاه أن التشخيص الخلوي بطريقة الشفط الأبري سريع الإنجاز وقليل الكلفة وتداخله بسيط وذو حساسية عالية للتمييز بين الأورام الحميدة و السرطانية خاصة إذا اقترن بالفحوصات السريرية و الشعاعية على ان يكون الفاحص ذو خبرة كبيرة.

Introduction

The interest in using FNAC in breast disease raised in patients & clinicians following the diagnosis of breast cancer⁽¹⁾. FNAC has been used as a preoperative assessment method together with clinical & imaging techniques in both symptomatic & non symptomatic breast disease^(2, 3, 4, 7, 5).

FNAC is relatively non invasive, rapid & cost-effective in confirming a clinical or radiological suspicion of malignancy (6, 5, 7). It has been reported to be very sensitive & specific test^(7, 8, 9, 4, 10, and 11). It is examiner dependent⁽¹²⁾.

In this article FNAC has been used in breast disease diagnosis in Al-Hussein General Hospital.

Patients & Methods

It is a clinical study on breast lumps in Karbala Governorate over the period May 2005 to May 2007. All cases (85 patients) attending the breast clinic in al-Hussein General Hospital were included in the study and all had both cytological & histopathological reports which were given by the same two consultant pathologists. The procedure was done according to

standard guidelines using (23 gauge) needle & syringe. The following formula in table

one was used in FNAC diagnosis:

Table 1. showing formula used in FNAC diagnosis

Pathological statement in correlation to diagnostic accuracy		
no	Pathological statement	Diagnosis rate
1	Picture is that of	100%
2	Consistent with	More than 90%
3	Highly suggestive	More than 80%
4	In favor of	More than 70%
5	Suggestive or goes with	50%

Table 2. The alternative & most commonly used protocol is the NHS breast screening program protocol Controls

NHS breast screening program protocol	
C	Cellular appearance
C1	Inadequate or unsatisfactory
C2	Benign cells present
C3	Mild atypia within some cells but probably benign
C4	Suspicion of malignancy
C5	Malignant cells present

Formalin fixation, paraffin embedding & Haematoxylin and Eosin (H & E) staining were used for tissues obtained by the open biopsy

Result

Eighty five cases had both FNAC & histopathological reports; of these 1(1.2%) was male, 84(98.8%) were females. age

range was 20-70 years. The final cytological diagnosis appeared as in table (3)

Table 3. Showing the final cytological diagnosis

Number of diagnosed cases in relation to diagnostic accuracy			
Diagnosis	Benign	Malignant	Total
100%	25	12	37
More than 90%	10	12	22
More than 80%	0	13	13
More than 70%	0	1	1
50%	6	0	6

On cytological examination (2) cases reported as benign & (4) cases as malignant proved on histopathological examination to be malignant & benign respectively, so the

false negative cases for malignant masses =2(2.3%) & the false negative cases for benign masses =4(4.6%).

According to the above data & applying standard statistical methods, FNAC sensitivity in our study was 92%

Discussion

FNAC of breast lump is an accepted & established method to determine the nature of breast lumps with high degree of accuracy^(4, 12, 10, and 11). It is highly sensitive. This was shown in our study as in many others. Tiware 83.3% and Issam M Francis was 82.6%. A female patient with breast lump seeks a rapid answer to her problem & to get that without surgical interference although follow up is recommended.

In our study the sensitivity of FNAC of breast lumps was 90% which is comparable to the findings of others^(7, 8, 9). Yet in other studies there was a variable range of sensitivity (43.8-95%)⁽¹⁴⁾. This can be explained on the facts that FNAC diagnosis accuracy depends on the pathologist experience, lesion type, method of preparation & aspiration & the degree of cooperation between the clinician & the pathologist.

In correlation with clinical & imaging studies a high index of diagnosis can be achieved, although follow up is needed

Conclusion

FNAC of breast lumps is a highly sensitive & specific test⁽¹³⁾ with recorded false positive & false negative results. It is cost-effective, rapid, with the least invasive method⁽¹⁴⁾. It can minimize the need for open surgery in benign breast lesions. Its accuracy is a personal experience & method dependent test.

We recommend our pathologist to more mastering of this test.

Acknowledgement

The author wishes to thank Dr.Saad Al-Ghaban (Community Medicine Dept.), Dr.Fatim Al-Mossawi (Pathology Dept.) Dr.Nazar Motaab (Pathology Dept), for their kind help during the preparation of this paper.

References

1. Hughes E,Royle GT,Buchanan R Taylor1.depression and social stress among patient with benign breast disease.Br.J,Surg1986;73:997-9
2. Dutta SK Chatcopadh Yaya A, Roy s. FNA and imprint cytology in the diagnosis of breast lesions, Journal of the Indian medical association,2001 August,99(8);421-23
3. O.I.Alatise, O.O.Lawal, O.O.Olasode, A.R.K.Adesunkanmi.Breast FNAC in a Nigerian tertiary hospital. East and central African journal of surgery, vol. 12, no 2,, November/December 2006,pp.126-132.
4. Mande N,Gakwaya AM,Byan Yima RK,Othieno.Triple assessment in the preoperative evaluation of patients with breast cancer in Melago hospital, East and Central African Journal of Surgery,Vol 9,No 2,Dec2004,PP 111-116
5. K.Altaf Hussain, Abdul Aziz Laghori, Arshad Mahmood Malik, Role of fine needle aspiration cytology versus histopathology in the diagnosis of breast lumps. Journal Liaquat university hospital, Jamsharo/Hyderabad, Sindh-Pakistan, JLUMHS September-December 2007; page 103-105
6. Chawun B;Sukham Wang N ,Lekawanvijits;Sulcapank;RangdaengS;Muttar ak M;Thorner P.S; Atypical and suspicious categories in fine needle aspiration cytology of the breast; histological and mamografical correlation and clinical significance, Singapore medical Journal ISSN 0037-5675 coden Sim JA3.2005, vol.46, n12pp 706-709
7. Ibrahim Mansoor, Awalif Jamal, The value of FNAC in the diagnosis of male breast lesion. Kuwait medical Journal 2001, 33(3); 216-219
8. Issam M.Francis Dilip K.Dos,Role of FNAC,Intraoperative imprint cytology and frozen section in the diagnosis of breast lumps and thyroid disease, Med. Principles Pract 1999; 8:173-182

9. Tiwari.M, Role of FNAC in the diagnosis of breast lumps, Katmandu university medical journal (2007), Vol 5, No 2, Issue 18,215-217.
10. Hindle WH, Payne, PA, Paney, The use of FNAC in the evaluation of palpable dominant breast masses, Am J Obst Gynaecol 1993; 168(6part1):1814-8
11. Yong WS, Chia KH, POHWT, Wong OY, a companion of true cut biopsy with fnac in the diagnosis of breast cancer. Singapore med J 1999; 40(09):123-133
12. Kanchanabat B, Kanchana Pitak P, Thanapongs W, FNAC for diagnosis and management of palpable breast masses, ANZ Journal of Surgery, Vol 70, No 11, Nov 2000, PP 791-794.
13. Aziz M, Ahmed N, Zahid J, Faizullah, Comparison of FNAC and open biopsy in palpable breast lumps, J.Coll. physician.surg.Pakistan, 2004, Nov,14(11);654-6.
14. Ciattos, 6) Chawun B; Sukham Wang N ,Lekawanvijits; Sulcapank; Rangdaeng S; Muttar ak M; Thorner P.S; Atypical and suspicious categories in fine needle aspiration cytology of the breast; histological and mammographic correlation and clinical significance. Singapore medical Journal ISSN 0037-5675 coden Sim JA3.2005, vol.46, n12pp 706-709
15. Ciatto S, Bonardi R. Cariaggi mp. performance of FNAC of breast: multicentre study of 23063 aspirates in ten Italian laboratories. Tumori. 1995; 81:13-17