Clinical Breast Examination and Its Relevance to Diagnosis of Palpable Breast Lesion

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To evaluate if clinical breast examination (CBE) is a reliable tool for diagnosis of palpable breast lesions, from July 2002 to October 2003, 371patients (445 palpable breast lesions) were examined by single experienced clinician and compared with fine needle aspiration (FNA) results. CBE had sensitivity of 57.14%, specificity 97.11%, positive predictive value (PPV) 76.60%, negative predictive value (NPV) 93.20%, false negative (FN) 0.06%, false positive (FP) 0.02%, and overall accuracy 91.44%. There was concordance in 91.44%. Of a total of 397 benign clinical suspections, 199 episodes were found to be cysts (50.13%). CBE alone even in an experienced clinician is not a reliable tool for diagnosis of palpable breast lesion whether it is malignant or not, but it can be used as a primary and simple tool for benign suspicious palpable breast lesion, particularly cystic breast lesion.

Keywords: *Clinical breast examination, Palpable breast lesion*

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Clinical Breast Examination (CBE) is advocated as simple tool for diagnosis of breast lesion according to the cost, simplicity of the procedure. However, the technique is operator dependent, skill and experience demand. There is inter-operator variation or different opinion among each clinician. The unreliable of this test may outweigh its simplicity and usage. This study is conducted to examine the reliability, predictive value, and concordance of CBE in diagnosis of palpable breast lesion in relation to result of cytological examination of fine needle aspiration (FNA).

Material and Method

From July 2002 to October 2003, 371 patients (445 palpable breast lesions) consulted at the Breast Clinic were examined by a single experienced surgeon who had more than 5 yrs experience in CBE. There were 368 females and 3 males. A suspected of palpable breast lesion whether it was benign or malignant was recorded and followed by aspiration. Excluding cystic breast lesions that can be managed by aspiration alone, the cytological result of a solid breast lesion was compared with CBE to determine the concordance of both tests. Cystic findings from aspirations were classified as benign FNA results.

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Results

There were 319 patients who received only one session of aspiration, 38 patients received 2 sessions of aspiration, 9 patients received 3 sessions, 3 patients received 4 sessions, one patient received 5 sessions and one patient received 6 sessions of aspiration. 291 female patients (79.1%) were premenopause and 77 female patients (20.9%) were menopauses. Ages ranged from 17 to 77 years (mean = 43.6 years, median = 43.0 years). Presentation of the 445 palpable breast lesions were as follows; asymptomatic 41 episodes (9.2%), mastalgia 57 episodes (12.8%), lump 344 episodes (77.3%), nipple discharge 1 episode (0.2%) and nipple retraction 1 episode (0.2%). Findings at the presentation were thickening in 93 episodes (20.9%), lump 347 episodes (78.0%) and malignant sign 5 episodes (1.1%). Of the total of 445 FNA done, only 1 FNA was reported as unsatisfactory. The result of clinical suspection compared to FNA results is shown in Table 1.

From Table 1, the author calculated the parameters of CBE as follows; sensitivity was 57.14% (36/63), specificity was 97.11% (370/381), positive

Table 1. Results of FNA compared to clinical suspection

	FNA +ve (malignant)	FNA -ve (benign)	Total
Clinical suspection +	36	11	47
Clinical suspection -	27	370	397
Total	63	381	444

predictive value (PPV) was 76.60% (36/47), negative predictive value (NPV) was 93.20% (370/397), false negative (FN) was 42.86% (27/63), false positive (FP) was 2.89% (11/381), and overall accuracy was 91.44%. There was concordance in 91.44% (36 + 370/444). Of a total of 397 benign clinical suspections, 199 episodes were found to be cysts (50.13%). Considering only cysts (200), almost all (199) cysts were found to be clinically benign, only 1 cyst was clinically malignant.

Discussion

Although most clinicians and most health policies have recommended CBE as a simple diagnostic tool for detection of a breast lesion, its accuracy is unreliable if performed without other complimentary tools, so called, FNA and mammography. In a study by Kanchanabat B et al[1], physical examination was unreliable for diagnosis of breast cyst (61.6% positive predictive value, 73.6% negative predictive value) and aspiration alone can determine the diagnosis and treatment in one-third of patients with a breast cyst. In the present study, even though this was performed by an experienced breast surgeon and could get higher PPV and NPV compared to a previous study[1], CBE alone was still unreliable for diagnosis of a palpable breast lesion. The low sensitivity of CBE suggest that CBE alone is not adequate or accurate enough in diagnosis of palpable breast lesion, particularly a malignant lesion. It should be complimented with FNA wherever possible. However, the high specificity and NPV imply that CBE is a useful tool to determine benign breast lesions. And considering a benign suspected lesion, 50.13% were cystic lesion that can be managed by aspiration alone and they were all benign clinical suspection except in one case. This shows that aspiration alone can solve half of the palpable breast lesions, which are breast cysts. FNA can give rapid and reliable results, which contribute towards the planning of further management of the patient. This may be used to reassure and support both the patient's and the surgeon's decision. FNA is a cost effective and clinically reliable tool in the diagnosis of a breast tumor. The sensitivity of FNA varied from 74-94%, specificity 95.7-100% and overall accuracy 88.5-96%, PPV 93.5-100%, NPV 78-95.7%, false negative 2.5-16.7% and false positive 0-0.8%[2-13]. Most false negatives are due to sampling errors[6,11], small tumor size[14], and special type of histology[14]. Although FNA of the breast is easy to perform, skill of the aspirator is important for satisfactory results as shown by Lee KR[15] that the technical failure rate was 9.8% for a single experienced aspirator compared to 45.9% for many aspirators. This indicates that FNA is operator dependent the same as CBE.

In conclusion, CBE alone even in an experienced clinician is not a reliable tool for diagnosis of palpable breast lesions whether it is malignant or not. However, it can be used as a primary and simple tool for a benign suspicious palpable breast lesion, particularly a cystic breast lesion. In case of uncertainty by CBE, other complimentary tools so called mammography and particularly, FNA must be done to ensure the result. In order to exclude malignant breast lesions, this triple test (CBE, mammography, and FNA) should be complimentary done to confirm the result.

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ความน่าเชื่อถือของการตรวจเต้านมโดยแพทย์ในการวินิจฉัยพยาธิสภาพของเต้านมประเภทที่สามารถคลำพบได้

ธีระเดช รัตนชัยกานนท์

เพื่อประเมินว่าการตรวจเต้านมโดยแพทย์สามารถนำมาใช้เป็นเครื่องมือที่มีความน่าเชื่อถือเพียงพอในการวินิจฉัยพยาธิสภาพของเต้านมประเภทที่สามารถคลำพบได้หรือไม่

ได้ทำการศึกษาผู้ป่วย371ราย (445 พยาธิสภาพของเต้านมที่คลำพบได้)ตั้งแต่เดือนกรกฎาคม พ.ศ. 2545 ถึง เดือนตุลาคม พ.ศ. 2546 ผู้ป่วยทุกคนได้รับการตรวจเต้านมโดยแพทย์คนเดียวที่มีประสบการณ์และนำผลไปเปรียบเทียบกับผลของ fine needle aspiration ผลการศึกษา การตรวจเต้านมโดยแพทย์มีความไว 57.14%, ความจำเพาะ97.11%, positive predictive value 76.60%, negative predictive value 93.20%, ผลลบเทียม 0.06%, ผลบวกเทียม 0.02%, ความแม่นยำ 91.44% และมี concordance 91.44% ในจำนวน 397 ตัวอย่างที่ลักษณะทางคลินิกไม่สงสัยว่าจะเป็นมะเร็ง มี 199 ตัวอย่างที่พบว่าเป็นซีสต์ คิดเป็น50.13%

โดยสรุป, การตรวจเต้านมโดยแพทย์แม้เป็นการตรวจโดยแพทย์ที่มีประสบการณ์ ไม่สามารถใช้เป็นเครื่องมือที่น่าเชื่อถือในการวินิจฉัยพยาธิสภาพของเต้านมประเภทที่สามารถคลำพบได้ว่าเป็นมะเร็งหรือไม่ แต่สามารถใช้เป็นเครื่องมือเบื้องต้นที่ง่ายในการวินิจฉัยพยาธิสภาพของเต้านมประเภทที่สามารถคลำพบได้ที่ไม่สงสัยว่าจะเป็นมะเร็งโดยเฉพาะซีสต์ของเต้านม