

The Value of Isolated Nipple Discharge: a Retrospective Analysis of 46 Cases

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Abstract:

Background: Nipple discharge is one of presenting symptoms of breast disease. It accounts 6-10% from the total presenting diseases of the breast. It's horrible to the patient and dilemma to the surgeon if presenting alone.

Aim: To evaluate the significance of isolated nipple discharge.

Patients and methods: The data of 46 patients with isolated nipple discharge in medical city and Al-Jamiaa private hospital in Baghdad from 1995-2005. All assessed triply to exclude those with other breast finding other than discharge. Their discharges were examined macro and microscopically. All patients subjected to radical sub-areolar microductectomy (Hadfield), and the histopathological results of specimens were reviewed.

Results: Macroscopically nipple discharge either bloody 21 cases or non-bloody 25 cases. Microscopically; 26 cases were RBCs+ ve, one of them reported as invasive ductal carcinoma, ductal papilloma was the most prevalent underlying lesion. The remaining RBCs-ve cases 20 there were 4 malignant cases, 2 cases ductal carcinoma insitu, 1 case lobular carcinoma insitu and 1 case invasive ductal carcinoma. Ductal papilloma was also the most prevalent underlying lesion.

Conclusion: Nipple discharge is an important sign of underlying breast disease whether bloody or not. Not all non-bloody discharges are RBC free. In the absence of the organic lesion in the breast it is important to analyze the discharge cytological.

Key words: Nipple discharge, Bloody nipple discharge and nonbloody nipple discharge.

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Introduction:

Nipple discharge (ND) is an abnormal finding except in late pregnancy and postpartum period⁽¹⁻³⁾. It is very rare presentation in the childhood and one of the presentation in adult accounting (6-10%) of referral to the breast surgical services⁽⁴⁾. Although the isolated ND may present without palpable breast lump or lesion, its importance should be concerned as it may hid a malignant lesion source.^(2, 4) Isolated pathological ND represents a diagnostic problem to the surgeon because the type of discharge and cytological examination are unreliable for diagnosis⁽⁵⁾. As a rule all adult female must be offered for periodic clinical and ultrasonic examination of the breast with or without mammography⁽⁴⁾.

This triple assessment also applied for those females who are presented with pathological ND to detect any lesion in the breast as lump or mass because the attention must be concentrate to the mass itself⁽⁶⁾. Fine needle aspiration cytology plays basic role primarily in assessment of the breast mass which associated with or without ND⁽⁵⁾. If the FNAC from the mass was not informative; a biopsy should be done whether incisional or excisional to identify the nature of tissue which may responsible for this discharge⁽⁵⁾. ND alone without any breast lesion carry some embarrassment to the surgeon in evaluation the source of this discharge^(5,6). So the cytology of the discharge is fundamental primarily at least to assess the type of the cells involved and detect any malignant base to this ND.

As a second step, radiological visualization of the discharging duct (Ductography) play a role in detecting organic lesion in the duct although it carry a percent of false results and need an expert radiologist with comfortable cooperative patient^(7,8). The isolation of the discharging duct as a biopsy is the best and the shortest way to reach the diagnosis of the source of this ND^(7,9). This is done either as single duct excision which need a fine probing of the discharging duct or total excision of all ducts as a radical procedure (Hadfield's operation). The aim of this study is to assess the relation between ND and the underlying breast cancer in the absence of other pathology in the breast.

PATIENTS AND METHOD:

This is a retrospective study of 46 females patients who were presented with ND in Medical city and Al- Jamiaa private hospital in Baghdad over 10 years period from 1995- 2005. History has been taken regarding type of ND, duration, association with lump and pregnancy with or without hormonal therapy. All patients were subjected to triple assessment (clinical, ultrasonic and mammographic examinations); those patients who have positive findings other than discharge were excluded. Specimens from discharge were examined macroscopically by the naked eye and then send for cytological analysis and accordingly the patients were divided into two groups depending on the presence or absence of red blood cells in these discharges. Both groups were offered for radical sub areolar microductectomy and all specimens were examined histologically.

RESULTS:

Forty-six females patients were included in this study. Mean age was 43.6 (28-71 years). Discharges were examined macroscopically, 21 cases (45.7%) are bloody, the remaining (25 cases) varied between green- yellow (18 cases),

serosanguinous 4 cases and serous (3 cases). Collectively the non- bloody discharge accounts 25 cases (Table1).

Specimens of discharge from each patient were sent for microscopical examination. All macroscopically bloody discharges (21 cases) show positive result for red blood cells. Five cases from those non- bloody discharges macroscopically were revealed a positive result for RBCs. So in summation there were 26 cases RBC+ve, they account (56.5%) from the total number of cases. The remaining (20 cases) of non-bloody ND showed different types of cells varied as chronic inflammatory cells (16 cases), debris and dead cells (3 cases) and one case showed malignant cells. Collectively they account 20 cases (43.5%) (Table2).

All cases were subjected to radical sub-areolar microductectomy (Hadfield) procedure and all specimens were sent for histopathological examination. Those which are RBC+ve (26 cases), showed one case of invasive ductal carcinoma (3.8%). The benign results include 17 cases of duct papilloma (65.4%) and (8) cases of duct ectasia (30.8%) (Table3). Those which are RBC-ve (20) cases revealed 16 cases of benign lesion (80%) : including 9 cases of duct papilloma (45%) and 7 cases of ductectasia (35%) .The remaining 4 cases (20%) reveal malignant tumour including 2 cases of ductal carcinoma insitu DCIS (10%) and one case (5%) lobular carcinoma insitu and one case (5%) as invasive ductal carcinoma (Table 4).

Collectively those 46 patients with pathological ND when their results were reviewed, they showed benign diseases in 41 cases (89.1%), 26 cases as duct papilloma and 15 case as ductectasia while the remaining 5 cases (10.9%) showed malignant tumour as 2 cases of invasive ductal carcinoma, 2 cases of ductal carcinoma insitu (DCIS) and one case of lobular carcinoma insitu (LCIS) (Table 5).

Table 1: Microscopical features of the Nipple Discharge

Type		NO. of Case	%
Bloody		21	45.7%
Non-Bloody	Green Yellow	18	39.1%
	Serosanguinous	4	8.7%
	Serous	3	6.5%
Total		46	100%

Table 2: Microscopical analysis and cytology of the Nipple Discharge

Type of discharge	Type of cells	Number of cases	Total number	%
Bloody discharge	Red blood cells	21	26	56.5
	Red blood cells	5		
Non-bloody discharge	Chronic inflammatory cell	16	20	43.5
	Debris and dead cells	3		
	Malignant cells	1		
Total		46	46	100%

Table 3: The histopathological result of specimens from RBCs positive Nipple Discharge

Types	Detail	No. of case	%	Total %
Benign	Duct papilloma	17	65.4%	96.2%
	Duct ectasia	8	30.8%	
Malignant	Invasive ductal carcinoma	1	3.8%	3.8%
Total		26		100%

Table 4: The histopathological results of specimens from RBCs negative Nipple Discharge

Type	Detail	No. of cases	%	Total %
Benign	Duct papilloma	9	45%	80%
	Duct ectasia	7	35%	
Malignant	Ductal carcinoma insitu	2	10%	20%
	Lobular carcinoma insitu	1	5%	
	Invasive ductal carcinoma	1	5%	
Total		20		100%

Table 5: The total result of the study regarding the number and percent of benign tissues and its relation to malignant tissues

Type	Total no.	Detail	No. of case	%	Total %
Benign	41	Duct papilloma	26	56.5%	89.1%
		Duct ectasia	15	32.6%	
Malignant	5	Ductal carcinoma insitu	2	4.34%	10.9%
		Lobular carcinoma insitu	1	2.2%	
		Invasive ductal Carcinoma	2	4.34%	
Total	46		46	100%	

Discussion:

ND is one of the reasons for referral to the breast clinic. Many studies in the literatures advice the surgical management of all patients who presented with nipple discharge especially if it is bloody as a protective measure to exclude an underlying malignancy⁽⁵⁾.

The number of patients who are presented with bloody ND still higher than those with other type of discharge which is non-bloody^(7,8). Those patients who their ND were non-bloody either greenish-yellow or serous or serosanguinous, separately are less common than bloody type. This may be due to the popular beliefment that those types of ND regarded as physiological in nature and no need for consultation^(8,9). Nipple discharge may present with or without organic breast lesion whether it is manually palpable or identified by ultrasonic or mammographic examination^(2,4). As a rule when we face a case of ND with organic lesion as a mass, our attention and management concentrate to the mass itself and try to know the type of the tissues which constitute this mass by fine needle aspiration(FNA) cytology or biopsy wether excisional or incisional to reach the final diagnosis^(5,6,8,9). But when the surgeon face a lady with isolated pathological ND i.e. not associated with lump or mass, really it's a dilemma⁽¹⁰⁾. Our study concentrate on this point and all patients were exposed to clinical,

mammography and ultrasonic examinations to exclude those cases that have a coexistent organic lesion in the breast.

All cases were referred to cytological examination of their ND to detect the type of the cells. All bloody ND shows RBC positive result for. In addition to those 21 cases there were 5 cases from those who are non- bloody shows RBC+ve, this means that non- bloody ND not necessarily shows negative result for RBC (i.e. occult blood)⁽¹⁰⁻¹³⁾.

In the remaining 20 cases, microscopical examination revealed chronic inflammatory cells, dead cells, debris and malignant cells in decline percentage.

The small percent of malignant cells supported by other studies and stabilize the fact that the incidence of malignant cells in isolated ND still low^(11,14,15) and the microscopical examination of the ND alone is not sufficient to reach the final diagnosis^(6,8,14). Scientifically the discharging duct better to be visualized radiologically to detect the source of the dispensing cells^(14,16,17), although this type of examination as ductography done in outpatient clinic but many patients discomforting and not cooperative in addition it needs expert radiologist who is not always available in our hospitals, for these reasons we omit this type of

investigation and offer our patients to radical sub areolar microductectomy (Hadfield's) procedure to excise all terminal mammary ducts and send it to histopathological examination. Although this procedure must be done under general anesthesia and carry side effect like nipple disfiguring or numbness but it still fundamental to reach the final diagnosis of the ND^(18, 19).

The histopathological results divided in relation to the cases whether it is from RBC+ve or RBC-ve nipple discharge. Biopsies from those who are RBC+ve ND show (25)cases benign lesions, 17 cases of ductpapilloma and 8 cases of ductectasia. Only one case of RBC+ve ND revealed invasive ductal carcinoma(Table 3) . This result differs from other series that didn't reveal any malignant tumour in those RBC+ve ND⁽⁴⁾. However it was in small percent (3.8%). The ductpapilloma is still more prevalent than other types of benign tumors (65.4%) which is the same result as in other studies^(19, 20,23). The biopsies from those who are RBC-ve ND (20) cases show two types of result, benign and malignant.

Sixteen cases revealed benign results that divided into 9 cases of ductpapilloma and 7 cases of ductectasia. Also ductpapilloma still the prominent percent (45%) like many other series^(21,22). The remaining 4 cases shows 2 cases of ductal carcinoma insitu, and one case invasive ductal carcinoma(Table 4). Those 3 cases subjected to simple mastectomy with axillary clearance then the adjuvant chemo and radiotherapy had been completed. One case as lobular carcinoma insitu (LCIS) who was advised for periodic triple assessment of the breast as follow up as this type of lesion represents a tumour marker. Malignancy was still in low percent but we cannot over looked^(21, 23).

In general, benign results are still the highest percent (89.2%) in the assessment of the isolated ND. Ductpapilloma is the most prevalent type (56.5%) These results

coincidental with results of other studies⁽²⁴⁾. The malignant result still low incidence (10.9%) from the total number of cases. But we cannot overlooked this percent which is important to assess the real number^(24, 25).

CONCLUSION:

ND is one of the presenting symptoms of breast diseases. ND alone i.e not associated with organic lesion in the breast account less than 10% from total presentation of breast diseases. It is fundamental to assess the type of ND whether it's physiological or pathological. Bloody ND is the risky sign that bring the adult female to the physician but it is still a poor indicator for malignancy. Microscopical examination of the ND is so important to detect the type of cells which reveal a high percent of RBC+ve specimens in our study. They carry high percent of benign tissues, ductpapilloma was the most prevalent. Malignant result still low.

Those with RBC-ve carry same prevalent percent of benign result as ductpapilloma but the malignant results account an considerable percent. In general, the malignant cases were low in our study but we cannot overlook. Discharge alone is still diagnostic dilemma to the surgeon but examination, cytological analysis and surgical excision with histological examination are fundamental.

RECOMMENDATIONS:

Education of the adult female about the types of the pathological ND and early referral to the physician for examination are important. Negative result of the periodic triple breast assessment in the presence of ND doesn't mean that there is no need for further investigations and evaluation of this discharge.

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