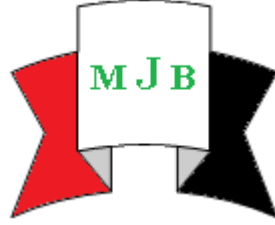


## The Effect of Smoking on the Diagnosis of Breast Lump

Ameer Salah Tawfeeq

Dept. of Surgery, College of Medicine, University of Babylon, Hilla, IRAQ.



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### **Abstract**

**Background:** It has been well-known that smoking is a risk factor for a variety of cancers in humans eg. Lung, stomach and urinary bladder cancers. Till now there has been no clear association between smoking and breast cancer.

There is a well-established relationship between smoking and duct ectasia/ periductal mastitis.

The presented study tries to spot the light on how smokers differ from nonsmokers regarding the diagnosis of breast lumps and the relative percentage of each diagnosis.

**Methods:** A random sample of 114 patients with breast lumps (half of which were smokers and the other half non- smokers) had been studied prospectively and the diagnosis made by "triple assessment", when necessary excisional biopsy, then the diagnosis difference between the smoker and the nonsmoker group had been studied. The smokers had been smoking one packer or more each day.

**Results:** All of the patients were females with age between 13 and 70 years (mean age 41).

The diagnosis of the lumps in the smokers sample was as follows: fibroadenoma 20(35%), fibrocystic disease 16(28%), breast abscess 7(12.3%), carcinoma 7(12.3%), duct ectasia/ periductal mastitis 4(7%), galactocoele 3(5.3%), total number of patients 57.

The diagnosis of the lumps in the non-smokers sample was as follows: fibroadenoma 18(31.6%), fibrocystic disease 16(28%), breast abscess 8(14%), duct ectasia/ periductal mastitis 6(10.5%), galactocoele 4(7%), carcinoma 2(3.5%), Pylloides 1(1.8%), nonhodgkin lymphoma 1(1.8%), lipoma 1(1.8%), total number of patients 57.

**Conclusion:** Reviewing the diagnosis of breast lumps in smokers and nonsmokers reveals two important facts: a significantly higher incidence of breast cancer has been found in the smokers. Another unexpected finding was that duct ectasia/ periductal mastitis was more common in the nonsmoker sample.

### **تأثير التدخين على تشخيص عقدة الثدي**

#### **الخلاصة**

**المقدمة:** من المعروف ان التدخين من مسببات العديد من السرطانات في الانسان مثل: سرطان الرئة والمعدة والمثانة. لكن الى وقتنا هذا لم يثبت ان هناك علاقة واضحة بين التدخين وسرطان الثدي.

من ناحية اخرى هناك علاقة معروفة بين التدخين ومرض توسع قنوات الحليب.

البحث المقدم يسلط الضوء على كيفية اختلاف تشخيص عقدة الثدي بين المدخنات وغير المدخنات.

**الاسلوب:** تم اخذ عينة عشوائية مكونة من ١١٤ مريضة ولديهن عقدة الثدي ( نصف المريضات من المدخنات والنصف الاخر من غير المدخنات) وتم دراستهن مستقبليا والوصول الى التشخيص عن طريق "التقييم الثلاثي " وعند الحاجة اخذ عينة استئصالية للورم. كما وقد تمت دراسة الفرق في نسب التشخيص بين المدخنات وغير المدخنات .

**النتائج:** جميع المرضى كانوا من النساء وتراوحت الاعمار ما بين ١٣ و ٧٠ سنة ( معدل العمر ٤١).

نسب تشخيص الاورام في المدخنات كان بالشكل التالي: الورم الليفي ٢٠(٣٥%), تكيس الثدي الليفي ١٦(٢٨%), خراج الثدي ٧(١٢,٣%), سرطان الثدي ٧(١٢,٣%), توسع قنوات الحليب ٤(٧%), اكياس الحليب ٣(٥,٣%) العدد الكلي كان ٥٧.

نسب تشخيص الاورام في غير المدخنات كان بالشكل التالي: الورم الليفي ١٨(٣١,٦%) , تكيس الثدي الليفي ١٦(٢٨%) , خراج الثدي ٨(١٤%) , سرطان الثدي ٢(٣,٥%) , توسع قنوات الحليب ٦(١٠,٥%) , اكياس الحليب ٤(٧%) , اورام فلوديس ١(١,٨%) , اورام الثدي اللمفاوية نونهوجكن ١(١,٨%) , اورام شحمية ١(١,٨%) العدد الكلي كان ٥٧.

**الاستنتاج:** عند مراجعة تشخيص اورام الثدي في المدخنات وغير المدخنات تم ملاحظة امران: زيادة ملحوظة في سرطان الثدي لدى المدخنات. الامر الاخر غير المتوقع هو ان توسع قنوات الثدي كان اكثر لدى غير المدخنات.

### Introduction

It has been well-known that smoking is a risk factor for a variety of cancers in humans eg. Lung, stomach and urinary bladder cancers [1-3]. Till now there has been no clear association between smoking and breast cancer in most of the presented studies previously.

On the other hand there is a well-established relationship between smoking and duct ectasia/ periductal mastitis[4,5].

The presented study tries to spot the light on how smokers differ from nonsmokers regarding the diagnosis of breast lumps and the relative percentage of each diagnosis.

"Triple assessment" had been advocated to reach the diagnosis using its three pillars; history and examination, fine needle aspiration cytology and imaging (mammography and ultrasonography). In this way the diagnosis can be made in more than 99% of the cases [6-8].

### Patients and Methods

A random sample of 114 patients with breast lumps (half of which were smokers and the other half non-smokers) had been studied

**Table 1** Diagnosis of breast lumps in smokers

Diagnosis	Number of Cases & Percentage
<b>Fibroadenoma</b>	20 (35%)
<b>Fibrocystic Disease</b>	16 (28%)
<b>Breast Abscess</b>	7 (12.3%)
<b>Breast Cancer</b>	7 (12.3%)
<b>Duct Ectasia</b>	4 (7%)
<b>Galactocoele</b>	3 (5.3%)
<b>Total</b>	57 (100%)

prospectively in the breast clinic of Al-Hilla teaching hospital between the 15<sup>th</sup> of January 2012 and the 23<sup>rd</sup> of march 2013 and the diagnosis made by "triple assessment", when necessary excisional biopsy, then the diagnosis difference between the smoker and the nonsmoker group had been studied.

### Results

All of the patients were females with age between 13 and 70 years (mean age 41).

The diagnosis of the lumps in the smokers sample was as follows: fibroadenoma 20(35%), fibrocystic disease 16(28%), breast abscess 7(12.3%), carcinoma 7(12.3%), duct ectasia/ periductal mastitis 4(7%), galactocoele 3(5.3%), total number of patients 57 (table 1).

The diagnosis of the lumps in the non-smokers sample was as follows: fibroadenoma 18(31.6%), fibrocystic disease 16(28%), breast abscess 8(14%), duct ectasia/ periductal mastitis 6(10.5%), galactocoele 4(7%), carcinoma 2(3.5%), Pylloides 1(1.8%), nonhodgkin lymphoma 1(1.8%), lipoma 1(1.8%), total number of patients 57(table 2)

**Table 2** Diagnosis of breast lumps in non-smokers

Diagnosis	Number of Cases &Percentage
<b>Fibroadenoma</b>	18(31.6%)
<b>Fibrocystic Disease</b>	16 (28%)
<b>Breast Abscess</b>	8(14%)
<b>Duct Ectasia</b>	6 (10.5%)
<b>Galactocoele</b>	4 (7%)
<b>Breast Cancer</b>	2 (3.5%)
<b>Phyllodes</b>	1 (1.8%)
<b>Non Hodgkin Lymphoma</b>	1 (1.8%)
<b>Lipoma</b>	1 (1.8%)
<b>Total</b>	100%(57)

### Discussion

The main parameter that had been studied in presented study was smoking. Smoking did not seem to affect the diagnosis of most of the recorded pathologies. The significant difference between smokers and non-smokers was in the carcinoma cases as carcinoma has been diagnosed in 7(12.3%) of the smokers and in only 2(3.5%) of the non-smokers. This difference is regarded as substantial and needs an explanation. There are two possibilities for this. Either smoking is an important causative factor for breast cancer or there is something else that caused this significant difference. It is well-known that breast cancer incidence rises with age [9-11]. In Iraq smokers tend to be older women or the younger women deny their smoking habits for social reasons. In the presented study the mean age for the patients was 41 years but when went back to the records and calculated the mean age for smokers with breast lumps it was 52 years and this shows a significant difference in the mean age.

Duct ectasia/periductal mastitis is known to be caused by smoking due to the arteriopathy that smoking causes or due to the growth of different forms of microorganisms that cause periductal mastitis followed by dilatation of the

lactiferous ducts [12-14 ]. Surprisingly, in the presented study, the relative percentage of duct ectasia/ periductal mastitis has been found to be more in the non-smokers 6(10.5%) than the smokers 4(7%). This may be due to the presence of mastitis which is related to breast lactation in most of the cases [15-17 ].

### Conclusion

Reviewing the diagnosis of breast lumps in smokers and nonsmokers reveals two important facts: a significantly higher incidence of breast cancer has been found in the smokers. Another unexpected finding was that duct ectasia/ periductal mastitis was more common in the non-smoker sample.

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