Epidemiological Study of Fibrocystic Breast Changes in Timisoara

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Summary:
We analyzed 622 patients with fibrocystic changes, both clinical and pathological proven diagnosis, admitted during 1st of January 2004 – 31st of December 2008 in The County Hospital of Timisoara, Romania. The age of patients varied from 14 to 79 years, with the peak incidence of fibrocystic changes being between the age of 40 and 60 years. All patients presented palpably irregular breasts, increased breast density, only 17% accused mastalgia, while only 1% had unilateral nipple discharge. The lesions were mainly situated in the right breast, followed by bilateral localization and the right breast. We found no correlation between fibrocystic changes and hormonal status, polycystic ovary syndrome, cardiovascular pathology, reno-urinary pathology, neuro-psychiatric pathology or diabetes. Obesity was less frequent in our study group. The most frequent pathology associated with fibrocystic changes was thyroid pathology (32%), suggesting the existence of a direct or indirect correlation between the two of them. We suggest performing careful breast examination in patients with thyroid diseases as well as performing thyroid evaluation in patients with FCC.

Key Words: fibrocystic changes, breast, thyroid.

Studyul Epidemiologic al Mastozei Fibrochistice în Timișoara

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Introduction

Fibro cystic changes (FCC) having synonyms: cystic disease, cystic hyperplasia, Reclus disease, chronic cystic mastitis, is the most common breast benign condition that affects the female population. The symptoms of FCC are: palpably irregular breasts and increased breast density, lumpiness or nodularity which may be localized or may involve the whole breast, unilateral or bilateral, cyclic mastalgia and even permanent mastalgia, nipple discharge.[1] FCC includes various pathological lesions: cysts (macro and micro), adenosis, epithelial and ductal hyperplasia with or without atypia, apocrine metaplasia, radial scar, papilloma.[2] The relative risk for breast cancer varies according to the histological lesions: nonproliferative lesions, cysts, mild hyperplasia of the usual type do not

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increase the risk of breast cancer; sclerosing adenosis, moderate or florid ductal hyperplasia of the usual type, radial scar, intraductal papilloma increase the relative risk of breast cancer by 1.3–1.9, while atypical hyperplasia, atypical ductal hyperplasia increase the relative risk by 3.9–13.0. [3, 4, 5, 6] Although there are many studies of the risk of cancer of FCC, little is known about the etiology of this disease and the predisposing factors.

**MATERIAL AND METHOD**

We have conducted a retrospective study of patients with fibrocystic changes admitted in The County Hospital of Timisoara, Romania. We have reviewed the clinical data of patients admitted in the hospital during 1st of January 2004 – 31st of December 2008 and we have included in the study all patients with the diagnosis of FCC, both clinical and pathological proven diagnosis of FCC. We analyzed various factors: age, hormonal status, breast location of FCC, associated pathology.

**RESULTS**

During 5 years 622 patients with the diagnosis of fibrocystic changes were admitted in The County Hospital of Timisoara. All of them were women. 156 of them were admitted with the main diagnosis of FCC, the rest, 466, had FCC as secondary diagnosis. Most patients (154) with the main diagnosis of FCC were hospitalized in surgery departments for diagnosis and surgical treatment – excisional biopsy or lumpectomy while only 2 of them were hospitalized in other types of departments (endocrinology).

The age of the patients varied between 14 and 79. The highest incidence of FCC was in the 40-60 years old group (372 patients), followed by the 20-39 years old group (204 patients). It was less frequent after 60 years (40 patients) and rare before 20 years of age (6 patients).

In the patients included in our study the localization of FCC lesions was most frequent in the right breast (271 patients), followed by bilateral localization (215 patients) and the least frequent in the left breast (136 patients). Fig.2

All patients presented “lumpy” breasts and increased breast density, 17% accused mastalgia (10% permanent mastalgia, 7% cyclical mastalgia) and only 1% presented nipple discharge. The patients with hyperprolactinemia, presenting galactorrhea, were not included in the group presenting nipple discharge. Fig.3

The hormonal status of the majority of patients was before menopausal, while 41% were at menopause (10% in surgically induced menopause). None of the patients was pregnant or breastfeeding. Fig. 4

We studied the medical pathology of the patients with FCC, and the results were Fig.5:

- Endocrine pathology 33.23% (225 patients): autoimmune thyroiditis-76, Basedow disease-64, goiter with normal thyroid function-20, thyroid nodule with normal thyroid function-22, hypothyroidism due to iodine deficiency-12, surgical hypothyroidism-8, surgical hypoparathyroidism-6, pituitary adenoma-12, hyperprolactinemia-5; Fig.6

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**Fig. 1** Number of Cases with Fibrocystic Changes as Main and as Secondary Diagnostic and Age Distribution of Patients

**Fig. 2** Anatomic Distribution of FCC Lesions
Cardio-vascular pathology 17.13% (116 patients): hypertension-60, ischemic heart disease-30, varicose veins-26;
- Genital pathology 13.59% (92 patients): uterine leiomyoma-32, polycystic ovary syndrome-28, ovarian cyst-10, primary ovarian insufficiency-4, menstrual disorders: amenorrhea-6, hypermenorrhea-4, hypomenorrhea-4 and dysmenorrhea-4;
- Reno-urinary pathology 13.29% (90 patients): obstructive pyelonephritis-46, renal calculi-38, renal cyst-6;
- Nutrition and metabolic pathology 9.45% (64 patients): obesity-36, diabetes-28;
- Other breast pathology 7.09% (48 patients): infiltrative breast carcinoma-14, gigantomasty-16, fibroadenoma-16, recurrent breast carcinoma-4; Fig.7
- Neuro-psychiatric pathology 5.76% (39 patients): anxiety disorder-22, depressive disorder-16, myasthenia gravis-1:
- Other 0.44% (3 patients): cystic fibrosis-1, rheumatoid arthritis-1, Felty syndrome-1

Fig. 4 Hormonal status of Patients with FCC

Fig. 5 Other Diseases in Patients with FCC
DISCUSSIONS

In this study we tried to make an overview of the characteristics of FCC, as, to our knowledge, no such study was made in our area. We hoped to find characteristics that might lead to a better understanding of the factors contributing to the development of FCC. The incidence of this disease is not well known, as few women with these lesions seek medical advice. The incidence in autopsy series varies between 58% [7] to 61% [8].

The role of hormonal abnormalities in the etiology of FCC is suspected. Sitruk-Ware discovered that women with FCC had lower progesterone: estradiol ratio [9, 10]. In our study the peak incidence of FCC was between the age of 40 and 60 years, 41% having menopause. Ernster [11] and Petrakis [12] demonstrated that the levels of estrogens in plasma was much lower than the level in breast fluid, but did not find any correlation between the values, the fluctuation of their concentration in the two fluids. There seemed to be a correlation between polycystic ovary syndrome and FCC pleading for a hormonal etiology of FCC [14, 15], but there are studies that found no association between the two of them [16]. In our study only 28 patients (4.5%) had polycystic ovary and more than 40% had a menopause hormonal status, so we did not find any correlation between sexual hormones and FCC.
Cardio-vascular pathology, diabetes and reno-urinary pathology was not higher in patients with FCC than in the general population.

Different studies [17, 18, 19] found that obesity is a protective risk factor for fibrocystic changes, although the mechanism is not understood. In our study 5.8% of patients with FCC were obese. The incidence of obesity in women in Romania is 19.1% [20]. We found a smaller incidence of obesity in patients with FCC compared to the general female population.

The most frequent pathology associated to FCC in our study was the thyroid pathology-32%. This raises the question if there is a correlation between the thyroid hormones and the development of FCC or if there is a common pathway in their etiology, for example an altered iodine metabolism, inappropriate iodine intake, endogenous or exogenous substances that influence the thyroid as well as the breast. 60-80% of the total iodine is found in the extra thyroid tissues, including the breast, gastric mucosa, salivary glands [21]. During lactation the breast has the capacity to iodinate [22, 23], but no iodination capacity of the breast has been proved in the non lactating period. The role of iodine in the breast pathology is also suspected because of the lower incidence of breast cancer in populations having a high dietary iodine intake, as the Japanese [24].

In our study group we found one patient with FCC who also had cystic fibrosis. The breast pathology in women with mucoviscidosis is not well studied. An autopsy review of 19 women with cystic fibrosis found various degrees of fibrosis in their breasts and 3 of them had breast cancer [25].

**CONCLUSION**

Our study of 622 patients with FCC found that the greatest incidence is in the 40-60 years old group. The lesions were most frequently situated in the right breast. We found no correlation between the hormonal status, polycystic ovary syndrome and FCC. Obesity was less common in patients with FCC compared to the general population, seeming to play a protective role in FCC. Thyroid pathology was often encountered in patients with FCC, suggesting the existence of a direct or indirect correlation between the two of them. We suggest performing careful breast examination in patients with thyroid diseases as well as performing thyroid evaluation in patients with FCC.

**REFERENCES**


REFERENCES (CONTINUED)


