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Focal Fibrous Disease of Breast

A Common Entity in Young Women

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Summary. The study concerns a problem of practical importance in the daily routine work. 218 cases of focal fibrous disease of the breast were classified into three types with conventional methods of pathohistology and statistics. The peak incidence between 20 and 25 years is considerably lower than the incidence figures reported by other authors. The authors postulate the progressive evolutive nature of the lesion.

Key words: Breast – Fibrous – Mastopathy.

Introduction

Fibrous disease of the breast is a frequently ignored and poorly defined pathological entity. Haagensen (1971a) points out that "its identity has usually been lost among the heterogeneous group of breast lesions ... lumped together as fibrocystic disease". Most pathologists and surgeons will agree to its relatively low incidence among the most common breast processes such as fibroadenomas, carcinomas and fibrocystic disease. Minkowitz (1973) found 51 cases with fibrous disease among 1491 patients with benign breast conditions.

Fibrous disease is defined as a localized fibrous proliferation of the breast stroma leading to a progressive disruption and eventual obliteration of the lobular parenchyma (Stewart, 1950; Haagensen, 1971a; Puente, 1974).

The present study represents a review of 218 patients with focal fibrous disease. Its incidence appears unusually high among our surgical breast biopsy files.

Material and Methods

The material reviewed comprised an average of three H&E stained sections from over 300 surgical breast biopsy specimens with diagnoses ranging from breast fibrosis to fibroadenosis. Of these

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we selected 218 patients with fibrous disease. Certain microscopic findings as cysts, apocrine metaplasia, duct ectasia or sclerosing adenosis with myoepithelial proliferation, ruled out the diagnosis of this entity.

The selected cases represent a 7.9% of the 2746 cases of the breast surgical pathology specimens seen at our institution between 1970 and 1978.

Microscopically and according to Minkowitz (1973) the lesion was classified into three types or grades, based on the relationship of the fibrous proliferative component and the disruption and obliteration of the lobular architecture. P.A.S., reticulin and trichrome special stains were also used to evaluate the stromal changes.

Curves of distribution by age among the three types were performed. Statistical analysis establishing comparisons among them and with other common breast diseases were determined.

Results

Clinically, the lesion presented as a non-tender, firm, discrete, movable and nodular breast mass, having no predilection for any breast quadrant. Other clinical signs such as adherence to skin, nipple discharge etc. were absent. Occasionally the lesion was as discrete and nodular as a fibroadenoma.

Although data regarding the number of pregnancies were incomplete, low parity appeared to be the rule. None of the cases were associated with pregnancy. The age of the patients ranged from 13 to 72 years with a mean of 28.6 (Table 1). The peak incidence was between 20 and 25 years. A total of 142 cases, representing 65% of the lesions developed before age 30 (Fig. 1).

Macroscopically the lesion is coin-like nodular and discrete, measuring between 1.5 and 6 cm in greatest diameter. The cut surface is whitish, solid, homogeneous and free of cysts.

Microscopically, the process was classified into three main types that we believe may correspond to grades or evolutionary stages. The first type is characterized by a young cellular and vascular fibrous interlobular stroma encircling the lobular parenchyma. Dilated venules, lymphatics and capillaries are prominent and often surrounded by a ring of lymphocytes. The lobules display variable degrees of fine, often myxoid and oedematous, periacinar fibrosis. The acini

Table 1. The figures reflect the analysis of 2746 surgical breast biopsy specimens

Breast disease	N. of cases	Age	
		$\bar{x}$	s.d.
Fibrous	218 (7.9%)	28.6	12.048
Type I	38	25.5	8.359
Type II	95	27.5	9.632
Type III	84	31.2	15.151
Fibroadenoma	562 (20.5%)	26.5	10.24
Fibrocystic	611 (22.3%)	42.1	8.82
Carcinoma	716 (26.1%)	53.5	12.74
Other	639 (23.2%)	–	–

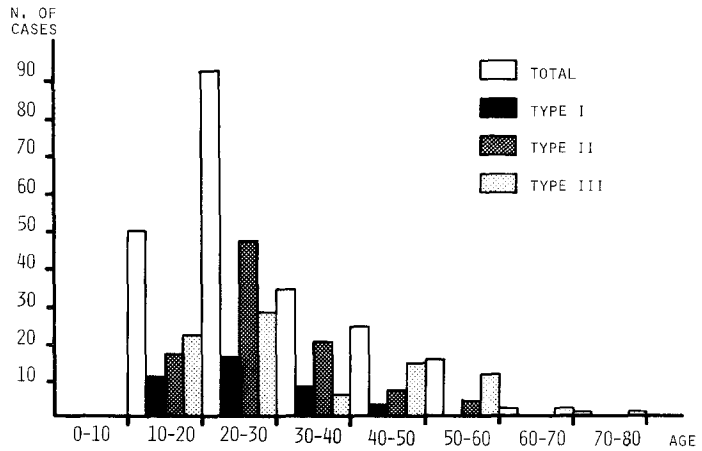

Fig. 1. Histograms showing the distribution by age among the three types of focal fibrous disease. Note the peak incidence in the third decade

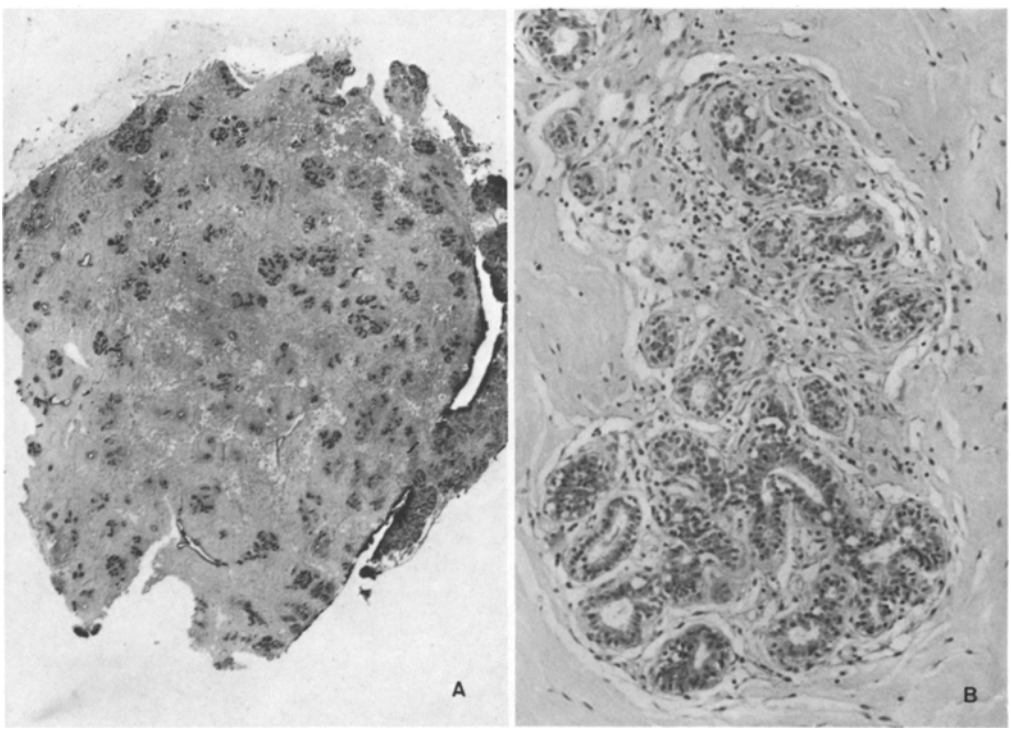

Fig. 2A and B. Focal fibrous disease, type I. **A** Nodular aspect of the entire lesion. The interlobular fibrous stroma encircles minimally altered lobules. H & E. ×3.5. **B** Thickening of the basal membranes, discrete epithelial proliferation and lymphocytic infiltration. H & E. ×150

show a slight or moderate degree of orderly adenosis with some thickening of the basal membrane. A slight chronic inflammatory infiltrate is present in the intralobular stroma (Fig. 2).

This group was composed of 38 patients representing a 17.4% of the total. The mean age was 25.5 years and 71% of the lesions developed before age 30 (Fig. 1).

The interlobular stroma of the second type is less cellular and disrupts the lobular architecture. Focally some of the lobules are partially obliterated and proliferative acinar changes are occasionally seen. The inflammatory component is less conspicuous. The vascularity remains and is more prominent in and around those lobules less involved by the fibrous process (Fig. 3).

The second group was the most numerous comprising 95 patients (43.6%). The mean age was 27.5 years and 67% of the lesions were first noticed before age 30 (Fig. 1).

In the last type the stroma is almost acellular and often hyalinized. The lobules are obliterated. Tiny ghost-like rounded structures appear to represent the previous location of the lobules. Lymphangiectatic channels are quite significant (Fig. 4). The mean age of the 84 patients included here was 31.2 years (Table 1). Only 59% of these were less than 30 years old.

The table reflects the relative frequency of the most common breast diseases in our laboratory. The distribution of these entities by age and their relationship to focal fibrous disease are shown in Fig. 5.

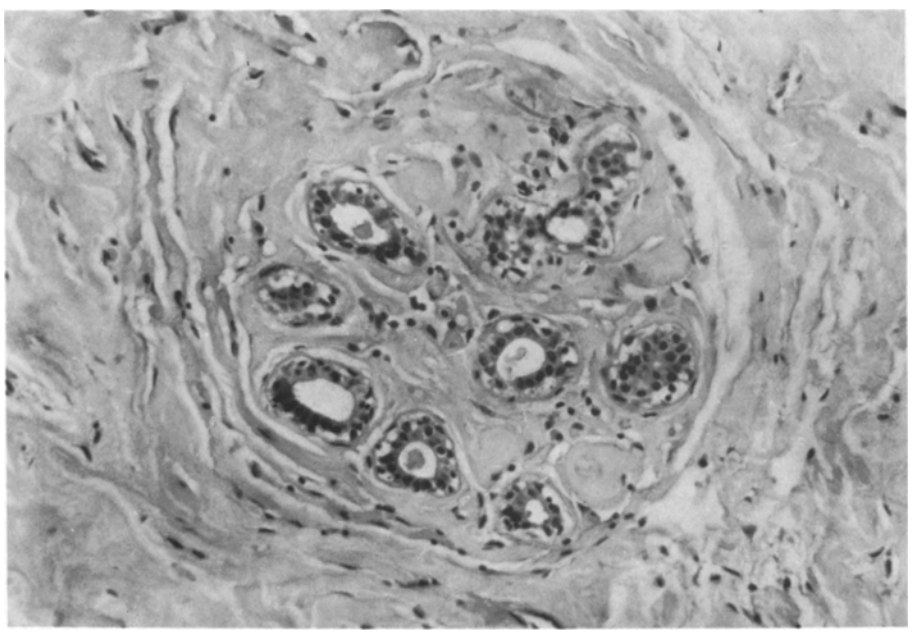

Fig. 3. Focal fibrous disease, type II: Fibrosis involving and partially disrupting the lobular architecture. Detail of a lobule showing obliterated epithelial units. H. & E. ×250

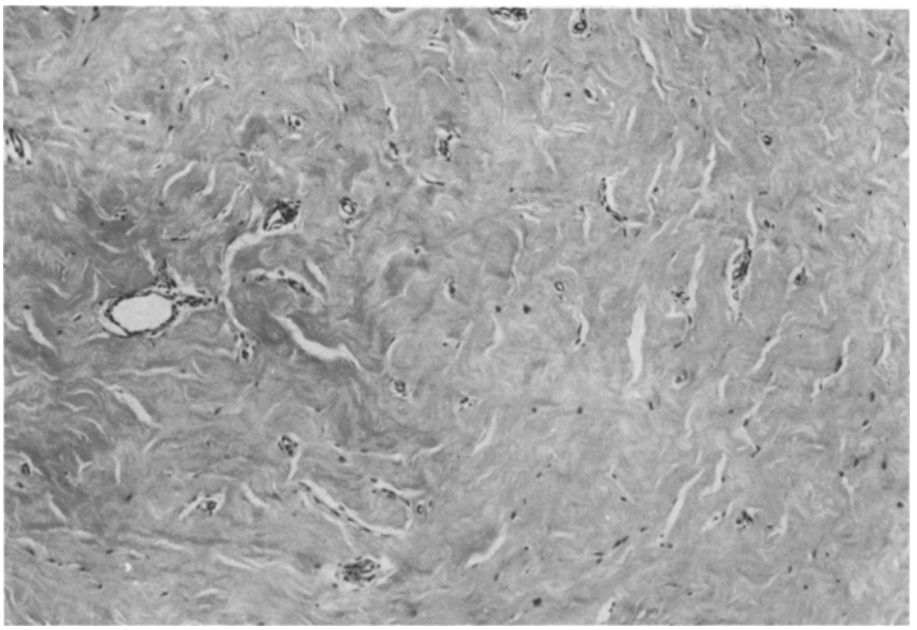

Fig. 4. Focal fibrous disease, type III: Marked fibrosis and atrophy of lobular parenchyma, with complete lobular obliteration. H. & E. ×100

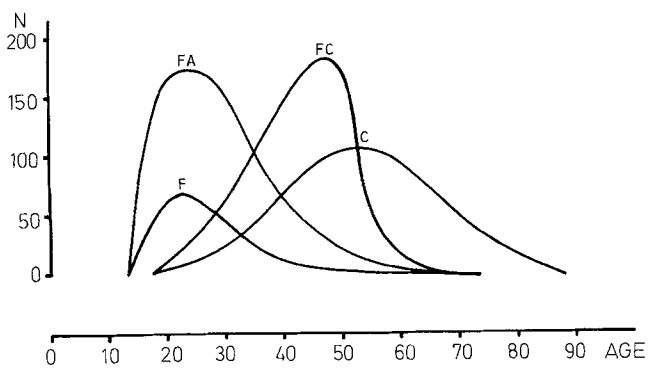

Fig. 5. Distribution by age of fibroadenoma (*FA*), focal fibrous disease (*F*), fibrocystic disease (*FC*) and cancer (*C*)

Discussion

We can consider from this study that focal fibrous disease of the breast is not an uncommon type of mastopathy and that apart from potential ethnic or geographical differences, its reported low ranking among other benign breast conditions is due in part to a loss of identity as a true pathological entity.

Researching the literature we found no figures regarding the true incidence of the process. Haagensen's study (1971a) based on 119 cases appears in marked contrast with the more than 2,000 cases of fibrocystic disease reported by the

same author (1971b). The 51 patients reviewed by Minkowitz (1973) represent an incidence of 3.9% among benign breast diseases. The figure is about half the index of 7.9% obtained in this work from a total of 2,746 surgical breast biopsy specimens embracing benign and malignant breast conditions.

The peak incidence between 20 and 25 years is considerably lower than the incidence figures reported by Haagensen (1971a) (between 35 and 39 years) and Minkowitz (between 25 and 40). The incidence curves of fibroadenomas and fibrous disease are almost identical (Fig. 5). Fibrocystic disease affects mainly older women (peak incidence 45–50 years).

Of particular interest are the results of the statistical comparisons among the three types (Table 1, Fig. 1). The fact that differences between the mean ages of the first and third types are statistically significant ($P<0.01$), appears to support the view that the latter evolves from the first. The "t" test is also significant between the second and third types ($P<0.05$), reinforcing the hypothesis of the evolution of the disease. The first and second groups are not statistically different. This may be because of the short time interval between the mean ages which, in turn, may reflect the rapid evolution of one type into the other.

The pathological changes and statistical data point to a progressive process. The mean time of development of a full blown third type lesion appears to be 5.7 years.

The conspicuous vascular changes seem to favor a vascular, perhaps hormone mediated, local phenomenon as the pathogenetic mechanism initiating the process. Further clinicopathological studies with endocrine correlations are needed to stablish the precise nature of this disease.

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