Mondor's Disease and Breast Cancer

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Mondor's disease or thrombophlebitis of the subcutaneous veins of the chest region is an uncommon condition and is rarely associated with breast cancer. From January 1980 to June 1990, 63 cases of Mondor's disease were diagnosed (57 women and 6 men). In 31 patients, no apparent cause was determined (primary disease), whereas in 32 cases, the disease was secondary because the etiopathogenesis could be discerned. The identified potential causes were three cases of myentasis (all in men), eight cases of accidental local trauma (seven in women), seven cases of iatrogenic origin (three surgical breast biopsies, one skin biopsy, one needle biopsy, one mastectomy, and one reconstruction operation), six cases of inflammatory process, and eight cases associated with breast cancer (all females). Three of the tumors were less than 1 cm in diameter. The authors performed conservative surgery in four patients and demolitive in the other four. In this series, the incidence of breast cancer in association with Mondor's disease was the highest yet reported (12.7%). It was concluded that Mondor's disease may at times be caused by breast carcinoma. This association is by no means exceptional and implies that mammography should always be performed for Mondor's disease, even when the results of a physical examination are negative. *Cancer* 1992; 69:2267–2270.

Mondor's disease or thrombophlebitis of the subcutaneous veins of the chest region is an uncommon condition, and generally is thought to have little significance. Its appearance is not accompanied by general symptoms such as fever or malaise. The symptoms resolve spontaneously in 2 to 10 weeks from onset, so there is no indication for any specific therapy.

The disease has been associated with traumatic events, breast surgery, infection, excessive physical strain, and rheumatic arthritis.[1–5] In cases not associated with trauma, differential diagnosis against lymphangitis, arthritis, mastitis, and rarely fibromatosis is required.[6] Johnson performed a detailed microscopic study of the condition[7] without reaching important etiopathogenetic conclusions. Only 10 of the 250 (4%) patients with Mondor's disease reported in the literature had associated with breast cancer.[8–11] However, in our experience, this association appeared more frequently than reported because 8 of 63 (12.7%) patients had histologically documented cancer of the breast.

Case Reports

From January 1980 to June 1990, 63 patients with Mondor's disease had their conditions diagnosed at the Breast Cancer Centre of the Vittore Buzzi Hospital, Milan, the General Surgery Division of the Civil Hospital, Padua, and the National Cancer Institute, Milan, Italy. Of the 63 patients, there were 57 women and 6 men. The age range was 27 to 66 years of age (median, 45 years of age).

In 31 patients, no apparent cause was determined (primary disease), whereas in 32 patients the disease was secondary because the pathogenesis could be determined. Of the 31 patients with primary disease, 15 had an involvement of the thoracoepigastric veins and 4 of the lateral thoracic veins. In the remaining 12 patients, the veins involved were not stated. A rosary-bead appearance was noticed in two patients. Three patients had bilateral disease; in one, the disease was associated with thrombophlebitis of the upper limb.

There were 32 patients with secondary disease, 5 of whom were male; all had monolateral disease.

The identified potential causes were as follows:

three patients with myentasis, all men;
eight patients with accidental local trauma, seven women;
seven patients with disease of iatrogenic origin: three with surgical breast biopsies, one with skin biopsy, one with needle biopsy, one with mastectomy, and one with operation for reconstruction;
six patients with inflammatory processes: two with infections of the areolar sebaceous glands, two with plasma cell mastitis, one with infection of the inframammary fold, and one with postmastectomy abscess;
eight patients, all women, had associated breast cancer; three

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Accepted for publication July 2, 1991.

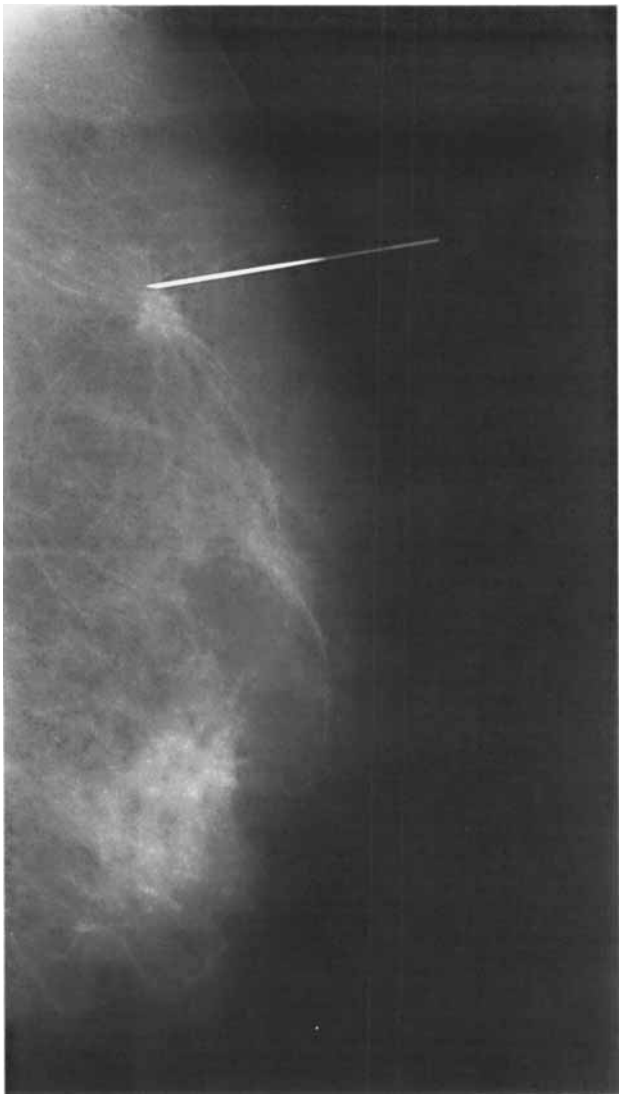

Figure 1. Radiogram of a breast with Mondor's disease, showing nonpalpable carcinoma. The needle has been placed at the beginning of the cutaneous furrow.

had tumors that were less than 1 cm in diameter. The main characteristics of these eight patients are reported in Table 1. In none of these patients did results of histologic examination show lymphangitic pathology or peritumorous lymphatic invasion, thus confirming the diagnosis of Mondor's disease.

Discussion

Mondor's disease was first reported by Fagge in 1870.[12] Other descriptions were given by Fiessinger and Mathieu[13] in 1922 and later by Williams[14] and Daniels.[15] Mondor's[16] 1939 account of this disease is the best known. More recent reports were given by Oldfield[17] and Tabar and Dean.[18]

The condition occurs three times more frequently in females and generally involves one or two segments of the thoracoepigastric veins running obliquely from the epigastrium to the anterior axillary line over the lateral aspect of the breast. More rarely it involves the lateral thoracic veins along the lateral margin of the pectoralis major muscle. Other minor subcutaneous veins occasionally involved are those draining the medial and superior portion of the breast, although they are tributaries of the external jugular vein and the internal mammary vein. Infrared photographic studies[19] have shown two types of venous plexus in the breast and adjacent chest wall: one with a prevalent transverse component and one with a prevalent longitudinal component. Farrow[8] reported that the veins draining medially toward the internal mammary trunk are never affected and that there is no apparent explanation for this. However, one of our patients had this unusual presentation, which was associated with a breast carcinoma.

Typical symptoms are the appearance of one or more palpable, usually painful, subcutaneous cords. These can be observed by pulling the skin or sometimes

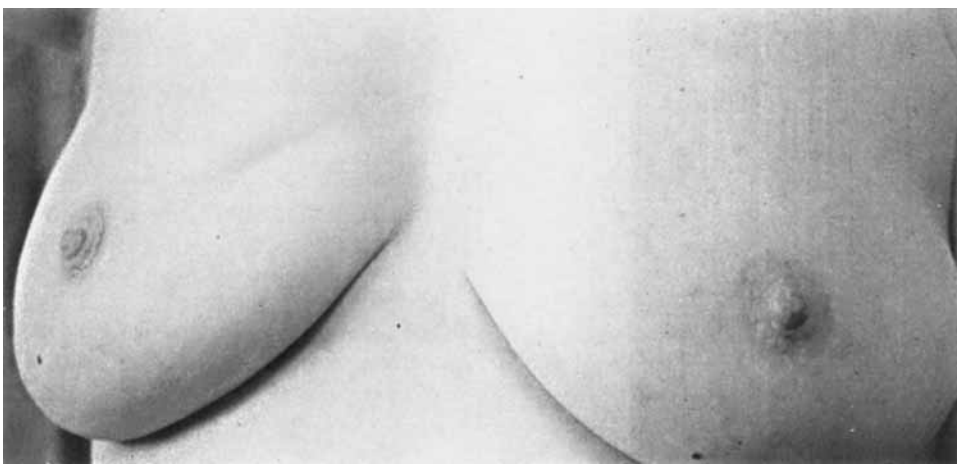

Figure 2. Photograph showing a transverse cutaneous furrow on the internal quadrant of a breast, an expression of Mondor's disease.

Table 1. Main Characteristics of Patients With Mondor's Disease and Breast Cancer

Variables	Patient 1	Patient 2	Patient 3	Patient 4	Patient 5	Patient 6	Patient 7	Patient 8
Sex	F	F	F	F	F	F	F	F
Age (yr)	66	52	52	47	51	55	36	55
First symptom	Vertical subcutaneous cord	Node	Transverse cord	Small subcutaneous cord	Node, subcutaneous cord	Node, subcutaneous cord	Node, transverse cord	Node, vertical cord
Clinical examination	Vertical subcutaneous cord	2 nodes and transverse strip	0.8 cm suspicious node	Small subcutaneous cord	Tumor, subcutaneous cord	Tumor, cord, nipple retraction	Node, transverse cord	Benign node
Radiographic diagnosis	0.9 cm suspicious area	Two suspicious areas	Suspicious node	Dubious area	Tumor	Tumor	Tumor	Tumor
Treatment	QUART	Patey	QUART	Patey	Patey	*	QUART	Patey
Final diagnosis	IDC	Bifocal IDC	ILC	IDC	IDC	*	IDC	ILC
	pT1b, pN0	pT2, pN1	pT1b, pN0	pT1b, pN0	pT1c, pN0		pT1, pN0	pT2, pN0

IDC: Infiltrating ductal carcinoma; ILC: Infiltrating lobular carcinoma; QUART: quadrantectomy, axillary dissection, and radiation therapy.

* Treatment was not performed because the patient died of toxicity of chemotherapy for controlateral breast cancer.

raising the limb. A protrusion or furrow is seen in the skin near the vein, depending on the thickness of the skin. These alterations are made more evident by using a beam of light to graze the skin surface. More rarely the cords have a pearl necklace appearance. In a patient reported by Chiedozi and Aghahowa,[11] one of the pearls was a small breast cancer. Eastcott[20] reported the onset of small palpable cords on the arm after radical mastectomy. These lesions are similar to the transverse cords we observed and seem to be caused by a thickening or thrombosis of the thin subcutaneous veins draining toward the axilla, where iatrogenic deceleration of the blood flow occurs.

In our series the incidence of breast cancer in association with Mondor's disease was 11.7% (the highest reported); we believe that the lower rate of this association may be partially attributable to insufficient mammographic investigation, which in our experience may reveal occult cancer foci.

In addition, it seems to us that the condition should constitute an indication for mammography, particularly because carcinoma of the breast may be nonpalpable, as it was in two of our patients (see Fig. 1). Thus, the presence of Mondor's disease, which previously has been considered an idiopathic syndrome, does not rule out the presence of a tumor.

In our study, in four of the eight patients with associated carcinoma, the lesion was marked by a transverse cutaneous furrow of variable length, more or less consistent to palpation (see Fig. 2). In three patients, one end of the furrow corresponded to the neoplastic node; in the other patient, the tumor was located in the middle of the line.

Conclusions

The data obtained from our series lead to the conclusion that Mondor's disease usually is an idiopathic condition but that it occasionally may be caused by a breast carcinoma. This association is by no means exceptional and implies that mammography should be performed in patients with Mondor's disease, even if the physical examination yields negative results.

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