

A Case of Mondor's Disease

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Mondor's disease is a thrombophlebitis of the superficial veins in the breast and anterior chest wall and is a relatively uncommon entity. The majority of cases have no clear etiology or precipitating event and its exact cause remains unclear, but it may be initiated by local trauma, infection, vigorous and repetitive exercise of the upper extremity, or surgery involving the area. We report a case of Mondor's disease in a 45 year-old female who had suffered from a palpable, tender and cord-like subcutaneous lesion on the right thoracoabdominal wall, diagnosed by ultrasonography. (*Ann Dermatol* 17(2) 58~61, 2005)

Key Words: Mondor's disease, Thoracoabdominal wall, Ultrasonography

Mondor's disease is a rare disorder characterized by superficial thrombophlebitis, classically of the anterolateral thoracoabdominal wall¹. Clinically it manifests as a hard painful cord of tissue along the affected vein¹. It was described by Fagge² for the first time in 1869, but gained its eponym in 1939 when four cases of "subcutaneous angiitis" of the chest wall were described by the French surgeon Henry Mondor³. However, despite the extensive information available about the clinical features and course of Mondor's disease, the medical literature, including Korean dermatologic literature, contains limited information about imaging findings. It is important for the physician to exclude systemic disorders and breast malignancies when diagnosing cases of Mondor's disease. We think imaging findings, such as ultrasonography, could become a useful tool in diagnosing Mondor's disease, so that overly aggressive evaluation can be avoided.

CASE REPORT

A 45-year-old woman, with no history of unusual exercise or trauma, visited our department with a 4-day old palpable, tender and cord-like subcutaneous lesion on the right thoracoabdominal wall. Family and personal medical history was unremarkable, and physical examination was normal except for the skin findings. Examination revealed a cord of normal colour adhering to the skin, which extended from the right anterior chest vertically along the anterolateral wall of the chest to the ipsilateral lower abdominal wall. The cord was mildly tender and ecchymotic lesions were noted on the anterior chest and abdomen, probably caused by abnormal imposition of the hands to treat the subcutaneous lesion (Fig. 1). The breast examination was unremarkable with no masses, tenderness, or nipple discharge, and no axillary adenopathy was detected on either side. Routine biochemical laboratory tests were normal. Levels of protein S, protein C, erythrocyte sedimentation rate, cryoglobulin and anticardiolipin antibodies were within the normal limits or negative. The chest X-ray was unremarkable and a mammogram did not reveal any malignancy. The ultrasonography revealed a long vertically-oriented, thrombosed vein along the right anterior abdominal wall, with thickening and increased echogenicity of the surrounding subcutaneous fat (Fig. 2), which the radiologist diagnosed as Mondor's

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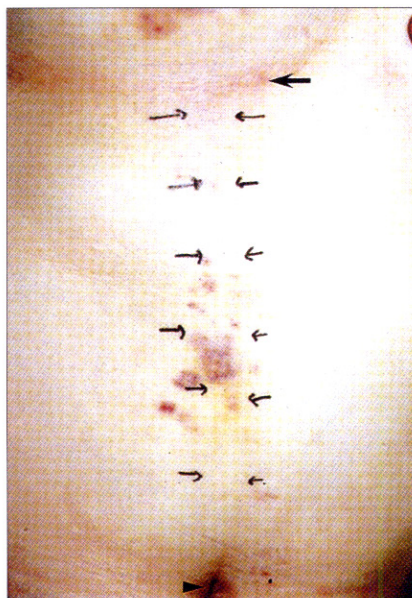


Fig. 1. A palpable, tender and cord-like subcutaneous groove and ecchymotic lesions on the right thoracoabdominal wall (arrow: inframammary fold, arrow head: umbilicus).

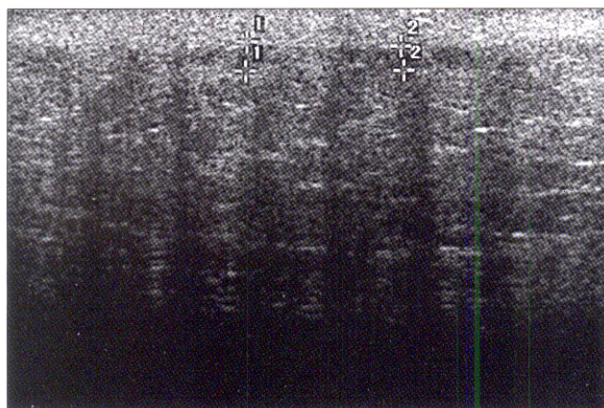


Fig. 2. A long vertically-oriented thrombosed vein along the right anterior abdominal wall, with thickening and increased echogenicity of the surrounding subcutaneous fat.

disease. A biopsy specimen of the skin was taken from the subcutaneous lesion on the right anterior chest to confirm the diagnosis. Histologic findings revealed a fibrous, thickened vessel wall and occlusion of the vascular lumen by organized thrombus in the subcutaneous fat tissue (Fig. 3A). However, a month after the biopsy was taken, we observed fibrotic change and no vascular structure in the

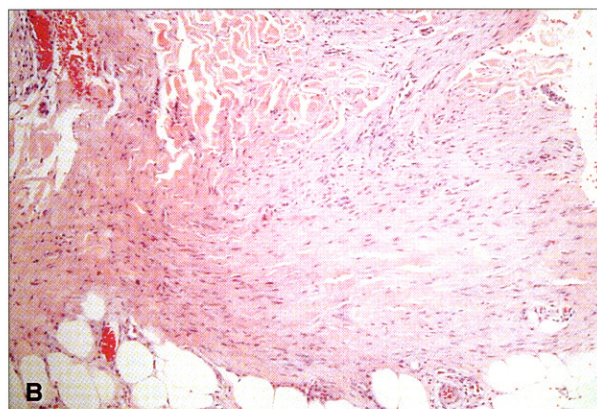
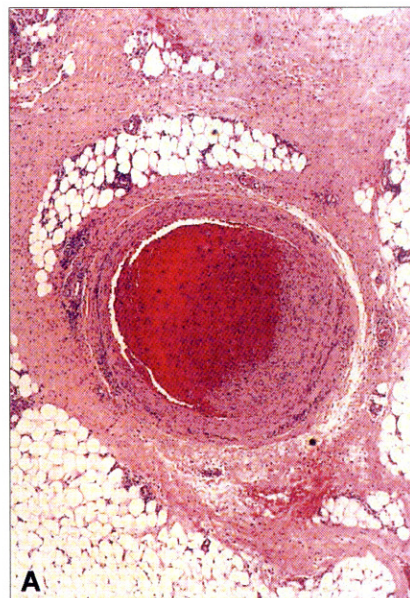


Fig. 3. A. Fibrous, thickened vessel wall and occlusion of the vascular lumen by an organized thrombus in subcutaneous fat tissue. B. Fibrotic change and no vascular structure in the subcutaneous fat tissue.

subcutaneous fat tissue (Fig. 3B). The patient was treated with naproxen sodium 550 mg and roxithromycin 300 mg daily for 2 months. Three months later, almost all of the subcutaneous lesions had disappeared without sequelae.

DISCUSSION

Clinical features of Mondor's disease include a sudden onset of chest pain followed by palpable, visible, tender and cord-like nodules adhering to skin¹. Perivascular inflammation may cause the tissue

Table 1. Cases of Mondor's Disease in Korean Dermatologic Literature

| Reference | Sex/ Age | Clinical features | | | | Associated condition | Treatment |
|----------------------------|-------------|----------------------------------------|------------|--------------|--------------|-------------------------|--------------------------------------|
| | | Location | Symptom | Bilaterality | Multiplicity | | |
| Choi et al. ⁶ | F/43 | left thoracoabdominal wall | tenderness | — | — | malignant lymphoma | indomethacin |
| | M/43 | right upper abdomen | tenderness | — | — | malignant lymphoma | indomethacin |
| Lee et al. ⁷ | M/43 | left lower abdomen | tenderness | — | — | strenuous exercise | — |
| Yoon et al. ⁸ | F/30 | left abdomen | tenderness | — | — | — | — |
| Jee et al. ⁹ | F/49 | both sides of abdomen | — | + | — | strenuous exercise | — |
| Jeong et al. ¹⁰ | M/39 | anterolateral thoracoabdominal wall | tenderness | — | + | strenuous exercise | steroid IM & ID |
| presented case | F/45 | right thoracoabdominal wall | tenderness | — | — | — | naproxen sodium, roxithromycin |

overlying the vein to retract. Females are more affected than males in a ratio of about 3 : 1, and the peak incidence is between 21 and 55 years of age^{4,5}. Cases previously reported in Korean dermatologic literature are summarized in Table 1⁶⁻¹⁰.

The etiopathogenesis of the disease is not entirely clear. About 40-50% of cases may be attributed to traumatic injury, surgery involving the area, vigorous and/or repetitive exercise of the upper extremity, pregnancy, malignancy such as breast cancer, infection, tight bandaging, rheumatoid arthritis, filariasis, or radiation. However in 50-60% of cases, the causes are not determined^{1,4}. Catania et al. found breast cancer in 12.7% of a series of 63 patients with Mondor's disease of the breast¹¹, therefore some authors still think that a mammography should be performed, even when the results of physical examination are negative, in order to rule out malignancies of the breast^{5,12}. In this case, the occurrence of Mondor's disease is thought to be due to the injury of endothelium of the blood vessels due to the direct pressure of the tumor itself, or an axillary metastatic lymph node on vein, rather than in relation to a systemic disease^{6,13}. In Korean dermatologic literature, two cases of Mondor's disease in patients with malignant lymphoma have been reported⁶.

Mammographic features of Mondor's disease of the breast usually reveal a thickened, rope-like density indicative of a thrombosed portion of the superficial vein^{14,15}. A tangential view can accentuate the superficial nature of the involved venous structure and help to distinguish it from dense breast parenchyma or isolated ductal dilatation¹⁴.

Reports of ultrasonographic findings of this condition are rare. Ultrasonography may be particularly important in younger patients with breast abnormalities^{14,16}. The ultrasonographic appearance of a superficial hypoechoic or anechoic noncompressible tubular structure, coupled with the physical findings, should suggest a diagnosis of Mondor's disease^{14,17}. Ultrasonography also enables the entire course of the thrombosed vessel to be identified, which may not be visible in a mammographically dense breast¹⁸. Therefore, ultrasonography is suitable as picture-giving procedure in the diagnostics, process evaluation and in the demarcation in relation to possible differential diagnoses of Mondor's disease¹⁹. On color Doppler examinations, no flow signal was detected within the hypoechoic tubular structure¹⁵.

Nonmalignancy-associated Mondor's disease is a benign, self-limiting process with spontaneous resolution within 2 to 8 weeks without treatment, but an

asymptomatic or tender cord can remain for weeks or months afterwards¹³. Mammographic follow-up shows regression of the rope-like structure, with return to a narrower, smoother vascular appearance¹⁴. On follow-up with color Doppler imaging, spontaneous reappearance of venous flow in the veins is expected¹⁷. A firm, subcutaneous string may persist for as long as a year. If resolution does not proceed as expected, malignancy should be ruled out¹³.

Ultrasonographic and mammographic evaluation and clinical correlation will suggest the diagnosis of Mondor's disease and obviate biopsy.

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