

CASE REPORT

Mondor's disease after extensive training with Nordic walking

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Abstract

We here present a case of a 59-year-old man with Mondor's disease, thrombophlebitis of the superficial veins of the anterior chest wall. This occurred after the patient had initiated extensive training with walking poles, Nordic walking, probably predisposing to the thrombosis. Underlying disease was ruled out, and the treatment was symptomatic. Physicians should be aware of this condition in patients performing extensive upper body workout.

INTRODUCTION

Thrombophlebitis of the superficial veins of the anterior chest wall is a rare condition, commonly named Mondor's disease (MD) after the French surgeon Henri Mondor's description in 1939. The course is considered benign and self-limiting [1]. We here present a case of a 59-year-old man, presenting with MD after extensive physical training with Nordic walking.

CASE REPORT

The patient is a 59-year-old man with previously known hypertension.

He presented with a 4-day history of a painful palpable cord along what was perceived to be the left lateral thoracoepigastric vein (Fig. 1). He had noted a discomfort in the left chest wall for some weeks and had no constitutional symptoms.

The clinical examination revealed the above-mentioned cord and slight subcutaneous swellings lateral to the left nipple and

periumbilical on the same side. Further clinical examination was normal, including skin and lymph node examination. The biochemistry is summarized in Table 1.

A clinical diagnosis of MD was made. There were no signs of systemic inflammation with regards to e.g. vasculitis, such as giant cell arteritis, local infection or superficial lymphangitis. There was no eruption, redness or pruritus with regards to skin disease or insect bites. A computed tomography (CT) scan of the thorax, abdomen and pelvis was performed, without signs of cancer or local lymphadenopathy. Performing an ultrasound to certify the diagnosis of thrombophlebitis was discussed, but left out as it was not considered to be of clinical use and there were no suspicious palpable findings in the breast. The clinical examination did not reveal any signs of general thromboembolism, neither did the CT scan.

A more thorough medical history revealed that the patient and his wife had started quite intensive training with Nordic walking (rapid walking using walking poles) 3 months earlier. From no regular thoracic exercise, they now did 3 to 4 days a week with 1-hour rapid walking. The use of walking poles is

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Figure 1: Palpable and visible cord on the left chest and abdominal wall.

Table 1: Mondor's disease

Biochemistry at presentation	
Hemoglobin	14,9 g/dl
Leukocytes	$6,2 \times 10^9/L$
Thrombocytes	$254 \times 10^9/L$
C-reactive protein	1 mg/L
Sedimentation rate	4 mm/hr

known to increase the use of upper extremity and chest muscles [2]. The association in time between the start of the training and the symptoms in the chest wall suggested they could be related. Consulting case reports about MD [3, 4], the patient was only given non-steroidal anti-inflammatory drugs (NSAIDs) for symptomatic relief. The cord resolved over a period of 4 months, with the walking poles put to rest.

DISCUSSION

MD is well known in surgical departments as a complication after breast surgery or other biopsies in the chest wall [5, 6], although being rare with an incidence ratio reported to be under 1% [1]. It is likely due to local trauma of the wall of the vein. Extensive training, like other local trauma, is thought to give compression to the vein, which then leads to thrombosis as the valves of the veins fail. The process of thrombosis, inflammation and scarring then leads to the palpable painful cord [1].

Several case reports note an association between physical activity and higher risk of venous thromboembolism, likely due to repetitive injury [7, 8]. This is reported particularly for distal vein thrombosis (DVT) [8, 9]. Virchow's triad of risk factors is still highly relevant, as extensive training affects both coagulability, vessel walls and blood flow. Inflammatory responses then leading to platelet hyperreactivity, fibrinogenesis and enhanced aggregability has been better examined for cardiovascular disease. There is evidence for a transient pro-inflammatory state after acute intense exercise, with addition of higher micro-damage of skeletal muscle [10]. Many of the

same pro-inflammatory responses will contribute in venous thromboembolism [11]. Most case reports highlight the fact that there has been a new exercise or a marked increase in an existing physical activity close up to the appearance of an exercise-induced superficial or distal thromboembolism. For MD this includes upper-body gym work, carrying a heavy backpack or heavy lifting. A case report of superficial thrombophlebitis after playing squash has also been reported [1, 12]. Superficial thrombophlebitis might be diagnosed clinically, although an ultrasound scan with color doppler is often performed to properly confirm the diagnosis [1].

There is no consensus on the treatment of MD. Treatment of an underlying disease is warranted if present. Spontaneous remission is described as most common. In cases of pain or local inflammation NSAIDs are frequently recommended. Anti-coagulation, e.g. fondaparinux as proven effective in superficial thrombosis of the leg, is not of proven utility for MD but has been used in the acute phase [1, 7, 13]. With regards to returning to training, in DVTs, 1 month rest and full anticoagulation is proposed [8, 9]. The same 1 month of rest and gradual return should probably be recommended also in MD, given improved clinical status.

A basic screening of underlying disease is considered appropriate [13], although the frequency of reported underlying systemic disease is rare. In a recent Japanese overview article, only 5% of patients had underlying malignancy, and as much as 22% a traumatic etiology [1]. In this case, no evidence of underlying systemic disease was found. Also, no antiphospholipid antibodies, or known prothrombotic mutations or deficiencies were identified.

CONCLUSION

The medical history is important, and new strenuous physical activities should be taken into account while evaluating superficial thromboembolism. Treatment should be symptomatic and brief omission of the activity resulting in MD.

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None.

CONFLICT OF INTEREST STATEMENT

None declared.

ETHICAL APPROVAL

No approval is required.

CONSENT

The patient gave written consent for publication of this case report.

GUARANTOR

Håkon Reikvam.

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