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CASE REPORT

Exercise-Induced Mondor's Disease of the Chest Wall in a Nigerian Man: A Case Report

Maladie de Mondor de la Paroi Thoracique Induite par l'Exercice chez un Homme Nigérian: à Propos d'un Cas

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ABSTRACT

BACKGROUND: Mondor's disease (MD) is a rare cause of chest pain, characterized by thrombophlebitis of the subcutaneous veins of the anterolateral thoracoabdominal wall. It is a benign, self-limiting condition that is often under-diagnosed due to lack of knowledge of the condition. Although the exact aetiology is unclear, several predisposing factors, including excessive physical activity have been postulated. To the best of our knowledge, there is no previous published report of MD of the chest wall in an adult Nigerian man.

OBJECTIVE: To describe the association between muscular strain and the development of MD.

CASE PRESENTATION: A 40-year-old Nigerian man presented with a one-month history of dull, aching right-sided chest pain. He gave a history of engaging in intense thoracoabdominal exercises for 6 weeks prior to onset of symptoms. Physical examination revealed a tender, subcutaneous cord-like swelling extending from below the right anterior axillary fold to the right hypochondrium and accentuated by overhead abduction of the right arm. Ultrasonography revealed a hypoechoic, non-compressible right thoracoepigastric vein with no flow on Doppler interrogation, in keeping with superficial venous thrombosis. He was treated with nonsteroidal anti-inflammatory agents and paracetamol. The pain and lesion resolved completely within two weeks after presentation and there was no recurrence over the subsequent four months of follow-up.

CONCLUSION: MD is an uncommon cause of chest pain that is often underdiagnosed and underreported due to lack of awareness. It can suddenly appear in persons performing extreme thoracoabdominal exercises. Treatment is essentially symptomatic. Prompt diagnosis of this self-limiting condition is essential in distinguishing it from malignant diseases. **WAJM 2022; 39(4): 425–4 2 8 .**

Keywords: Mondor's disease, exercise, chest pain, thrombophlebitis.

RÉSUMÉ

CONTEXTE: La maladie de Mondor (MD) est une cause rare de douleur thoracique, caractérisée par une thrombophlébite des veines sous-cutanées de la paroi thoraco-abdominale antérolatérale. Il s'agit d'une maladie bénigne et spontanément résolutive qui est souvent sous-diagnostiquée en raison d'un manque de connaissance de la maladie. Bien que l'étiologie exacte ne soit pas claire, plusieurs facteurs prédisposants, y compris une activité physique excessive, ont été postulés. Au meilleur de notre connaissance, il n'y a aucun rapport publié précédemment de MD de la paroi thoracique chez un homme Nigérian adulte.

OBJECTIF: Décrire l'association entre la tension musculaire et le développement de la MD.

PRÉSENTATION DE CAS: Un homme Nigérian de 40 ans s'est présenté avec une histoire d'un mois de douleur thoracique sourde et douloureuse du côté droit. Il a indiqué qu'il s'était engagé dans des exercices thoraco-abdominaux intenses pendant 6 semaines avant l'apparition des symptômes. L'examen physique a révélé une tuméfaction sous-cutanée semblable à un cordon s'étendant du dessous du pli axillaire antérieur droit à l'hypochondre droit et accentuée par une abduction au-dessus du bras droit. L'échographie a révélé une veine thoraco-épigastrique droite hypoéchogène, non compressible et sans débit à l'examen Doppler, en rapport avec une thrombose veineuse superficielle. Il a été traité avec des anti-inflammatoires non stéroïdiens et du paracétamol. La douleur et la lésion ont complètement disparu dans les deux semaines suivant la présentation et il n'y a eu aucune récidive au cours des quatre mois suivants de suivi.

CONCLUSION: La MD est une cause rare de douleur thoracique qui est souvent sous-diagnostiquée et sous-déclarée en raison d'un manque de sensibilisation. Il peut apparaître soudainement chez les personnes effectuant des exercices thoraco-abdominaux extrêmes. Le traitement est essentiellement symptomatique. Un diagnostic rapide de cette maladie spontanément résolutive est essentiel pour la distinguer des maladies malignes. **WAJM 2022; 39(4): 425–4 2 8 .**

Mots clés: maladie de Mondor, exercice, douleur thoracique, thrombophlébite.

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INTRODUCTION

Mondor's disease (MD) is a rare cause of chest pain, characterized by thrombophlebitis of the subcutaneous veins of the anterolateral thoracoabdominal wall.[1] This condition typically presents with the sudden development of a subcutaneous cord-like lesion which is initially red and tender and subsequently becomes a painless fibrous band that is accompanied by a sensation of tension and skin traction. It is three times commoner in females than males.[1–3]

The exact aetiology remains unclear.[4] Several predisposing factors include: trauma, strenuous physical activity, blood dyscrasias, infections, rheumatoid arthritis, abusive use of intravenous drugs, tight clothes, use of oral contraceptives and breast cancer.[3–7] Diagnosis of MD is often made clinically. Demonstration of superficial thrombophlebitis through ultrasonography further confirms the diagnosis. Only symptomatic treatment is required.[1-4] MD is a benign, self-limiting condition that is rarely associated with cancer. To the best of our knowledge, there is no previous published report of MD of the chest wall in an adult Nigerian man.

Case Presentation

A 40-year-old Nigerian man presented at the outpatient department of our hospital in Enugu, south-eastern Nigeria, with a one-month history of dull, aching right-sided chest pain associated with the sudden appearance of a palpable cord-like lesion. There was no history of fever or nipple discharge.

He gave a history of engaging in strenuous exercises- extreme yoga postures- involving the muscles of the thoracoabdominal wall, for a period of 6 weeks prior to onset of symptoms. He discontinued the exercise routine because of the chest pain and had used oral paracetamol which offered temporary pain relief. He admitted that he had presented at other hospitals to identify the cause of the chest pain without success, prior to presentation at our centre.

Past medical history was unremarkable, apart from the fact that he had an appendectomy when he was 26 years old and that he occasionally used oral antacids on account of dyspepsia.

Physical examination revealed a tender area on the right anterolateral aspect of his chest and abdomen with a vertical subcutaneous cord-like swelling extending from below the right anterior axillary fold to the right hypochondrium measuring 20 cm in length and 0.3 cm in width on gross examination. Overhead abduction of the right arm accentuated the appearance of the cord (Figure 1). No other abnormality was detected on examination of his chest and there was no regional lymphadenopathy. The clinical examination of other systems was unremarkable and the vital signs were essentially normal.

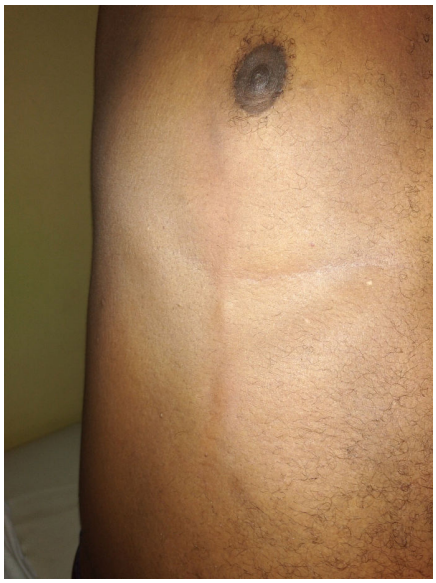

Fig. 1: Palpable Cordlike Structure on the Anterolateral Thoracoabdominal Wall (Right Thoracoepigastric Vein) Made Prominent by Overhead Abduction of the Right Arm.

Ultrasonography revealed a hypoechoic, non-compressible tubular structure (right thoracoepigastric vein) with absence of flow on Doppler interrogation. Full blood count, C-reactive protein, erythrocyte sedimentation rate, renal and liver function tests performed to rule out other inflammatory or infective causes such as mastitis were within normal limits. International normalised ratio (INR) was 1.1.

A diagnosis of superficial thrombophlebitis of a vein of the anterolateral thoracoabdominal wall – Mondor's disease – was made.

Treatment included administration of oral paracetamol and oral celecoxib tablets in addition to topical diclofenac ointment. The pain and lesion resolved completely within two weeks after presentation and there was no recurrence over the subsequent four months of follow-up.

DISCUSSION

Mondor's disease, as originally defined by Henri Mondor in 1939, is a rare condition characterised by thrombophlebitis of the superficial veins of the anterior chest wall.[2] It is a benign, self-limiting clinical condition that is often underdiagnosed due to lack of awareness. Lateral thoracic, thoracoepigastric and superior epigastric veins are the most commonly affected veins.[1,3] In our patient, the right thoracoepigastric vein was the culprit.

MD affects females three times more often than males with no known racial or ethnic predilection. Most of the patients fall within the age range of 30 to 60 years; however, there are few reports of MD occurring in the paediatric age group.[1–3,8,9] In 2014, MD of the thoracoabdominal wall was reported in a 4-year-old male sickle-cell disease patient with severe acute malnutrition in Nairobi, East Africa.[9]

Most cases of MD are idiopathic. However, physical or surgical trauma, strenuous physical activity, blood dyscrasias, infections, rheumatoid arthritis, tight clothes, use of oral contraceptives and breast cancer have been implicated in the aetiology of the condition.[3–7] MD has been reported in a 54-year-old man following body-building with thoracoabdominal training.[10] MD has also been reported in a 52-year-old rural Tanzanian farmer who engaged in intense hoe-farming.[11] Our patient was a 40-year old male who had a history of engaging in intense thoracoabdominal exercises for 6 weeks prior to onset of symptoms.

The hallmark of MD is the appearance of a cord-like thrombosed superficial vein which is initially red and

tender, and later becomes a hard fibrous band which may persist for several weeks after the disease has subsided. Four histopathologic stages have been identified. The first stage is characterised by thrombus formation. The second stage involves thrombus organisation. Recanalization occurs in the third stage and proceeds until the final (fourth) stage characterised by the establishment of the recanalized vein with thickened fibrous wall.[2,3]

Although the exact pathophysiology of MD is unclear, it is thought that direct trauma, pressure on the vein with consequent stagnation of blood; and stretching and relaxing of the superficial veins are the underlying processes in the development of MD.[1,12]

MD can be diagnosed through history and physical examination. Coagulation tests help in excluding hypercoagulability states such as deficiency of protein C, protein S and antithrombin III. Ultrasonography is useful in demonstration of thrombophlebitis and to exclude the presence of any underlying mass compressing the vein.[1,3–7] In females with suspicious findings on breast examination, mammography is indicated to rule out underlying malignancy.[5,13] In our patient, the INR was 1.1 and he had a normal platelet count. Ultrasonography revealed a hypoechoic, non-compressible right thoracoepigastric vein with absence of flow on Doppler studies in keeping with the classical sonographic findings in MD.[14]

MD is typically unilateral, although a few cases of bilateral MD have been reported in world literature, mainly from some high-income countries in North America (United States of America), Europe (United Kingdom, Germany, Italy, Spain and the Netherlands) and Asia (South Korea).[2,12,15–22] Furthermore, bilateral MD has been reported in a 44-year-old Caucasian man, residing in Kinshasa (Democratic Republic of the Congo, a low-income country) in Central Africa following chikungunya virus infection.[23,24] Superficial thrombophlebitis of the penis- penile Mondor's disease- has also been described in detail in literature.[4–6,25] MD can also occur in the groin, antecubital fossa, arm and axilla (where it is referred to as axillary web syndrome).[4–8]

There are few reports of MD in West African literature. In a self-referral breast clinic in Ghana, Mondor's disease was diagnosed in only 7 (0.9%) out of the 748 patients that were seen over a four-year period.[26] MD of the breast has been reported in a 41-year-old premenopausal Nigerian woman who presented with a four- day history of a band-like structure in the right breast associated with pain. Her ultrasound findings were similar to that of our patient. Mammogram revealed a superficial tubular density in the lower inner quadrant of the right breast which was assessed as BIRADS (Breast Imaging Reporting and Data System) category 3.[14] MD of the right breast has also been reported in a 60-year-old Nigerian woman previously treated for invasive ductal carcinoma in the contralateral breast.[13] We are not aware of any previous report of MD of the chest wall in a Nigerian man.

Treatment is essentially symptomatic. Many clinicians recommend hot or warm compresses for analgesia.[1–3,6,10,12,17,27] However, some clinicians have used cold compresses instead and achieved similar analgesic effects.[19] The use of anticoagulants is controversial.[5,7] Prophylactic antibiotics are unnecessary.[2,3] Nonsteroidal anti-inflammatory agents have been proven to be beneficial in relief of symptoms. In a retrospective database analysis of the management results of 172 female patients who were treated for MD over a 10-year period (in Medina, Saudi Arabia) with either topical diclofenac sodium patch or oral diclofenac sodium tablets, it was discovered that the former was more effective in subsiding the inflammation, relieving pain and accelerating the healing process.[28]

The natural course of MD is approximately 2 weeks to 6 months.[2] Our patient had a one month history of symptomatic MD at presentation. The pain and cord-like band disappeared two weeks after commencement of anti-inflammatory agents and there was no recurrence after four months of follow-up.

CONCLUSION

MD is a rare cause of chest pain that is often underdiagnosed and underreported due to lack of awareness. It can suddenly appear in persons performing extreme thoracoabdominal exercises. Diagnosis of MD is often made clinically. Ultrasonography is useful in confirming diagnosis. Treatment is essentially symptomatic. Prompt diagnosis of this benign, self-limiting condition is essential in distinguishing it from malignant diseases.

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Conflict of Interest

None.

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None

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