Aesth Plast Surg (2019) 43:927–929
https://doi.org/10.1007/s00266-019-01331-7

Trauma on a Recently Augmented Breast as a Trigger for Mondor's Disease

Yordan P. Yordanov[1]

Received: 15 January 2019 / Accepted: 7 February 2019 / Published online: 19 February 2019
© Springer Science+Business Media, LLC, part of Springer Nature and International Society of Aesthetic Plastic Surgery 2019

Abstract Mondor's disease is the eponym used to describe a self-limited phlebitis or thrombophlebitis of the superficial veins localized mainly on the thoracoabdominal area of the human body. Its clinical manifestation includes painful superficial cords causing skin retraction. This medical condition could be idiopathic, iatrogenic or a manifestation of underlying pathology such as breast cancer and seems to be more common than has been previously thought. The vast majority of the clinical studies and case reports to date focus on Mondor's disease as a disorder which is more or less directly related to a previous surgical intervention. In this case report, the author discusses the possible role of breast surgery as a predisposing factor only and the trauma on the operated breast as a trigger for onset and earlier manifestation of Mondor's disease. A special emphasis is put on the importance of trauma prevention in breast augmentation surgery, especially when maneuvers like postoperative massages are considered.
Level of Evidence V This journal requires that authors assign a level of evidence to each article. For a full description of these Evidence-Based Medicine ratings, please refer to the Table of Contents or the online Instructions to Authors www.springer.com/00266.

Keywords Mondor' disease · Thrombophlebitis · Breast surgery · Augmentation mammaplasty

Introduction

Mondor's disease is a rare benign disease which typically manifests as a painful, firm cord extending from the submammary area to the inguinal region. This condition was first described in 1870 by Charles Fagge in "Guy's Hospital Reports" [1]. In 1939, Henri Mondor reported the first clinical series of patients [2] and consequently the disorder became known as Mondor's disease. As a medical entity, it represents a self-limited thrombophlebitis of the superficial veins that resolves in 2 to 8 weeks without any specific treatment [3–5]. The most commonly affected veins are those of the anterior or lateral wall of the chest and abdomen namely lateral thoracic, thoracoepigastric or superior epigastric veins [3, 6, 7] although affection of other areas of the human body has been also described [3, 8, 9]. The pathophysiology involves injury to the superficial veins which prevents the retrograde flow and consequently leads to inflammation, thrombosis and eventually fibrosis. Surgery on the breast is one of the most common etiology reasons for developing this condition [4, 5].

This case report is intended to discuss the role of trauma on the operated breast and its possible significance for an earlier onset and clinical manifestation of Mondor's disease.

Case Report

A 26-year-old healthy female, who had presented with hypomastia, underwent breast augmentation through a submammary incision with round smooth silicone gel breast implants. The implants were placed in the

✉ Yordan P. Yordanov
yordanov_vma@abv.bg

[1] Adella Aesthetic, 15G, Tintyava Str., 1172 Sofia, Bulgaria

retropectoral position behind the pectoralis major muscle. The postoperative course was entirely uneventful until the 9th postoperative day, when her 3-year-old nephew hit her left breast trying to give her a hug. Two days later, she started complaining of a mild burning and pulling pain in the left anterolateral thoracic region which worsened during abduction of the ipsilateral shoulder. On the day after, she noted the appearance of curvilinear cord-like lesions extending vertically from the incision in the submammary fold of the left breast to the umbilicus. No other symptoms were reported. The patient denied any previous use of drugs or other pathologies; any massages on the breast were not executed. She had normal body weight (body mass index of 20.8 kg/m^2), was a non-smoker and had no previous history of thromboembolic disease.

The physical examination revealed the presence of four subcutaneously running and adherent to the skin curvilinear cords in the anterolateral chest wall extending down onto the periumbilical area (Fig. 1). They were slightly painful when touched and corresponded to the topography of drainage of the left thoracoepigastric vein and its branches. The breasts were symmetrical, and the nipple–areola complex was normal for that early postoperative period. The general condition of the patient was unaffected. Laboratory tests including hemogram, erythrocyte sedimentation rate, liver function tests, D-dimer, C-reactive protein, autoantibody screening, blood clotting levels and thrombophilia screening test were performed to rule out other pathologies, and the results were within the normal laboratory values. Breast and axillary ultrasound evidenced thrombophlebitis of the left thoracoepigastric vein with no other pathological findings. The physical and instrumental findings were consistent with Mondor's thrombophlebitis.

The patient underwent a conservative treatment, including NSAIDs, support of the breast with sports brassiere with light compression and rest of the ipsilateral arm. She demonstrated a good response to the therapeutic measures, and fast regression of the symptoms was registered in 4 days. Within the next 5 weeks, the lesions disappeared and the condition completely resolved.

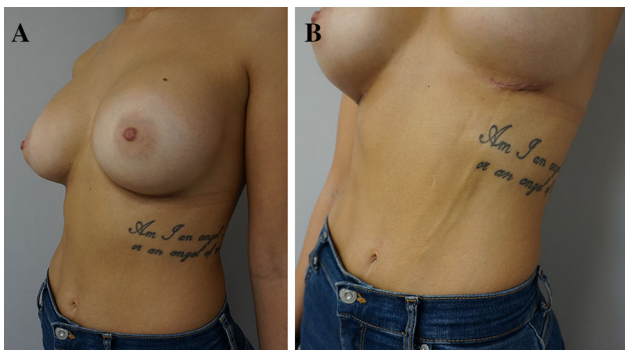

Fig. 1 **a** A 26-year-old woman 9 days after breast augmentation through submammary incision. At rest, nearly no changes are visible on the skin surface. **b** Curvilinear cords with skin retraction in the anterolateral chest wall become visible when the arm is abducted

Discussion

Mondor's disease may be idiopathic or a manifestation of underlying pathology such as breast cancer. It has also been shown to occur after breast surgery, including aesthetic augmentation mammaplasty [4, 5, 10]. The symptomatic incidence of Mondor's disease after aesthetic breast enlargement has been reported to be as low as 1.07% when a submammary incision was used according to the findings of Khan [11, 12]. Even the etiology remains an object of speculation, this condition has been associated more often with local trauma. The interesting issue of the present case is the combination of breast augmentation surgery and accidental trauma on the left breast in the early postoperative period. According to the majority of the clinical reports of Mondor's disease after augmentation mammaplasty with no further traumas on the breast, the overall timing of presentation ranged from at least 2 weeks to 6 months or even years after the surgery [5, 6, 13–15]. At the same time, none of the studies or any clinical case reports have stressed on the traumatism on the recently operated breast which is the issue in the present clinical case report. Having in mind the scientific data and the clinical course of this patient, it could be speculated that the trauma on a recently operated breast provokes much easier or accelerate the onset of the Mondor's disease. From the other hand, the additive effect of the two traumatic factors could be the reason for earlier manifestation of the condition in this patient. To date, there is no clinical study discussing broadly the cumulative effect of traumas on the breast and its possible role for development of thrombophlebitis of the superficial veins. However, it has been already stated that Mondor's disease seems to be more common than has been thought before [12]. Considering that and the fact that breast augmentation continues to be the world's most popular cosmetic procedure [16], discussion of intra- and postoperative trauma prevention is of paramount importance for obtaining good outcomes and happy patients. Keeping in mind the possible cumulative role of the additional trauma on an operated breast, maneuvers like surgical bras with too high compression or aggressive massages on the operated breast which some surgeons still prescribe in the daily practice in more or less empirical setting should be reconsidered very carefully. This case report is a practical illustration on how important trauma prevention in breast augmentation surgery is.

Conclusion

Mondor's disease can be a source of significant patient distress and anxiety. Plastic surgeons should be familiar with this disorder and with the factors that could provoke or accelerate its onset like secondary trauma on an already operated breast.

Compliance with Ethical Standards

Conflict of interest The author declares that they have no conflict of interest.

Human and Animal Rights This article does not contain any studies with human participants or animals performed by the author.

Informed Consent For this type of study, informed consent is not required. The patient has given written informed consent for publication of her pictures.

References

1. Fagge C (1869) Remarks on certain cutaneous affections. Guy's Hosp Rep 15:295–364
2. Mondor H (1939) Tronculite sous-cutanée subaiguë de la paroi thoracigue antéro-latérale Mem Acad Chir 65:1271–1278
3. Amano M, Shimizu T (2018) Mondor's disease: a review of the literature. Intern Med 57(18):2607–2612
4. Loos B, Horch RE (2006) Mondor's disease after breast reduction surgery. Plast Reconstr Surg 117(7):129e–132e
5. Coscia J, Lance S, Wong M et al (2012) Mondor's thrombophlebitis 13 years after breast augmentation. Ann Plast Surg 68(4):336–337
6. Viana GA, Okano FM (2008) Superficial thrombophlebitis (Mondor's Disease) after breast augmentation surgery. Indian J Plast Surg 41(2):219–221
7. Kikano GE, Caceres VM, Sebas JA (1991) Superficial thrombohlebitis of the anterior chest (Mondor's disease). J Fam Pract 33(6):643–644
8. Arora R, Sonthalia S, Gera T (2015) Atypical penile Mondor's disease - involvement of the circumflex vein. Int J STD AIDS 26(5):360–363
9. Zidani H, Foughali M, Laroche JP (2010) Superficial venous thrombosis of the penis: penile Mondor's disease? A case report and literature review. J Mal Vasc 35(6):352–354
10. Catania S, Zurrida S, Veronesi P et al (1992) Mondor's disease and breast cancer. Cancer 69(9):2267–2270
11. Khan UD (2008) Incidence of Mondor's disease in breast augmentation: a retrospective study of 2052 breasts using inframammary incision. Plast Reconstr Surg 122(2):88e–89e
12. Khan U-D (2009) A case report and review of the literature. Aesth Surg J 29(3):209–212
13. Fischl RA, Kahn S, Simon BE (1975) Mondor's disease: an unusual complication of mammaplasty. Plast Reconstr Surg 56(3):319–322
14. Elsahy NI (1983) Recurrent Mondor's disease after augmentation mammaplasty. Aesth Plast Surg 7(4):259–260
15. Niechajev I (2013) Mondor's subcutaneous banding after transaxillary breast augmentation: case report and the review of literature. Aesthetic Plast Surg 37(4):767–769
16. ISAPS Global Statistics https://www.isaps.org/wp-content/uploads/2018/10/2017-Global-Survey-Press-Release-Demand-for-Cosmetic-Surgery-Procedures-Around-The-World-Continues-To-Skyrocket_2_RW.pdf

Publisher's Note Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.