Topical Diclofenac Therapy for Mondor's Disease of the Breast

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Abstract

Background: Mondor's disease means superficial thrombophlibitis of the chest wall in human, treatment is entirely symptomatic. Hot, wet dressing and anodynes may be used for pain relief.

Objective: To evaluate the role of systemic and transdermal action of diclofenac (olfen) with respect to the symptom and sign (pain, erythema along the superficial vein), and the use of Doppler ultrasonography which is a colored ultrasound used for assessment of flow of blood in vessels.

Method: The study was performed on 12 cases with Mondor's disease in middle age female patients with the involvement of lnframammary veins in all of the them (commonly affected), 4 cases had reassurance only, 4 cases had reassurance with systemic diclofenac, and the other 4 cases had reassurance with topical olfen patch.

Results: Olfen patch exerts a strong and rapid action in topical olfen cases, regarding it is role in subsiding the inflammatory process of the veins and so relieving pain with fastening the healing rate as minimum as possible (1 week), thereby abolishing the role of surgery in resistant cases.

Conclusion: Olfen patches play a major role in treating cases with mondor's disease by reducing inflammatory process through its transdermal migration action of diclofenac and within a short time by achieving a high local concentration.

Keywords: Olfen patch, thrombophlebitis, breast, mondor's, Doppler ultrasound

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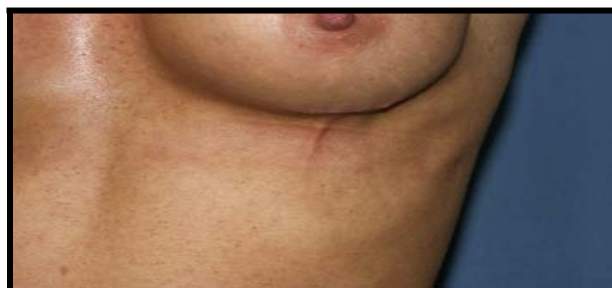
Introduction

Mondor's disease refer usually to superficial thrombophlebitis of the anterolateral chest wall, it is an uncommon condition. It was first reported by Flagge in 1869 but received wider attention in 1939 through the French surgeon Henri Mondor, who reviewed several cases. It has been commonly referred to as Mondor's disease at that time. It occur more frequently in women, although it can occur in men (3:1 ratio) the exact cause is unclear, but Mondor's disease is often associated with recent local trauma, muscular strain, or breast surgery (excional biopsy for breast masses to exclude malignancy),[1,2,3] and even in drug abuse,[7] or following sonography guided core biopsy,[10] and sometimes associated with breast augmentation surgery.[14] It is not associated with underlying cancer, most of these cases occur in nullipara and non-lactating women.[1]

Figure 1: 45years old women had a cord like structure underneath the breast.[1]



Some cases might have a crescent-shaped ecchymoses (human bite) inferior to her nipple without associated redness, tenderness, or edema. Palpation of the anterolateral chest area revealed a thickening that is tender, stretching the skin distally over the abdominal wall revealed a subcutaneous cordlike lesion that measured approximately 10 cm in length mostly affecting lnframammary veins as seen in figure1.[1] The diagnosis of our cases made in breast clinics at Al-karkh hospital . On

physical examination, the patients found to be afebrile and their vital signs within normal limits, results of laboratory tests obtained at each visit were a normal white blood count, hemoglobin, platelet count and erythrocyte sedimentation rate .

Olfen patch used containing a tissue with 14gm of diclofenac gel which is a phenyl acetic acid derivative with anti-inflammatory and analgesic prosperities, which belongs to the group of non-steroidal anti-inflammatory drugs, studies have shown that, when applied topically, diclofenac pass through the skin into the underlying tissue, and attenuates acute and chronic inflammatory reactions,[6,16]with topical application of olfen patch the active substance is absorbed through the skin. The plasma concentrations of diclofenac in steady state are characterized by a common uptake of diclofenac from the patch, irrespective of whether the patch applied in the morning or evening without causing any gastrointestinal problems.[6] The metabolism of diclofenac after topical application is equivalent to those observed after oral administration.[4,5] It can be used in cases with known hypersensitivity to aspirin and other non-steroidal anti-inflammatory drugs using tiny cut from the olfen patch involving the vein only and avoid overexposure to the patch in such cases, but contraindicated in patients with (intrinsic) asthma or chronic articaria, lactating women since it can cross to the milk and pregnant women especially in 3rd trimester on account of possible premature closure of ductus arteriosus with inhibition oflabour.[4,5,6,16,17]

Doppler ultrasonography used to asses patency of the affected veins according to the usual pathway for inflammatory process (inflammation – thrombosis – fibrosis - recanalization) which usually take 1-2 months.[1,2,3]Our study will confirm the efficacy, safety and tolerability of topically administered olfen patch with reassurance in respect to the symptom and sign (pain, erythema along the superficial vein).

Method:

Twelve cases used in this study were done at breast clinic in Al-karkh hospital, all of them were females with age ranging from 18-45 years from 2009 to 2010, they all had mammogram and ultrasonography of both breasts to exclude any abnormal findings within the breast, Doppler ultrasonography done for the affected breast (involved vein-inframammary veins), with the other routine laboratory tests (white blood count, hemoglobin, platelet count and erythrocyte sedimentation rate) to exclude any other abnormal diseases within the breast. Diagnosis based on physical examination of the cases with respect to the symptom and sign (pain, erythema along the affected vein). Four cases had reassurance only, 4 cases received oral olfen capsules 100mg once daily for 3 weeks with reassurance, and the other 4 cases had olfen patches with reassurance. The patch left in place for 2-8 hours twice daily (in the morning and evening) for one week, we depend mainly on asking the patient to contact us as soon as pain relief following patch application.

Results:

Table: 1 reveals the changes happened in our practice with the patients according to parameters (pain, erythema, Doppler ultrasound study and the role for surgery) corresponding to modality of treatment applied for a period of the first 3 weeks of illness, which is critical period for healing process as follows:

Reassurance cases: symptom and sign continued for 3 weeks, with mild improvement of pain and erthyma in third week, complete healing occurred in 6 weeks except two cases had surgery (ligation of the vein).

Systemic olfen cases: pain subsided after one weeks, erythema decrease in size after 2 weeks, and disappear after 3 weeks, Doppler ultrasound reveals dilated vein even in third week, since it had been shown to take more time to heal (4 weeks), surgery not done, with some of them developed upper gastrointestinal upset, others sever abdominal discomforts.

Topical olfen cases: marked improvement in sign and symptom seen after one week following application of olfen patch with no pain during first week and erythema which usually decrease in size in first week and disappeared in second week, patients feel dramatic response to such line of management within the first week of

treatment, with cord like structure remain in place in first week, which usually disappears after that in second week by shortening the healing process. We gain the action wanted to overcome the thrombophlebitis of the affected veins and they had the same final results. Doppler ultrasonography revealed fibrosis of the affected vein during second week after olfen patch application in all 4 cases without the need for surgery at all as seen in figure 3. Unfortunately, one case developed mild rash and some sort of hypersensitivity on fifth day, the patch removed quickly with the relief of pain on next day and managing the allergic areas by local steroid ointment.

Table: 1 Changes in improvement of mondor's disease according to the line of management during the first 3 weeks of illness.

CASES	PARAMETERS	K 1ST WEEK	2ND WEEK	3RD WEEK
Reassurance	Pain	No change	No change	Decrease
	Erythema	No change	No change	Decrease
	Doppler ultrasound	Dilated vein	Dilated vein	Dilated vein
	Surgery	Not indicated	Not indicated	Indicated in 2 cases
Systemic olfen + Reassurance	Pain	No change	Decrease	No pain
	Erythema	No change	Decrease	Decrease
	Doppler ultrasound	Dilated vein	Dilated vein	Fibrosis
	Surgery	Not indicated	Not indicated	Not done
Topical olfen + Reassurance	Pain	Decrease	No pain	No pain
	Erythema	Decrease	No erythema	No erythema
	Doppler ultrasound	Dilated vein	No abnormal finding seen	No abnormal finding seen
	Surgery	Not indicated	Not indicated	Not indicated

Discussion

Although Mondor's disease is an uncommon disease and not premalignant, but it become one of the disastrous problem regarding female as there is a fear of breast carcinoma, and seeking advise to do further investigations, most of these cases had previous history of trauma even surgery might be a cause for it (eight of the cases had a previous history of surgery, excional biopsy for multiple masses in the breast, sent to histopathology to reveal fibroadenosis of the breast ,three weeks later they developed a picture of mondor's disease, one of them had a history of an old trauma to chest, others were idiopathic).

These patients present with inflammation or thrombphlebitis of the inframammary veins underneath the breast, usually just below the inframammary crease at first the vein or veins are tender and then they become asymptomatic and ultimately disappear. It should be noted that these cord like structures are more evident when a patient lifts her breast upward or applies traction to the area. In fact, it is not uncommon to notice the visual symptoms of Mondor's disease when we examine a breast surgery patient and realize that the patient has felt nothing and is unaware that she has Mondor'sDisease.[11,12,13,14]

This study found that topical treatment with olfen patch plus reassurance had given the best results for subsiding the thrombophlebitis in topical olfen cases because it can get rapid action by transdermal migration to counteract the disease within short time. The pathological changes occurred within the veins were classified into four stages. First, there is attachment of a thrombus to the venous wall. Second, a mucinous matrix forms with organization of the thrombus. Third, recanalization and formation of a small lumen occurs. The last stage involves recanalization and thickening of the fibrouswall.[7, 8, 9] Our study depend on sign and symptom of the disease with Doppler ultrasonography for further assessment and follow up as seen in figure2 and figure3 below to reveal these changes occurred within the vein.

Figure 1: 45years old women had a cord like structure underneath the breast.[1]

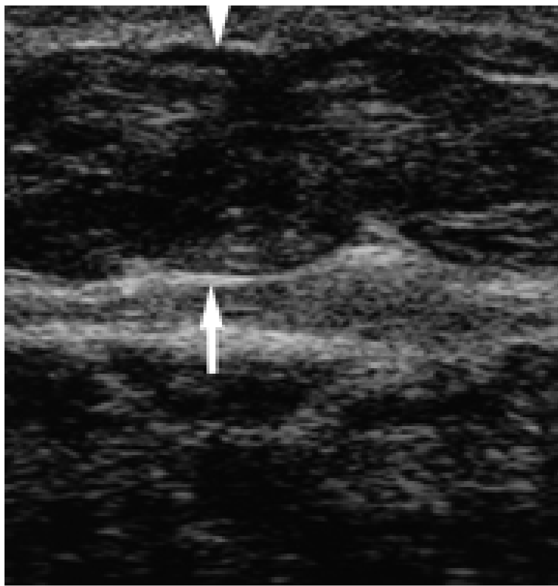
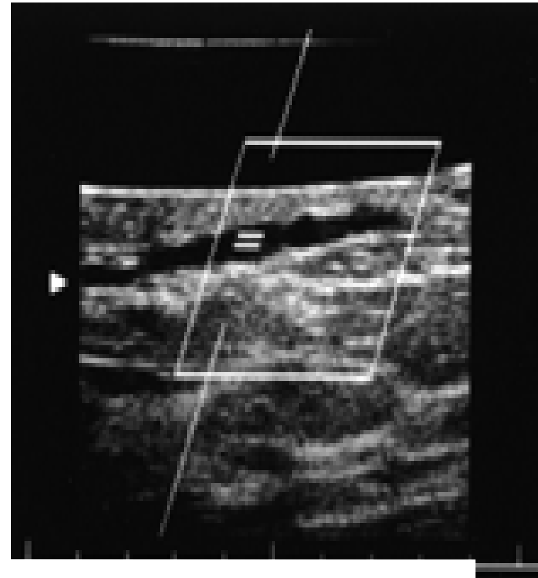


Figure3: reveal fibrosis (Doppler ultrasound).



Hypersensitivity is never a contraindication for olfen patch especially if utilize in small areas and short period of time to achieve good results, even cases known to had upper gastrointestinal problem can use it safely (which is a contraindication in systemic olfen cases). The bioavailability in terms of systemic exposure from the patch compared with oral intake (75 mg/day) is in the order of 1%. Such low diclofenac concentrations are without systemic effects, as demonstrated by the fact that no drug-related gastrointestinal bleeding, ulcers or cutaneous events characteristic of Steven-Johnson syndrome have been reported.[17]

These data shown in table -1 provide support for the notion that diclofenac patch provides pain relief through accumulation of diclofenac under the site of application, without any evidence of systemic effects. Corresponding twice-dose (patch) application /day for one week in topical olfen cases demonstrated that diclofenac first appears in plasma at a mean of 4-5 hours after application (range 2-8 hours). Hence, the patch provided pain relief at a time point at which no diclofenac is assumed to be in plasma, thereby demonstrates local action in terms of tissue diclofenac accumulation under the patch.[15, 16, 17]

Conclusion:

Topical diclofenac therapy seem to be superior in the line of management to reassurance alone or with systemic diclofenac regarding Mondor's disease of the breast, since it achieve the best results for rapid relief and avoid further surgical intervention in resistant cases because most of these cases, although it's a self limited disease, had a mild response to medical line of management and persist for even as long as 6 weeks to get rid of the disease, and recurrence could happen at any time following trauma or surgery.

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