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Overview of Heel Fissure and Their Management

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Abstract: -

Splits or fissures in the skin's surface, known as heel fissures, can occur as a result of xerosis or anhidrosis and may or may not be accompanied by hyperkeratosis. Fissures may become painful when they penetrate deeply into the dermis. The rim of the heel is typically where callus development occurs. The skin is often dry, although it may have a thick callus that causes patches of discoloured skin, particularly along the inside edge of the heel, that are yellow or dark brown in colour. Not only is it a sign of overexposure or inadequate hydration, but it also suggests neglect of proper foot care. This review offers many non-surgical methods, topical adhesives, home cures, and cosmetic treatments for heel fissures. The frequency of foot issues additionally. Numerous skin biophysical characteristics and their corresponding measurements. It is described how the fissure is classified based on the measurement of the xerosis assessment score.

Keywords- Anhidrosis, callus, cracks, dry skin, emollient, heel fissures, hyperkeratosis, moisturizer, xerosis

Introduction: -

Heel fissure conditions can cause discomfort and pain, making them ugly and ultimately worsening the affected person's quality of life. The elderly client additionally, diabetics experience additional peripheral problems. The foot is susceptible to infection and ulceration due to vascular disease. as well as amputation. In older people, callus can have an impact on balance, which raises the possibility of falls. [1]

The fissures are thought of as skin wounds with partial thickness, and they are more likely to become infected. Further progression of the fissure may result in the creation of full-thickness ulcers. leaving an exposed wound that can possibly result in deeper infection and cellulitis, particularly in those suffering from Peripheral vascular disease and diabetes [2]. It is typically linked with hyperkeratosis and anhidrosis and seen in areas of the skin that are stressed, such as the heel border. Pain is one of the patients' primary complaints. pain, blood, and humiliation. Unease can lead to walking and carrying weight challenging, and the humiliation Having deep, rough heel cracks can have a psychological impact on an individual [3].

Fig :- Heel cracks

Redness is another characteristic of xerosis condition. cracks as well as dry scaling. Regarding xerotica skin, the composition of the anomalies in keratinization alters the stratum corneum. surface lipids, pH, sebum, water metabolism, and proliferation. [4]

Cracked heels are referred to as padadari in Ayurveda. These days, it's regarded as one of the main issues with both sexes' cosmetic health. Those who cover large distances are most likely to experience it. regular long walks, frequently without adequate foot care. It has an immediate impact on a person's daily regimen. Heel cracks indicate

a deficiency in neglecting to moisturize or take care of your feet. In terms of medicine, Heel fissures are another name for fractured heels. Cracks are frequent cuts on the epidermis in a linear fashion. Occasionally, it might become uncomfortable and penetrate deeply into the dermis. Overly The feet spread outward as pressure is applied to the foot pads. As the Because the skin on the sides of the feet is dry, it cracks and lead to heels that crack [5].

2. India's Foot Problem Prevalence-

The effectiveness of early therapies for foot problems in people with and without diabetes has not been well-studied in India. not having diabetes. According to this survey, out of 224 participants; 93 (42%) of them were experiencing diabetes. Thirty individuals had foot ulcers. Upon inspection Participants with diabetes reported having problems with their feet. recognized as ulceration risk factors, such as fissures 29 individuals (31%) and 21 participants with corns and/or calluses peripheral arterial disease, which affected 29 individuals (31%) and limb neuropathy in 23 individuals (25%) Out of the 131 patients (58%), 10 had ulceration. These participants did not have diabetes. Upon analysis, the quantity of identified skin lesions, similar to the diabetes group, cracks in 41 (31%), corns and/or calluses in 32 individuals (24%), 12 participants with peripheral arterial disease (9%) and seven individuals (5%) with peripheral neuropathy [6]. One of the most prevalent anomalies is neurosis. Over 40% of cases were found in the diabetic foot. encouraging the formation of cracks and ulceration hyperkeratosis [7].

3. Causes of Heel Fissures: -

To withstand the weight of the body, the thick stratum cornea that makes up heel skin. On the bottoms of the feet, there are numerous ermines sweat glands and very few sebaceous glands. Consequently, the skin's surface loses a lot of water [8]. Poor and illiterate people wear shoes incorrectly. Sociocultural customs like walking barefoot and skipping socks (particularly in women) and the tardiness with which foot lesions manifest have all been discovered to play a role in the development of heel fissures and hyperkeratosis in the Indian population [6]. Prolonged standing (especially on hard surfaces) and wearing open-heeled shoes, which cause the heel to expand and increase pressure, are two of the main reasons.

4. Controlling Heel Cracks-

A. Using cosmetics to avoid heel cracks: -

Preventative maintenance includes the use of moisturizers. emollients containing urea have been demonstrated to greatly raise the hydration, which will consequently directly improve skin elasticity and smoothness [7]. The superficial heel fissures' skin integrity can be enhanced by consistent lowering of hyperkeratosis with catalysts and consistent using an appropriate emollient to moisturise the tissues and the epidermal barrier back in place. Added humectants are components that supplement the occlusive action of emollients and maintain the moisture content of cells by drawing moisture from enters the epidermis from the dermis [2].

Commercially accessible formulations containing α hydroxyl acids (such as lactic acid and glycolic acid), salicylic acid, and urea have been extensively utilized for topical treatments of neurosis. Salicylic acid is a catalyst that softens the corneal stratum. A rise in urea increases the water-binding ability and absorbs water in the stratum cornea [4]. The skin's look becoming parched or cracked have to be controlled by applying moisturizers to repair skin Elasticity and softness [13].

B. Tissue adhesive applied topically: -

The advantages of this modality over the conventional kind of closure were shown by the Cochrane study. The two cyanoacrylates are There might be a use for Octyl-Blend10TM tissue adhesive in the heel fissures well managed [3].

C. Treatment without surgery: -

Heel Protector Made of Soft Medical Silicone Gel product aids in shielding the skin from cracking and peeling. Kakato- tsurutsuru (Kt) socks: Kt socks have the potential to hold perspiration that evaporates and contains naturally moisturizing ingredients elements bolstering the heel stratum's capacity to retain water cornea. These results imply that Kt socks might get better. dry skin on the heels [15].

D. The synthetic medication: -

Timolol stimulates the migration and re-epithelialization of keratinocytes. The lamellar body is affected by β2-antagonist. secretion, repairing the skin's protective layer. comparable mechanism perhaps contributed to the healing of heel fissures [10].

E. Using Herbal Extract to Treat Heel Fissures: -

1) Leaf extract from Centella asiatica-

The perennial herbaceous creeper Centella asiatica Belonging to the family Apiceae (Umbelliferae) and possesses been discussed in great detail in Ayurveda. scholarly papers have confirmed Centella asiatica's use in a number of ailments, such as the healing of wounds. Reports on in vivo studies increased collagen synthesis and cell proliferation at wound areas and faster growth of epithelium. One particular element of Centella. It has been stated that asiatica, or asiaticoside, increases the tensile strength of freshly formed skin surrounding lesions [9].

2.Euphorbia Caducifolia-

In addition to being known to be toxic and irritating to the skin, Euphorbia caducifolia latex is also mentioned for its qualities that are antimicrobial, antifungal, and antibacterial. Formulation likely includes Euphorbia caducifolia latex acquires the Sneha and Ushna Gunas again, which reduce vitiated Vata. hence the heel crack heals [16].

3.The chebula terminalia-

Terminalia chebula, according to Ayurveda, balances the vata, pitta, and kapha humours, the three vitiated humors. It particularly calms the Vata Dosha. Ghee soothes aggravated Vata and Pitta. Thus, haritaki paste aids in calming vitiated Vata. Dosha is advantageous in treating patients with Padadari and lessening the signs and symptoms. The Terminalia chebula fruit exhibit a dose-dependent reducing effect on inflammation in rats. Furthermore the fruit of Terminalia chebula's hydroalcoholic extract encourages considerable healing of wounds in rats with diabetes [17].

4).Vrukshamla beeja taila-

Seed oil, also known as ghee or oil of kum, is used to feet and hands that are broken. It facilitates normalization. Being Ushna vitiated vatadosha [18].

5) Ral (shudha), Teel tail, Jatyadi tail, and Shudha Hingul-

Ral (shudha), Teel tail, Jatyadi tail, Shudha Hingul, & Goghrit could support moisturized, smooth skin, which could lead to appropriate recovery, lessen the symptoms, and produce results in foot crack healing [19].

6) The sesame seeds-

It is an oil extract derived from a plant. It has the ability to permeate bodily tissues and disperse throughout the body. and mends the shoe cracks [20].

F. Heel Fissure Home Remedies: -

1) Coconut oil

This oil has wound-healing, antibacterial, and antiseptic properties. restorative qualities that shield and shield skin from infection caused by bacteria [21]. Mineral oil and coconut oil have similar outcomes. Both exhibit notable progress in skin moisture [22].

2) Almond oil

Heel fissures are associated with a defect in the skin barrier function. Almond oil contains fatty acids, which help in quick healing of heel fissures. It prevents water loss from skin [23].

3) Olive oil

Antioxidants such as vitamin E can be found in abundance in olive oil. It has anti-inflammatory and antioxidant properties. qualities that support dermal repair. Subject-specific Applying oil strengthens the epidermis' barrier and integrity operate [23].

4) Hibiscus

A natural moisturizer is honey. It stops the loss of moisture that comes from the skin. It helped to further soften the skin and repairing damaged and dry skin. Honey has antimicrobial properties and possessing the ability to heal wounds [24].

5) Vera Aloe

Its moisturizing properties are good. Owing to its hydrating properties, it is utilized for treating dry skin. The dietary supplements and Aloe vera has certain minerals. which have strong antioxidants that aid in skin repair. Subject-specific Collagen synthesis is increased when aloe vera gel is applied. This aids in the healing of skin cracks [25].

6) Ground ginger

Turmeric has antibacterial and anti-inflammatory properties. attributes. The castor oil and turmeric powder mixture that was utilized to address fractures [26].

Conclusion: -

These days, taking care of your feet is crucial since it can lead to a number of illnesses. Patients with diabetes may get severe fissures or cracks in their heels, which can harm their epidermis. harm to the dermis It could result in a bacterial infection and to amputation as well as ulceration. The cracks in the heel cause discomfort in the lives and minds of the sick. It is regarded as a cosmetic issues. There are various cosmetic options available. for cracks in the heel. Using moisturizers is quite beneficial. The primary cause of the cracking is the dry skin. Thus, the multiple Cosmetics like emollients and humectants are used to treat the cracks. Socks and non-surgical gel heel protectors are used. Heel fissures can also be effectively treated with the tissue adhesive.

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