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AYURVEDIC REVIEW ARTICLE ON KELOID

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ABSTRACT

Hypertrophic appearing scar tissue formation is known as Keloids. The growth of keloid is as compare to other raised scars is more rapid and progressive. If the keloid is formed then it grow much larger than the wound that caused the scar. Keloid is hypertrophic appearing scar that continue to evolve over the time without quiescent or regressive phase in the process of wound healing The certain communities e.g. Africans having Keloid-prone skin. The cut, burn, pin prick or severe acne are the some examples that causes Keloid. A keloid can also form as chickenpox clear. Sometimes, a surgical scar becomes a keloid. In very rare cases, keloids form when people do not injure their skin. These are called â€œspontaneous keloids. A keloid usually takes time to appear. After an injury, months can pass before this scar appears. A keloid can also form more quickly. Once it begins, a keloid can enlarge slowly for months or years. Ayurveda Vagbhatacharya described it is as Vrunagranthi. This review article is a comparative pathological study of Vrunagranthi with special references to keloid is found that having direct and much more identical Causes, features, pathology and prognostic between these

KEYBOARD: Keloid, vrangranthi, scar, hypertrophy.

INTRODUCTION

Keloids are abnormal, benign, erythematous, fibrous proliferations formed on the skin and usually develop after dermal trauma caused by burns, surgeries, acne, piercings, and tattoos.[1] Healing extends beyond the wound margins surrounding adjacent normal skin.[2] The pathogenesis involves excessive fibroblast proliferation and abnormal collagen production. Wound tension and infectious processes promote hypoxia and increased deposition of extracellular matrix components leading to the formation of thick collagen bundles with a hyaline aspect. Lesions usually occur on the face, ear lobes, trunk, and neck potentially causing functional and cosmetic impairments, which may lower self-esteem and quality of life. The incidence and prevalence of keloids are unknown but affect predominantly young adults. Moreover, the prevalence varies according to race and is higher in Black and Asian populations, but similar between sexes. Keloids have a genetic basis, with an autosomal dominant inheritance of incomplete penetrance and manifest in genetic syndromes.[3] The diagnosis is usually clinical and based on medical histories as well as the shape, size, and growth pattern of lesions. Biopsies may be performed in cases in which diagnoses are uncertain. The most common symptoms are pain and itching. After burn injuries, temperature dysregulation, dry skin, neuropathic pain, and impairment of mechanical function may occur due to destruction of hair follicles, sweat glands, capillaries, and nerve endings.[4] The objective of treatment is to reduce complaints and scar volume and promote functional and cosmetic improvements. Furthermore, the chosen surgical approach needs to include the possible postoperative risk of overhealing.

Ways.[5] Proinflammatory cytokines IL-6 and -8 have been shown to increase scarring, while similarly, a decrease anti-inflammatory IL-10 increases scarring.[6] Keloidal fibroblasts and inflammatory cells may drive keloid formation by dysregulation of normal collagen turnover. Keloids are characterized by an increased ratio of type 1 to type 3 collagen deposition in a haphazard pattern with increased fibroblast proliferation rates and increased sensitivity to growth factors.[6,7] Differences in growth factor production could be due to epithelial-mesenchymal interactions, retention of fetal proliferative pathways, or the hypoxic keloidal tissue environment. Tissue tension has also been implicated as mechanical tension is a driver of fibroblast activity and formation of collagen. Certain inherited human leukocyte antigen subtypes have been associated with keloids, suggesting an abnormal immune response to dermal injury as a cause of keloids. Lastly, dermal injury causing an immune response to sebum, leading to cytokine release stimulating mast cell infiltration and fibroblast activity,

has been suggested given the predilection for keloids to form in sites of increased density of pilosebaceous units.[7]

The remodeling phase is characterized by maturation of collagen i.e. type I collagen replacing type III collagen until a ratio of 4:1 is achieved. There is a realignment of collagen fibres along the lines of tension forming the scar, decreased wound vascularity, and wound contraction due to fibroblast and myofibroblast activity. This maturation of collagen leads to increased tensile strength in the wound which is maximal at the 12th week post injury and represents approximately 80% of the uninjured skin strength. In scarring, the amount of inflammatory cells, endothelial cells and fibroblasts decrease as the healing proceeds. The collagenous matrix becomes more organized into thicker and more cross-linked bundles indicating the development of the mature scar. Scars are histologically characterized by a flattened epidermal-dermal junction and thickened epidermis. The collagen fibres in scars are smaller and show a higher density in packing. Hair follicles and sebaceous glands never regenerate in a scar,

Abnormal scar

A tightly regulated balance between synthesis and degradation of ECM is essential for normal scar formation. If this balance shifts towards increased ECM production or decreased degradation Hypertrophic scars and Keloids may occur. A hypertrophic scar is defined as excessive scar tissue that does not extend beyond the boundary of the original incision or wound. It results from a prolonged inflammatory phase of wound healing and mainly. occurs across the lines of skin tension Hypertrophic scars improve spontaneously with time.

Keloid

Keloid is defined as excessive scar tissue that extends beyond the boundaries of the original incision or wound, It continues to grow. Its etiology is unknown, but it is associated with elevated levels of growth factor, deeply pigmented skin, familial tendency and certain areas of the body, more common in midline over the sternum, shoulder, lower neck in front and ear pinna. Females have a slightly higher incidence rate than males. The histology of Keloid shows excess collagen; especially more type III collagen with hyper vascularity suggesting the pathology occurs in the remodeling phase.

Clinically, Keloids extend beyond the boundaries of the original wound and rarely regress over time. They often arise immediately after skin injury and appear as firm nodules which

are pruritic and painful. Itching is severe when exposed to sweat, dust and other allergens. Initially, they have a pink or red appearance and telangiectasia may be present. Keloids interrupt one's quality of life, for having a feeling of being excluded from full social acceptance.

Cause

Acne scars

Burns

Chickenpox scars

Ear piercing

Scratches

Surgical incision sites

Vaccination sites

Location

Keloids can develop in any area or part of the body where skin trauma has occurred.

They can be the result of pimples, scratching, burns, skin injury, or insect bites.

Keloid scars can develop after surgery.

More common sites, such as the central chest, the back, and shoulders (usually resulting from acne), and the ear lobes (from ear piercings).

They can also occur where body piercings are done. The most common areas are the pelvic region, earlobes, arms, and collar bone.

Pathology

Histologically, they are fibrotic tumors characterized by a collection of atypical fibroblasts with excessive accumulation of extracellular matrix components, especially fibronectin, elastin, collagen, and proteoglycans.

They contain an acellular thick center, abundant collagen bundles that form nodules in the deep dermal area of the lesion. These lesions can cause pain, itching, and physical deformity.

They cannot improve in appearance over time and can limit the mobility of joints. It occurs in both sexes that is the male and females equally, but the incidence in young female patients is higher than in young males.

The frequency of occurrence is fifteen times higher in highly pigmented people.

Sign and symptoms

The symptoms of a keloid can include:

The localized area is flesh, pink, or red in color,

A lumpy or ridged area of skin is usually raised

An area continues to grow larger with scar tissue over time

An itchy patch present on the skin

DISCUSSION

In Ayurveda, rasa has very important role in treatment. The nidana of Vrana granthi include consumption of diets of all the six rasas which has a major role in its pathogenesis. An evaluation can be made relating the karma of each rasa and its effect in the healing of Vrana. Madhura rasa is sandhanakara and brimhana, but it is abhishyandi. Amla rasa causes paka by its agneya quality and also it vitiates rakta and mamsa. Lavana rasa increases potency of toxic materials, either ingested or metabolic end products in addition to vitiation of rakta and mamsa. Katu rasa cause depression of Vrana along with haemolysis and muscle depletion. Tikta rasa is visada, antitoxic, anti-inflammatory and it reduces pus and moisture. Kashaya rasa promotes healing and pacifies rakta. It is clear that apart from tikta rasa and kashaya rasa, other rasas have adverse effect on healing of Vrana. A wise intake of medicine and diet should be planned for proper healing of Vrana. So along with other nidana, simultaneous consumption of all the rasa in an unbalanced quantity hampers the healing process, vata and vitiates rakta in addition to the vitiation of kapha, meda and mamsa; which is general in all varieties of granthi, and produce Vrana granthi. Here the rakta vitiation can be regarded as hyper vascularityand vitiation of and mamsa as collagen excess constituting the pathogenesis of Keloid.

Sushrut define it as vitiated doshas start pathogenesis in mansa, medadhatusalong with kaphaaccumulates there at one site forming circularthick swelling. Vagbhata also reiterate above samprati. Vramgranthi can be co-related with keloid. As per vagbhata varnganthiis not curable condition. Keloid seldom shows tendency to regress spontaneously. In addition to their variable increase in size keloid can become painful or pruritic causing functional defects or especially potential risk of uncontrolled growth and cosmetic nuisance.Any therapeutic regimen has yet to be established for the treatment of keloid. Common treatment includes surgical excision, occlusive dressing, compression therapy, steroidal injection The surgical excision of keloid has proven to be ineffective with high recurrences rate.

CONCLUSION

Keloid is hypertrophic tissues are developed during scar formation. Also Vaghbhatacharya has been described that the same pathology of in the description. of Vrunaghrantht. In this literature review found that, The Causes and pathology as well as the prognosis of disease is same as per modern and Ayurveda.

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