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ORIGINAL ARTICLE

The AIIMS Bhopal Pre-sternal Keloid Scale (ABPSKS): A Method for Evaluating the Incidence of Severity and Evading Comparisons in Treatment Results

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ABSTRACT

Background: There are numerous ways in which pre-sternal keloids differ from keloids that develop elsewhere, including in their pathophysiology, clinical manifestations, and treatment.

Objective: Aim was to determine the effectiveness of AIIMS Bhopal Pre-sternal Keloid Scale (ABPSKS) for assessing severity among cases of pre-sternal keloid.

Methods: This prospective study was conducted at Burns and Plastic Surgery Center Hayatabad, Peshawar during September 2022 to May 2023. Total 137 patients of both genders were presented in this study. All the patients had symptoms of pre-sternal keloid were included. Comprehensive demographic data was gathered following the acquisition of informed written consent. AIIMS Bhopal Pre-sternal Keloid Scale (ABPSKS) was employed among all cases. SPSS 22.0 was used to analyze all data.

Results We found among all, 73 (53.3%) were males and 64 (46.7%) were females. The patients mean age 23.6 years. There were 57 (41.6%) married patients. Most common symptoms among cases were itching, pain and skin infection. Trauma and burns were the main common causes. We found severity of disease among 115 (83.9%) cases. Efficacy of disease location was found in 110 cases which is higher as compared to observer found in 80 cases with p value <0.005.

Conclusion: We concluded in this study that ABPSKS is an effective tool for assessing disease severity and location among cases of pre-sternal Keloid.

Keywords: ABPSKS, pre-sternal keloid, severity, location

INTRODUCTION

Common scar assessment techniques used to examine keloids are the PVSS, the Manchester Scar Scale (MSS), and the POSAS. The development of these popular scar assessment methods did not take keloids into account as a separate entity[1]. Sullivan first reported the VSS in 1990. The burn scar assessment scale is the most often used end measure in research for evaluating treatments[2]. It is critical to gather information from the patient's point of view in order to achieve patient satisfaction with results, however the VSS fails to do so[3]. The POSAS is composed of patient-reported symptoms and observations made by third parties. Its two primary components are the patient scale and the observer scale[4]. While evaluating pre-sternal keloids, POSAS has a number of limitations: (i) The possibility of subsequent infections, pus discharge, and the formation of many sinus tracts in pre-sternal keloids are not considered by POSAS. (ii) Using a numerical scale from 1 to 10 to evaluate a single outcome measure runs the risk of becoming arbitrary and compromising measurement reliability. (iii) Evaluation of the lesion's impact on the patient's quality of life is complicated because QoL is not considered an independent variable. The MSS was initially described in 1998 by Beausang et al.[5]. The combination of pigmentation and vascularity under the scalp causes a "color mismatch" with surrounding tissues.

Keloids often appear on the front of the breast; in fact, nearly half of all keloids are located there, according to one study[6]. Reasons for this include the fact that keloids are most common on the face and that acne and folliculitis are the main triggers for their development. Another consideration is the strain on this region caused by breathing and the repetitive motions of the upper limbs. The front of the chest gets stretched out by these horizontal actions. This repetitive stress aggravates and prolongs inflammation in the reticular dermis of anterior chest wounds[7]. Keloids develop along the skin's main tension lines due to these forces. This also explains why pre-sternal keloids on the chest can take on such different shapes[8]. Consider keloids; they can come in many different forms and sizes. Injecting triamcinolone acetonide or 5-fluorouracil intralesionally into pre-sternal keloids is a therapeutic method. Surgical excision with adjuvant irradiation, silicone sheets, laser treatment, and pressure therapy are among the other options[9]. Everyone knows that the pre-sternal area is notoriously difficult for keloidal repair following excision due to the immobility of the tissues there. After a pre-sternal keloid has been removed, the defect may need to be repaired using a local, regional, or distant flap. The clinician should choose the most appropriate treatment plan for each patient based on their unique set of symptoms.

Our intention was to develop a pre-sternal keloid-specific instrument for the purpose of assessing the severity of the disease, the efficacy of treatment, and the outcomes of different treatment methods. We believe that pre-sternal keloids should be considered a distinct clinicopathological entity from keloids that occur elsewhere[10].

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MATERIALS AND METHODS

This prospective study was conducted at Burns and Plastic Surgery Center Hayatabad, Peshawar during September 2022 to May 2023 and comprised 137 patients. Comprehensive demographic data was gathered following the acquisition of informed written consent. Participants were included if they gave written consent and were between the ages of 14 and 35 and had not previously received any medical treatment for their condition. Exclusion criteria included those who were less than 14 years old, those who did not give written agreement, and those with serious medical conditions.

Incorporating all the pertinent aspects of the patient's and observer's viewpoints, we created a scar evaluation scale that is particular to pre-sternal keloid after reviewing the existing scar assessment instruments. Then, we improved the instrument's specificity for pre-sternal keloids by adding a few more measures. A pre-sternal keloid scale developed at AIIMS Bhopal, we call it ABPSKS. There are two parts to ABPSKS, just like any other

scale: the patient part and the observer part. We measured the outcomes. We analyzed all of the data using SPSS 22.0.

RESULTS

We found among all, 73 (53.3%) were males and 64 (46.7%) were females. The patients mean age 23.6 years. There were 57 (41.6%) married patients. Most common symptoms among cases were itching, pain and skin infection. (Table 1)

Table-1: Characteristics of the included cases

Variables	Frequency	Percentage
Mean age (years)	23.6	
Gender		
Male	73	53.3
Female	64	46.7
Marital status		
Married	57	41.6
Unmarried	80	58.4
Symptoms		
Itching	65	47.4
Pain	43	31.4
Skin infection	29	21.2

Trauma and burns were the main common causes of the disease. (figure 1)

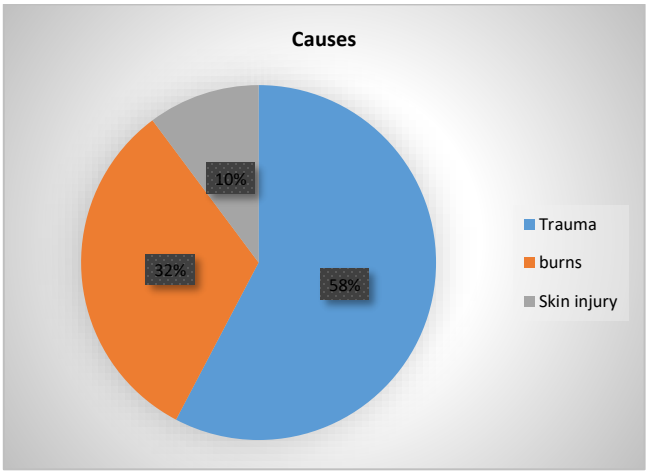

Figure-1: Causes of disease.

We found severity of disease among 115 (83.9%) cases.(figure 2)

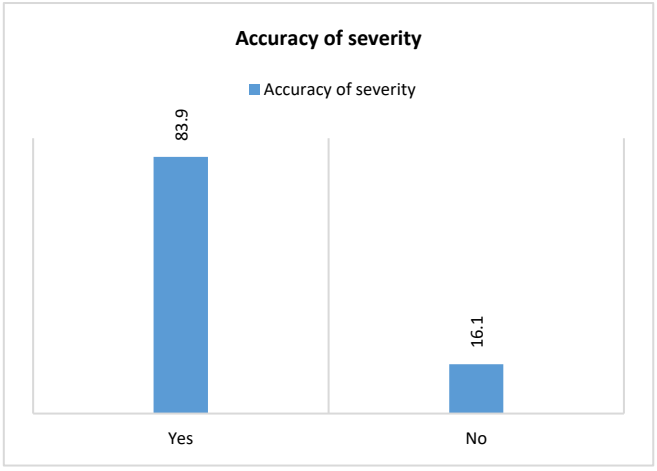

Figure-2: Severity of disease accuracy

Efficacy of disease location was found in 110 cases which is higher as compared to observer found in 80 cases with p value <0.005.(table 2).

Table-2: Outcomes of disease location

Variables	ABPSKS	Observer
Efficacy of Disease Location		
Yes	110 (80.3%)	80 (58.4%)
No	27 (19.7%)	57 (41.6%)

DISCUSSION

After completing an in-depth investigation of well-known scales such as the VSS, POSAS, and DKS, and finding the limitations of these scales when applied to pre-sternal keloids, we have established a technique for assessing pre-sternal keloids[11,12]. This method allowed us to develop a system for evaluating pre-sternal keloids. The Dynamic Keloid Score (DKS) is a keloid-specific outcome instrument that was established with the intention of standardizing and evaluating the outcomes of different therapy. When it comes to ABPSKS, the patient component score and the observer component score are not put together in order to arrive at a total score, as is the case with DKS[13].

Instead, the ABPSKS score is calculated by adding the two scores together. We also express them independently because we believe that this provides more insight into the perspectives of both the patient and the observer than a total score and a severity rating based on the total score. This is because we believe that this provides more information about the patient's perspective. As an additional feature, we have incorporated into our instrument the deployment of measures that score infections and pus discharge, in addition to the presence of multiple sinus tracts, respectively. In accordance with the scar assessment methods that are the most generally utilized[14],

These characteristics have not yet been taken into consideration. Our patients who have had keloids for a prolonged amount of time and are of a significant size have exhibited these traits, as found in our patients[6]. These features have an effect on the patients' quality of life, which is why they are important. Our instrument becomes more specific for keloids that are positioned in the pre-sternal area as a result of the incorporation of these factors. The computation of the surface area of the lesion is not something that we intend to conduct in the same way that it is done in DKS. We believe that not only is it difficult to determine the surface area of a presternal keloid, but the measurement is also not very useful[15]. This is the reason why we have come to this conclusion.

In a pre-sternal keloid, the response to therapy is more closely connected with the height of the lesion than it is with the surface area of the lesion, according to our findings[16]. This is the conclusion that we have reached as a result of our observations. In compared to the DKS, we have carried out a greater number of sub-classifications in the height dimension. This is the reason why this is the case. The significance of this lies in the fact that even minute changes may be caught, and the efficacy of therapies can be measured with greater precision. Instead of analyzing the pigmentation and vascularity of the lesion separately, we have merged the measurement of the lesion's color, which is comparable to MSS[17]. This allows us to more accurately assess the lesion's condition. This is yet another big adjustment that we have made to our current procedures. In patients with skin of color, who make up the majority of our cases, where it is difficult to distinguish pigmentation and vascularity individually, this approach is particularly beneficial since it allows for a more accurate diagnostic assessment[18]. Patient vascularity and pigmentation are difficult to recognize separately. The technique of evaluating the lesions is made easier to apply, especially to individuals of color, according to our point of view, which is that this way streamlines the process.

CONCLUSION

We concluded in this study that ABPSKS is an effective tool for assessing disease severity and location among cases of pre-sternal Keloid.

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