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Association Between Blood Group And Hypertrophic Scar

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Abstract

Hypertrophic scar and keloids belong to the spectrum of abnormal wound healing. It has been a bothersome complication of scars. Various risk factors have been proposed to be in association with incidence of hypertrophic scars, the important one being familial predisposition and location of the scar. In this article we would like to put forth our experience in assessing the association between hypertrophic scar and blood group.

Keywords: Blood group; Hypertrophic scar.

Introduction

Scar, the word itself being derived from the latin word meaning cicatrix, is an end point of complex repair mechanism of human body.[1] The term scarring encompasses a wide clinical spectrum from normal fine lines to abnormal widespread, atrophic, hypertrophic and keloid scars and also scar contractures.[2] Scars are often considered trivial, but they can be disfiguring and aesthetically unpleasant and cause severe itching, tenderness, pain, sleep disturbance, anxiety, depression, and disruption of daily activities.[3] Various risk factors have been proposed for the occurrence of hypertrophic scar and keloid. They are young age, female gender, dark skin, neck or upper limb burns, multiple surgical procedures, greater than 3 weeks to healing, meshed skin graft use, and burn severity.[4] Among genetic factors specific types of HLA antigens and specific blood group have been linked to the occurrence of hypertrophic scars. In this article we would like to share our experience in associated blood groups with the occurrence of hypertrophic scars.

Materials and Methods

This study was conducted in the Department of Plastic surgery of a tertiary care center in Puducherry, during January 2020. A total of 10 patients who presented to the OPD with hypertrophic scars were included in the study. The scars were evaluated only with clinical photographs. All patients were instructed to get their blood group checked and the association of the same with hypertrophic scar was assessed.

Results

Out of the 10 patients who presented to us, 6 patients who had hypertrophic scar were A+ve. No statistical analysis done.

Patient No	Scar	Location	Blood group
1.	LSCS scar	Suprapubic	O +ve
2.	LSCS scar	Suprapubic	A +ve
3.	Post traumatic	Back	A +ve
4.	Post MRM	Right chest	A+ve
5.	Post Ear lobe piercing	Right Ear lobe	A+ve
6.	Post Ear lobe repair	Left ear lobe	O-ve
7.	Post traumatic	Left elbow	B+ve
8.	Post traumatic	Forehead	A+ve
9.	Post Sebaceous cyst excision	Suprapubic	AB-ve
10.	Post BCG scar	Left shoulder	A+ve

Discussion

Hypertrophic scar and keloids are defined as excessive scar formation due to abnormal response to injury. Both are manifestations of over exuberant scarring, although the upstream aetiology is probably different. Keloids and hypertrophic scar are differentiated by their clinical appearance of the former being extending beyond the scar margin, and the latter being confined to the scar margins. The disadvantage of them both are that, they are both associated with intense itching and they are cosmetically unacceptable. Hence a knowledge about the risk factors and predisposing conditions, will aid in taking precautions to prevent their occurrence.

Keloids are rare and are limited because of their genetic predisposition, being present in 6% of the entire population. It is primarily predominant in black and asian population.[5] Other risk factors that have been proposed in keloids and hypertrophic scars are position of the scar (Presternal, shoulder etc.,). HLA-DQA1*0104, DQB1*0501 and DQB1*0503 have been reported to be have an increased risk of developing keloid scarring.[7] Various studies have been described in linking the association of blood group with hypertrophic scar. People with Blood group A has been found to have increased incidence of keloid and hypertrophic scar due to the presence of red cell antigen A on the blood cells.[8] Ramakrishnan et al[8] did a study in Madras in 1974, in which he postulated that group A patients had a higher incidence of hypertrophic scar and keloids. Shaheen et al[9] also confirmed the association of keloids and blood group A.

Our article concurs with the above studies, in that blood group A patients had a higher incidence of hypertrophic scars and keloids. The main drawback of our study is that statistical analysis was not done and the sample size was small and a single centre study. Hence it is essential for a multicentric large volume randomized control study to establish the association between blood group A and hypertrophic scars & keloids.

Conclusion

Keloids and hypertrophic scar cause significant morbidity in terms of aesthetics as well as functional. Hence it is essential to take precautions to avoid the occurrence of the same. Identifying the risk factors helps in preventing the occurrence of the same. Blood group identification is one of the simpler methods. But a large multicentric randomized control study with statistical analysis is required to validate the study.

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