

Development of Keloid after Surgery & its Treatment

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Abstract:- Keloid are the outgrowth on the skin, it can develop when that particular area is undergone any surgery. Its shape and size varies. ^[1] This scar type of growth also called as Keloid Disorder. It can happen after injury, vaccination or after getting tattoo over the skin (Piercing). Keloid is seen in American and African population but seen rarely in Indian Population. It is associated with the areas like Chest, Shoulder frequently and at other area it is not usually seen. Multiple treatment options are on hand like Cryosurgery, Laser Therapy, Radiation Therapy Fluorouracil injections. ^[2] The injection given with Corticosteroids helps the scar in its shrinkage, after completing its treatment with CS injections. Within 5 years it starts come into view another time.

Keywords:- Keloid, Hypertrophic scar, Treatment, Forensic significance

I. INTRODUCTION

Keloid is common and is caused by a proliferation of dermal tissue following skin injury. They cause functional and psychological problems for patients, and their management can be difficult. ^[3] Keloid has affected patients and frustrated physicians for centuries. It results from excessive collagen deposition, the cause of which remains elusive. Clinically, these scars can be disfiguring functionally, aesthetically, or both. A thorough understanding of the pathophysiology and clinical nature of the scar can help define the most appropriate treatment strategy. ^[4]

Anything that can cause a scar can cause a Keloid. This includes being burned, cut, or having severe acne. Keloid can also develop after you get a body piercing, a tattoo, or have undergone any surgery. Keloid sometimes shows up three months or more after your skin is injured whereas some continue to grow for years. ^[5]



Fig 1: Keloid on Chest region

<http://www.skindropbox.com/LesionWebsite/KeloidScarHS/C.htm>

II. SYMPTOMS OF KELOID

- They take time to grow like upto three months before you see the first sign of the scar and even grow for years.
- It is usually a raised scar with flat surface having pink, purple or red color and darkens with time.
- It feels different from the surrounding skin.
- When they grow they causes pain, irritation, itching.

III. CAUSES OF KELOID

Any skin injury can lead to the formation of Keloid. Whenever an injury heals it causes scar formation. When the tissue present in the scar does not stop forming even when the wound get heals then this extra tissue cause raised area on the skin which leads to the development of Keloid. The skin injury which leads to Keloid are: tattoos, chicken pox, surgical wounds, other burns and cuts.

The difference among the Keloid, usual scar and hypertrophic scar can be done by morphological appearances, cellular functionality and histological appearances etc. ^[6]

IV. TREATMENT OF KELOID

There are different types of treatment available for Keloid such as the following:

- Laser Treatment: This helps in flattening the surface of the Keloid which is usually raised.
- Pressure Application: In this pressure is applied on the area having Keloid which reduces the blood flow at that area
- Surgical removal: In this process it is cut surgically.
- Use of Silicon sheets or gel: Silicon sheets or gel are applied on the area which helps in flattening its surface.
- Treatment by giving Corticosteroid shots which shrinks Keloid.

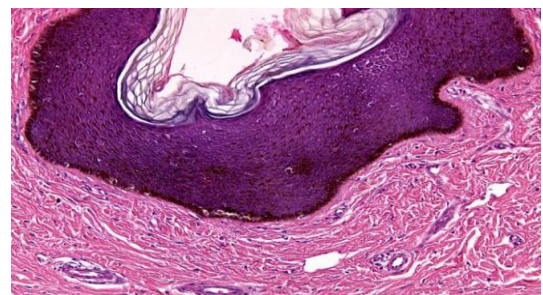


Fig 2: Histological picture of Keloid

<https://www.microscopyu.com/gallery-images/keloid-scar-at-10x-magnification-1>

Alongside of all the available treatment, a combination of medical treatment can be highly effective to get rid off. Certain new option also came into existence by the modern science like cultured epithelial autograft, Pulsed dye laser and Interferon alfa-2b. [7]

The following groups of people are at high risk to acquire it:

- When a lady is pregnant
- A person who is younger than 30 or around
- An Asian descent
- A Latino descent

There are some genetic links which are established if anyone's both parents have a Keloid there will be higher probability to inherit it. In some recent studies it was determined that AHNAK gene is responsible for Keloid development. [8]

The most common age to develop it range from 10 to 30 years and it effects male & female indiscriminately. [9]

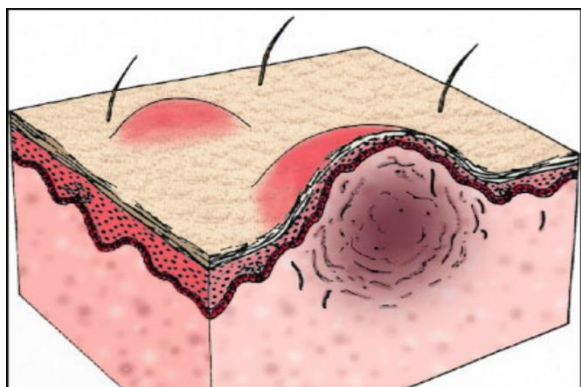


Fig 3: Generation of Keloid

<https://keloid1.blogspot.com/2012/08/reducing-unsightly-keloid-scars-how-do.html>

When examination was done under SEM, it was noted that a normal skin have the collagen bundles that are distinct in appearance whereas in case of hypertrophic scars collagen weave are different. When Keloid was examined it was seen that in the area where Keloid was developed, collagen fibrils were much larger and highly irregular than hypertrophic scar and normal scars. [10]

V. CONCLUSION

A Keloid is developed after a surgery but reappears after treatment is done. It is formed by the excess of collagen a protein. Further studies in this area can be helpful in the permanent solution of it. If it is a permanent type of Scar and remains at the site where it develops originally so, can be used in personal identification in forensic Science.

ACKNOWLEDGEMENT

I am Rajan, writing this review paper as a tribute to my uncle Mr. Amit who is suffering from this dermatological problem.

REFERENCES

- [1]. <https://www.aad.org/public/diseases/a-z/keloids-overview>
- [2]. <https://www.drugs.com/health-guide/keloids.html>
- [3]. O'Brien L, Jones DJ. Silicone gel sheeting for preventing and treating hypertrophic and keloid scars. Cochrane Database of Systematic Reviews 2013, Issue 9. Art. No.: CD003826. DOI: 10.1002/14651858.CD003826.pub3. Accessed 20 April 2021.
- [4]. Alster, T.S., Tanzi, E.L. Hypertrophic Scars and Keloids. Am J Clin Dermatol 4, 235–243 (2003)<https://doi.org/10.2165/00128071-200304040-00003>
- [5]. <https://familydoctor.org/condition/keloids/#:~:text=Keloids%20are%20a%20type%20of,scar%20can%20cause%20a%20keloid%20>
- [6]. Tuan Tai-Lan and Nichter S. Larry, ScienceDirect, The molecular basis of Keloid and hypertrophic scar formation, 1998
- [7]. Robert S. and Philip D. Shenefelt, Willey online library, Keloids and Hypertrophic Scars, 2001
- [8]. <https://www.healthcare.com/health/keloids>
- [9]. https://www.health.harvard.edu/a_to_z/keloids-a-to-z
- [10]. Bishara S. *et al*, Annals of Plastic Surgery, Keloid or Hypertrophic Scar The Controversy: Review of the Literature, 2005