

## **Advances in the Treatment and Reversal of Keloid Scarring**

Dr.Arun Inbaraj<sup>1</sup>,Mrs.Rajalakshmi<sup>2</sup>,Mr.Murali<sup>3</sup>,Mr.Ashok<sup>4</sup>,Mrs.Gnancy subha<sup>5</sup>

J.N.N Institute of Engineering<sup>1,3,4</sup>

VeltechMultitech Dr Rangarajan Dr.Sakunthala Engineering College<sup>2,5</sup>

### **Abstract**

Keloid is a common in lesions over the soft and bony parts especially in Genetic and environmental factors contribute to the development of keloid lesions. Keloids are thought to be caused by overactive fibroblasts that produce high levels of collagen and growth factors. A keloid scar is distinguished from a normal or hypertrophic scar by the extension of the tissue beyond the original site of trauma. Almost a good percentage of cases following sternotomy for access open heart surgery and coronary revascularization. We observe the pigmented epithelium gets barrier in the wound and the pigment in the epithelium is stimulant for sternotomy is quite common. Keloids are the result of abnormal wound healing following trauma to the skin or inflammation of the skin. In this study we come across in reversal of keloid in the fibrous tissue proliferation. The aim of this study is to completely reverse the keloid using the Nano therapy.

Key words: Sternotomy, Fibrous tissue proliferation, Coronary revascularization.

### **Introduction**

Keloid meaning 'crab's claw' was derived from Greek to describe its characteristic clinical presentation. Historically the earliest known keloid scarring was reported around 1700 CE Egypt in the Smith Papyrus<sup>1,6</sup>. The term was first introduced into modern medical literature in 1814. A Keloid is an abnormal proliferation of scar tissue that forms at the site of a cutaneous injury<sup>2</sup>. According to several previous studies of patients with keloids the male to female ratio is almost 2:1. Keloids are most common in people who are younger than 30 years of age. An individual may not recall exactly what injury caused a keloid to form some of the time<sup>7</sup>. There are approximately 10 Percent of people in the world suffer from keloid<sup>9,10</sup>.

### **Treatments**

Injections of corticosteroids is a part of a treatment for keloids, these injections are often used as part of the treatment plan. Patient usually receive a series of injections<sup>3</sup>. It is common for the first injections to relieve symptoms and make the keloid softer after the first treatment. Most of these keloids will however grow back within five years of their removal. Surgical procedure is surgically remove the keloid from the affected area<sup>4</sup>. There is no doubt that this treatment can offer a permanent solution to keloids, but it is important to keep in mind the nearly 100% of keloids return after this treatment<sup>8</sup>. Another treatment of the keloid is pressure earring<sup>5</sup>. These

devices tend to be uncomfortable and patient must wear the device for 12 to 20 hours a day for several month.

### Materials and methods

In our observation the role of Nano energy in reversing the changes already brought about by the formation of keloid. The first change we noticed is the change in colour of the lesion it turned less pigmented and it appear as the pale lesion. It slowly turned its size and shape. That is, it became very small over a period of one month.



Before Treatment



After Treatment

One study of keloid with a cream develops from herbal source there we found similar changes but it took longer time in reversing the keloid whereas the study with nanoparticle, it was found to be faster the changes we describe above all the changes here we observed it took only weeks and rest of the cream took months. The Keloid is a negative zeta potential. We used the highest potential to reverse this condition. Keloid condition was reversed within one month.

### Results and Discussion

We are thinking in terms of first depigmented area with cream and then incision. This step will take in our cardiac surgery cases in collaboration with the cardiac surgeons. That will substantiate hypothesis of pigment is a causative factor. Many different technics and macrologically we have tried in our observation, this keloid formation especially in the upper part of the body it is a phenomenon commonly seen in the population higher quality of pigment deposition in the skin compare European counterpart. The European counterpart does not develop keloids. So, the pigment is one of the main causative agents in the creation of keloid. So, sternotomy incision in cardio thoracic surgery a prepared methodology.

Pigment is a causative factor in promoting fibrous tissue proliferation to the extent hyper proliferation of fibrous tissue. On ratio comparison the white or the European, Asian, and African. The Asians carry some pigment the African section of the society carries the highest

corundum of melanin pigment. On the comparative study it is observed sternotomy incident % Asian, Europe and African. In most cases, hypertrophic scars appear within 4-8 weeks after wound closure and continue to develop over a period of 6-8 months. The progression of the disease usually stops after that point and they begin to become quiescent once again.

## **Conclusion**

In recent years, there have been encouraging developments in novel strategies for preventing and treating keloids. Currently, there are no large, high-quality studies evaluating the effectiveness of different keloid management methods. This limits the establishment of standardized guidelines for the management of keloid disorders. The current state of research into different keloid treatments is lacking high-quality randomized controlled trials (RCTs) as well as a few low-quality RCTs. Studies evaluating keloid therapies should consistently use validated scar assessment tools, such as the Vancouver Scar Scale and the Patient and Observer Scar Assessment Scale. Further, studies should make an effort to provide subjective measurements of scar volume reduction. Performing comparative studies between treatment methods requires a consistent experimental design. Keloids continue to be a challenge for clinicians, and the purpose of this study is to provide a future treatment regimen for keloids. The improvement in outcomes must be based on high-quality and replicable processes.

## **References**

1. Robles DT, Berg D. Abnormal wound healing: keloids. *Clin Dermatol.* 2007 Jan-Feb; 25(1):26-32.
2. Huang C, Liu L, You Z, Du Y, Ogawa R. Managing keloid scars: From radiation therapy to actual and potential drug deliveries. *Int Wound J.* 2019 Jun; 16(3):852-859.
3. Wang M, Chen L, Huang W, Jin M, Wang Q, Gao Z, Jin Z. Improving the anti-keloid outcomes through liposomes loading paclitaxel-cholesterol complexes. *Int J Nanomedicine.* 2019; 14:1385-1400.
4. Palko JR, Arfeen S, Farooq AV, Reppa C, Harocopos GJ. Corneal keloid presenting forty years after penetrating injury: Case report and literature review. *Surv Ophthalmol.* 2019 Sep-Oct; 64(5):700-706.
5. Kang S, Hur JK, Kim D. Advances in diagnostic methods for keloids and biomarker-targeted fluorescent probes. *Analyst.* 2019 Mar 11; 144(6):1866-1875.

6. Chen Y, Chen Y, Liu Y. Abnormal Presentation of Aggressive Fibromatosis After Radiotherapy for Keloids: Case Report and Brief Literature Review. *Ann Plast Surg.* 2019 Jul; 83(1):104-107.
7. Lei R, Shen J, Zhang S, Liu A, Chen X, Wang Y, Sun J, Dai S, Xu J. Inactivating the ubiquitin ligase Parkin suppresses cell proliferation and induces apoptosis in human keloids. *J Cell Physiol.* 2019 Sep; 234(9):16601-16608.
8. Coentro JQ, Pugliese E, Hanley G, Raghunath M, Zeugolis DI. Current and upcoming therapies to modulate skin scarring and fibrosis. *Adv Drug Deliv Rev.* 2019 Jun; 146:37-59.
9. O'Boyle CP, Shayan-Arani H, Hamada MW. Intralesional cryotherapy for hypertrophic scars and keloids: a review. *Scars Burn Heal.* 2017 Jan-Dec; 3:2059513117702162.
10. Lee YI, Kim J, Yang CE, Hong JW, Lee WJ, Lee JH. Combined Therapeutic Strategies for Keloid Treatment. *Dermatol Surg.* 2019 Jun; 45(6):802-810.