

## A Novel Aspect in Keloid Treatment: Short Term Effects of Kinesio® Taping

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### ABSTRACT

Keloid is defined as excessive cell production resulting with abnormal wound healing. Pathogenesis is still not well understood. Nodules characterized benign fibrosis formation usually is located in chest, shoulder, neck and earlobe. Not only aesthetics concerns but also causes pain and irritation. Intralesional corticosteroids, topical applications, cryotherapy, surgery, laser therapy, and silicone sheeting are widely used options mentioned in the literature [1]. Clinically, keloids have been documented to be formed following an injury or inflammation of the skin and grow continuously over the years and they do not regress spontaneously [2,3]. This case study was planned to investigate the short term effects of kinesio-taping in keloid treatment.

### CASE REPORT

33 years old female patient diagnosed with keloid located in chest area was treated. The patient was referred to our clinic due to pain and aesthetic complaints. Written and verbal informed consent was obtained from the patient. The patient's demographic details and family pedigree were recorded due to genetic factors may play role in disease. The case has had the keloid since 1998, only a small acne on the chest that has become such a wide dimensions in 6 years time. The case explained the acne became a wound after scratching frequently and afterwards became a keloid. Our patient received cryotherapy treatment for four sessions with each of the sessions have three week intervals in 2004. This therapy repeated in 2006 also and had no gain in reduction of the size in keloid. Steroid injection was given once every five weeks into the keloids and a reduction height and volume in was observed but the colour became redder after this treatment procedure. Because of this reason our patient did not want to seek this treatment again even though the keloid was not healed.

Before our treatment began, our patient had been using another taping method named Haelan Tape including an I band over keloid. This tape is a tight and firm tape covering keloid and has an impermeable tissue.

On observational clinical examination, researchers measured keloid's dimensions by using a standard tape measure. The case has a keloid on the chest in the localisation medio-lateral 7,4 cm and supero-inferior 5,1cm dimensions (Figure 1). The keloid was stiff; there was an increase in pain with palpation. The colour of keloid varied between pink to red that causes an aesthetic problem for our case. The intensity of pain felt during activity and rest was measured by Visual Analogue scale (VAS). Pain intensity was marked on a 100-mm horizontal line, in which 0 expresses no pain and 100 mm expresses maximum pain the patient felt. Her pain was found out to be as high as 5/10 (where 0 indicates no pain and 10 is the worst pain imaginable). The pain was evident especially when a pressure was implemented on to keloid area and did not change with activity.



**Figure 1.** Keloid before treatment.

The patient was decided to treat with Kinesio-taping method on the keloid area (Figure 2). Before the application was performed, the case was questioned for any allergenic reactions, then fully informed about all adverse events including itching, stinging, any other types of sensations giving discomfort and also erythema or increase in pain was set as exclusion criteria for implementation. The keloid was covered with I band with % 50 tension, taping technique. Two pieces of I band were used, one vertically-upright, the other one was applied in horizontal direction. After the taping was completed, the area was rubbed to activate the kinesio-tape. Taping was renewed per 4 days, the tape was removed 1 hour before a new application was performed, to observe any allergic reactions. The case seek treatment for 3 months. Pain and the size of scar tissue was assessed before and after 3 months treatment.



**Figure 2.** Treatment protocol.

The pain was decreased from 5 to 3, assessed with Visual Analogue scale. The dimension of scar tissue has decreased in medio-lateral 5,4 cm and superior-inferior 4,2 cm (Figure 3). The colour of the scar tissue has gotten lighter. The colour of keloid varied from pink to white.



**Figure 3.** Keloid after treatment.

## DISCUSSION

The current study shows a dramatic reduction in size of keloid. Keloids are defined as dermal tumors characterized by excessive accumulation of collagen. During physiological wound healing, mechanical tension accumulates within the contracting wound site causing fibroblast proliferation and increase in the synthesis of collagen, citing sites of keloid predilection in areas of increased tension [3].

No adverse effects due to kinesiotape application were detected. Keloid is a disorder that has various treatment protocols causing blistering, pain and also potential risk of malignant change in some options that has limited effectiveness [1]. So kinesio-taping looks a cheap and simple alternative treatment

option. Although this study has only short term effects of keloid, new researches can be planned to show more effects of kinesio-taping on this area.

Our current study shows a decline in size of keloid and also a reduction in pain. Recent studies on this area advise an observation period of at least 2 years regardless of the technique employed [4]. Although our study does not have a long term follow up results, it's an important point to emphasize the detection of such a simple and non-invasive way to treat keloid without giving any harm or offending the patient.

Kinesiotape is a current conservative treatment method frequently used in orthopaedics field to restore muscle function and strength, improve range of motion, reduce pain, increase lymphatic drainage and correct the position of fasciae and skin. Kinesiotape mechanism of action can be described as it creates a space by lifting the skin microscopically and this leads to an increase in movement and circulation. This lifting effect resulted in muscle and fascia relaxation, increased lymphatic flow, complete reduction of oedema. The scar turned into a thin, light line.

The technique used in this study doesn't need a complicated special technique performed by a professional that can be easily learned by patients. That also makes kinesio-taping much more cost effective in comparison to other treatment options.

## CONCLUSION

The size of keloid and pain intensity was reduced by kinesiotape application in this case study. With the result of this case study, comprehensive studies can be planned with larger sample groups in longer periods for the effects of kinesio-taping in keloid disease. Results found in this case can be an indicator of kinesio-taping may be an alternative treatment options instead of time wasting and less effective treatments used in keloid.

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