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ROLE OF *JALAUKA* (LEECH) THERAPY IN THE MANAGEMENT OF KELOID – A CASE REPORT

Ayurveda

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ABSTRACT

The medicinal leech (*Jalauka*) is known as "*Hirudo Medicinalis*" and it is mostly used in all over world as medicinal leech. *Jalauka Avacharana* (Leech Application) is defined as a gentle methods for the removal of *Pitta Dosa vitiated* blood in sophisticated person. Keloids is characterized by proliferation of immature fibroblasts and also immature blood vessels. Keloids has claw-like processes which is smooth, pink and raised patch as well as unsightly, often tender to touch and always itch. A 15 years old girl child patient with complains of pain and swelling on chest region. She have feeling of puling muscles of that resion. Due to pain she got disturbed in sleeping. On examination tender on touch, dark reddish in colour with claw-like structure on upper region of sternum since 2 years. After conservative treatment from modern hospital for keloid was taken but there was no any improvement in the symptoms then she came to our OPD of Nepal Ayurveda. We diagnosed as keloid and *Jalauka Abcharana* (Leech Therapy) was planned with two leeches were applied on the keloid. It size was 20X10 mm. Total three setting once in every week was done. After first sitting of *Jalauka* application pain and swelling was reduced. After second sitting the size was reduced. The patient was relieved from all symptoms within two weeks. After third sitting all unwanted part was sloughed out without surgical debridement. This single case manifests that keloid can be treated with *Jalauka* application. Within six month we didn't found recurrence.

KEYWORDS

Hirudo Medicinalis, Jalauka, keloid, Leech.

Introduction:

Before 3000 years ago, Sushruta has been described two bio-surgical devices, one is *Jalauka* (Leech Therapy) and another one is *Makkhi* (Maggot therapy). Now a days *Jalauka* has been recognized worldwide for medical use and recommended specially to enhance or to re-establish the blood circulation after plastic surgery. About 650 leech species are identified but only 15 are used in medicine. The medicinal leech (*Jalauka*) is known as "*Hirudo Medicinalis*" and it is mostly used in all over world as medicinal leech. *Jalauka Avacharana* (Leech Application) is a gentle methods for the removal of *Pitta Dosa vitiated* blood in sophisticated person. [1] Leech therapy is now used to treat poor venous drainage, relieve vascularly compromised flaps and salvage tissue. Leeches are used in pain syndromes of various origins. Leeches have also been used successfully to compensate venous congestion in replants of fingers, toes or nose. [2] Keloid is a condition of proliferation of fibroblast, collagen fibrils and immature blood vessel usually on a pre-existing scar. Exact cause of it is unknown till now but it is more common in Negro population, females, family predisposition as well as increases incidence in tuberculosis patients. It has claw-like processes which is smooth, pink and raised patch as well as unsightly, often tender to touch and always itching tendency.[3]

Case Report:

A child girl patient of age 15 years visited in outpatient of Nepal Ayurveda with complaints the complain of pain and swelling on chest region. She have feeling of puling muscles of that resion. Due to pain she got disturbed in sleeping. On examination tender on touch, dark reddish in colour with claw-like structure on upper region of sternum since 2 years but increased in symptoms more within 3 months. She was a school going girl of vegetarian diet with no history of smoking addiction and alcoholism. Before consulting to our OPD, The patient visited civil hospital 1 month back and had taken oral antibiotics and analgesics. The surgeon denied for further treatment. So she came to Ayurveda OPD and was admitted in female surgical ward for further investigations and treatment. All regular investigations were done for pre procedure assessment. No past history of hypertension, diabetic mellitus, tuberculosis and any drug reaction was noted by patient. The laboratory investigation for blood, urine, and stool were conducted and found within normal limits. Patient was with normal Blood pressure (B.P.) 110/60 mm of Hg. On local examination there was pain, tenderness and swelling, blackish discoloration on keloid on upper region of sternum, (Fig-1). The patient was treated with *Jalaukacharana* (Leech application) Ayurved para-surgical procedure.

Method of *Jalaukacharana* (Leech application):

The treatment that we had selected to manage this condition is *Jalaukavacharan* (Leech therapy). The procedure of leech application was done as mentioned in classic by Sushruta adopting *trividha karma* as follow.[4]

***Purva karma* (Pre-procedure preparation):**

The material used for the procedures were; bowls, surgical gloves, turmeric powder (*Curcuma longa*), kidney tray, gauze piece, bandage, disposable needle were kept ready. *Jalauka* (Leeches) were placed in the water mixed with turmeric powder for two minutes so that leech became active. The affected fingers and hand was cleaned with normal saline then dried up and rubbed with dry gauze piece. After wearing the surgical gloves, *Jalauka* was held at its centre or nearer to the anterior sucker with the help of gauze piece.

***Pradhan Karma* (Procedure of leech application):**

Leeches were applied at the affected on over sternum region on keloid. Leech bites the affected area spontaneously and sucked the blood. The patient experienced the slight pricking sensation at the site of the bite. Once leech started to suck the blood, its neck part looks elevated that indicates that sucking was well and in progress. During sucking gradual distension were observed at its body centre and wavy movement / pulsation was visible throughout its body. The body part was covered with a wet swab except his mouth to create a natural atmosphere and it was maintained throughout the process by pouring of some water on it.

Paschat karma (post procedure):

Immediately after removal of leeches there was continuous oozing form the bite sites. The local part was cleaned with betadine solution and then turmeric powder was applied and was bandaged tightly. When *Jalauka* give up automatically, then it was kept in a kidney tray and turmeric powder was sprinkled on its mouth. *Jalauka* automatically vomit the ingested blood. Finally leech was squeezed smoothly with right hand to remove all the remnant part of ingested blood from its body. It is very important to remove all ingested blood otherwise leech will die or get diseased as mentioned in classic. [5] Similarly all three applied leeches had vomited and all the used *Jalaukas* were kept in clean vessel and clean water separately for next sitting.

Follow-up and Outcomes:

Jalaukavacharan (leech therapy) done for three times in this case till the completion of her treatment. In the first sitting two leeches were applied keloid (Fig-2). Swelling was mildly reduced and size is also reduced (Fig-3). After seven days two leeches were applied again. Assessment was done on seventh day. On local examination, swelling was reduced remarkably and dark reddish discoloration was reduced. We continue the leech application on seventh day as second sitting and

then on 21st day as third sitting (Fig-5). It was noticed that in one sitting approx 5-10 ml bloodletting was done by each leech. On 15th day patient was free from pain, Itching and swelling was reduced completely. On 21st day third sitting of *Jalaukavacharan* was planned. Then the wound was also about to healed. (Fig-6) After seven days follow up was done and all the fingers were observed as normal without any complication.

Images of leech application:



Fig-1: Before leech application



Fig-2: First sitting of leech application



Fig-3: After 1st setting of treatment



Fig-4: After 2nd setting of treatment



Fig-5: After 3rd setting treatment



Fig-6: Normal skin scar after treatment

Result and Discussion:

During this case study period it has been observed that pain and stiffness start decreasing after the first sitting of leech therapy and after the last follow-ups there is a significant decrease in symptoms including pain, and tenderness. Leech saliva contains a number of different substances, including hirudin, calin, anaesthetic compounds and antihistamine vasodilators. Hirudin is a potent anticoagulant that inhibits the conversion of fibrinogen to fibrin which preventing blood from clotting. Hirudin works with vasodilator compounds to increase blood flow to an area; at the same time the anaesthetic compounds allow for painless attachment. [6] Different mechanisms may explain the observed effects. First, various pharmacologically active substances besides the thrombin-inhibitor hirudin have been found in leech saliva, such as histamin-like vasodilators, kallikrein, and tryptase inhibitors, various other proteinase inhibitors, and anesthetics. Leech therapy could induce pain relief through antinociceptive effects and counter irritation. The antiinflammatory substances such as bdellins and eglins are helpful in reduction of inflammation by virtue of which swelling of the the tissue. [7] Leech saliva also contains hirudin-, calin-, and destabilase-like substances which increase microcirculation by decreasing the blood viscosity. Corboxypeptidase A inhibitor increases the inflow of blood at the bite site. Histamine-like substances are also present in leech saliva which act as a vasodilator. By this way these substances that are present in leech saliva increase the microcirculation, decrease the inflammation as well as stiffness and restriction of movement of the joints. [8] In follow up till 6 month we didn't found the recurrence.

Conclusion:

On the basis of the above case study we can conclude that leech therapy is beneficial in reduction of pain, tenderness, itching, and swelling in the patients of Keloid. With the help of leech therapy we can improve the quality of life of the Keloid patients. We can avoid the hazards of prolong use of Steroid drugs by using leech therapy.

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