

Therapeutic regimen for dislocations used by Traditional Ayurveda physicians in Sri Lanka

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Abstract

The history of traditional medicine runs beyond the era of great king *Rawana*. Throughout many years, it has developed its own way independently according to the needs of the human being. It is gifted from generation to generation as a great heritage which helps to maintain the health of the Sri Lankan nation. The aim of the study was to demonstrate a treatment regimen used by traditional Ayurveda physician cohort to treat fractures and dislocations. This article is a case report of 45 years old Sri Lankan female who had faced a road traffic accident and dislocated her right sterno-clavicular joint. Treatment regimen contains three phases contains 21 days. The plants used in this therapeutic regimen has special properties such as *Vedanasthapana*, *Shothahara*, *Sthambana*, *Balya*, *Thridoshashamaka* and *Asthisandhanakara* property which help to heal fractures. Most of the drugs have *Katu*, *Thiktha*, *Kashaya* taste and *Laghu*, *Theekshana*, *Snigdha*, *Ruksha* properties. Among the all drugs majority of drugs are in *Ushna veerya*, which have powerful *Vathashamaka* properties. When considering above properties and action this fracture and dislocation healing regimen of *Katugampala* tradition is very successful.

Key words: *Vedanasthapana*, *Shothahara*, *Sthambana*, *Balya*, *Thridoshashamaka*

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Introduction

Traditional medical system of Sri Lanka comes down mostly through generations in family lines of native physicians probably since the King *Rawana era*. Mostly this traditional knowledge came down from teacher to student by orally. After many years of oral tradition, ola leaves were used to deposit this knowledge. At present people are facing various accidents in each and every second in Sri Lanka. According to the records of Sri Lanka Police, the number of road traffic accidents (RTA) is being increased day by day. Many people

undergo various side effects followed by negligence of fractures and wounds caused by RTA. Using Plaster of Paris, exertion of fractured bones, introducing artificial bones and ligaments are main procedures used in allopathic system of medicine.

Traditional orthopedic treatments (*Kadum bindum wedakama*) had been called as *Bhinna roga Cikitsa*. It has a miracle power to healing fractures within few days after an injury. Although most are tend to get treatments immediately after a fracture, finally they used to take traditional medicine due to their belief of it. This study will aim of identifying an effective, curative therapeutic regimen for fractures and dislocations used in Sri Lanka. *Katugampala* traditional physicians have been practicing traditional medicine for last one hundred years in western province of Sri Lanka [1,2].

Background

In Ayurveda fractures are discussed under, *Susrutha Nidanasthana* 15 – causes and classification *Susrutha Cikitsasthana* 3 – Treatment and management

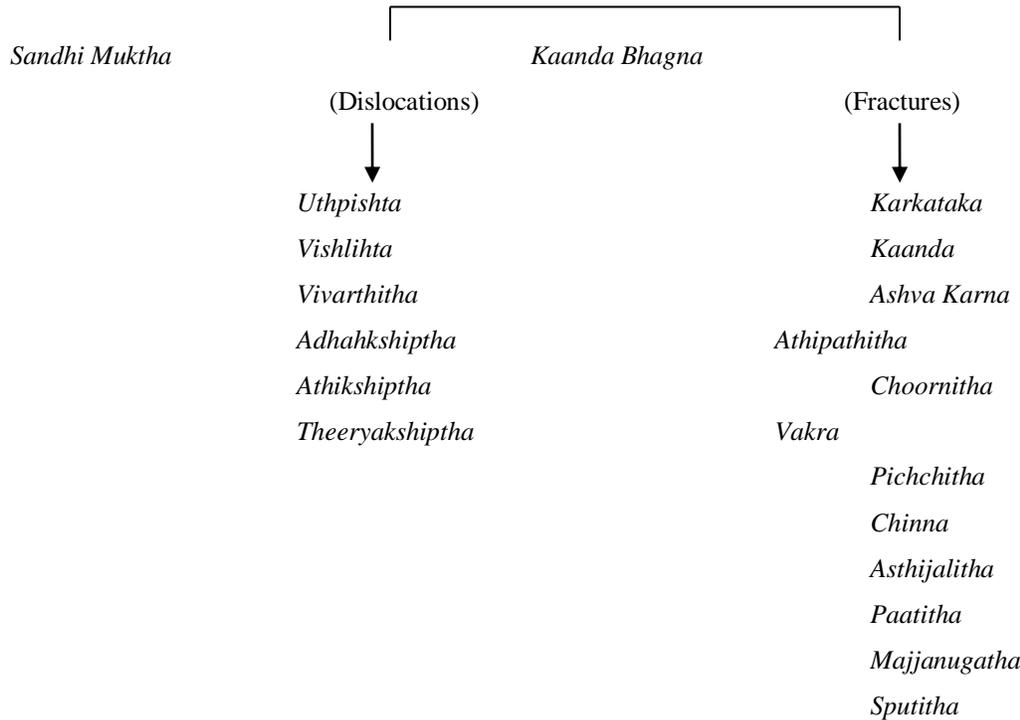
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*Classification of fractures According to Ayurveda
Bhagna*



According to modern medicine

In orthopedic medicine, fractures are classified in various ways.

Classification 1

1. Closed (Simple) fractures-are those in which the skin is intact
2. Open (Compound) fractures-involve wounds that communicate with the fracture

Classification 2

1. Complete fracture –A fracture in which bone fragments separate completely.
2. Incomplete fracture – A fracture in which the bone fragments are still partially joined.In such cases, there is a crack in the osseous tissue that does not completely traverse the width of the bone.
3. Linear fracture – A fracture that is parallel to the bone's long axis.
4. Transverse fracture – A fracture that is at a right angle to the bone's long axis.
5. Oblique fracture – A fracture that is diagonal to a bone's long axis.
6. Spiral fracture – A fracture where at least one part of the bone has been twisted.
7. Comminuted fracture – A fracture in which the bone has broken into a number of pieces.

8. Impacted fracture – A fracture caused when bone fragments are driven into each other.

Common and symptoms of Dislocations

- Intense pain
- Joint instability
- Deformity of the joint area
- Reduced muscle strength
- Bruising or redness of joint area
- Difficulty moving joint
- Stiffness

Common signs and symptoms of fractures

1. Visible fracture – In an open fracture, the fractured bone or bone fragments may be visible.
2. Deformity – The body part may appear deformed due to the displacement of the bone, the unnatural position of the casualty, or angulations where there is no joint.
3. Pain – The casualty will probably experience pain at a particular location. The pain (point tenderness) usually identifies the location of the fracture .The casualty may be able to "feel" the fractured bones.
4. Swelling – There may be swelling (edema) the suspected fracture site.

5. Discoloration – The area around the suspected fracture site may be bruise or have hemorrhagic spots (ecchymosis).

Treatments according to Ayurveda

Ayurvedic recommendations following fixation
Sprinkle cold decoction of *Panchawalkala*(decoction of barks of *Ficus benghalensis*, *Ficus religiosa*, *Ficus racemosa*, *Ficus tsiela*, *Garcentia cambogia*)

When pain is intense, sprinkle *laghu panchamoola ksheera kashaya*(decoction prepared by adding milk to barks of *Tribulus terrestris*, *Solanum indicum*, *Solanum xanthocarpum*, *Desmodium gangeticum*, *Pseudarthria viscida*)

Internally – warm cow's milk + Ghee + Laksha (Lac)

Compound fracture management

According to *Susrutha Samhitha*

Wash the wound with *Panchawalkala* decoction+ghee+bee's honey

Apply paste of *Panchawalkala*+ghee+bee's honey

According to *Ashtanga Hridaya Samhitha*

If the wound has severely damaged tissue/muscle ,bandage the wound after applying ghee+ bee's honey

If the tissue damage is less, medicinal powders should be applied

eg: *Woodfordia frutico* Bark + *Symplocos racemosa* Bark powder

Aglaia odoratissima+ *Symplocos racemosa* + *Katphala*+*Rubia cordifolia*+ *Woodfordia frutico* Bark powder

Splints – *Madhuca Longifolia*, *Ficus racemosa*, *Ficus religiosa*, *Ficus hispida* ,*Bridelia moonii* *Terminalia arjuna*, *Bambusa vulgaris*, *Dipterocarpus zeylanicus* should be used as splints.

Common medicines used in traditional Sri Lankan medicine

Eleusine indica

Circuma longa

Bridelia retusa

Acoronychia pedunculata

Casearia zeylanica

Syzygium cumini

Lannea coromandelica

Asperagus resimosus

Euphorbia trirucalli

Drynaria quercifolia

Specialty of orthopedic treatments in Ayurveda

- In the initial stage of fracture healing Ayurveda medications help to reduce the inflammation and congestion.

- In the middle stage of fracture healing process, calcium in the medications supports calus formation and consolidation.
- Controlled freedom of mobility prevents muscle wasting and joint stiffness while keeping the fracture site still.
- Less complication

Materials and Methods

Case Report

Patient was a 45 years old Sri Lankan female works as a cashier of a restaurant. In this case, this patient had been faced to a road traffic accident while she is riding a motor bike as a pillion rider and due to sudden hit on a three wheel. As a result of that accident her right sterno-clavicular joint had been dislocated. In the rush she had been admitted to a government hospital. But no exact treatment was made for that and the day after that she came to traditional Ayurveda physician for treatment. The patient and chaperones were questioned by the physician about the accident. After examinations were done, the physician diagnosed that her right sterno-clavicular joint has dislocated.

Treatment Procedure

At first, the traditional physician reassured the patient and tried to relocate the dislocation. Then he applied the special medicated oil in his tradition, and massage that area gently about 10 minutes. After that moving carefully patients' right arm the dislocated the dislocation to the actual position. Then he kept a bandage which is soaked from the oil in the sterno-clavicular joint and cover from *Pisonia grandis* leaves. Then it was kept a cotton pillow on right sterno-clavicular joint and in right axillary area. Then it was bandaged and lashed around the right shoulder joint. After that it was dressed by an arm sling to help the stability of there.

That treatment was limited to two days and after two days undressed the bandages and applied the oil on the right sterno-clavicular joint and shoulder joint. After a light massage, the physician applied the medicated Paste I and covered by cotton and bandaged. That Paste was applied for seven days each every other day.

After seven days, the Paste II was applied for next seven days each every other day after applying oil. After 14 days, patient was applied medicated Milk oil for next seven days each every other day after applying oil.

The formulas used by the traditional physician as follows.

Paste I

Ficus hispida bark and leaves

Pongamia pinnata bark and leaves
Acoronychia peduncula bark and leaves
Symplocos cochinchinensis bark
 Brown rice flour
 Kithul trickle
 Bee's honey
 Seal Arrack
 Preparation method:-grind above barks and leaves and take juice from it.Then mix with other powder formed Brown rice flour.After mixing with Kithul trickle,Bee's honey,Seal arrack cook it until become paste form.

Paste II

Syzygium cumini bark
Careya arborea bark
Bridelia retusa bark
Connarus moncarpus bark
Syzygium aromaticum
Myristica fragranca
 Bee's honey

Seeds of *Entada pusaetha*
 Finger millet powder
 Egg yolk
 Preparation method:- grind above barks and leaves and take juice from it.Then mix with other powder formed Cloves (*Syzygium aromaticum*),Nutmeg (*Myristica fragranca*), Seeds of *Entada pusaetha*, Finger millet powder.After mixing with Bee's honey ,cooked it well.After cooked it ,keep it to cool and mix with egg yolk.

Milk oil

Euphorbia tirucalli
Asperugus resimosaleaves
Croton laccifer leaves
Eleusine indica
Paramignya monophylla
 Preparation method:- grind above barks and leaves and take juice from it.Then mix with coconut milk and brew under sunlight.



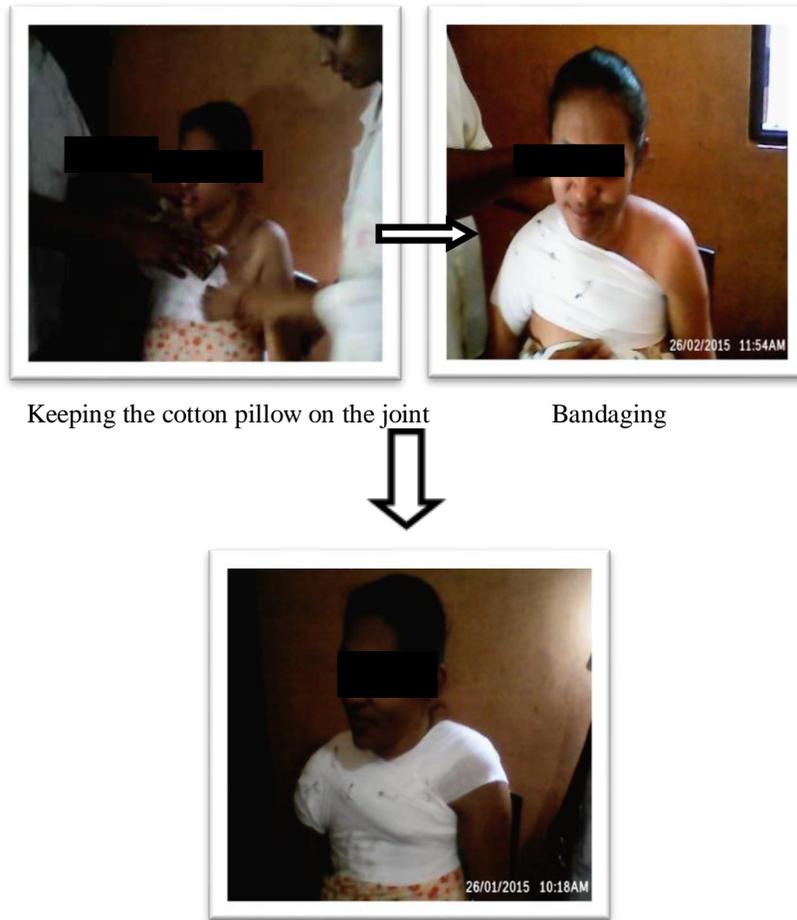
Presentation of the patient

oil application ↓



dressing ↓

application of the Paste



Keeping the cotton pillow on the joint

Bandaging

After bandaging

Results and Discussion

Traumatic sterno-clavicular joint dislocation is an uncommon condition whose diagnosis is often missed. Obstruction of the jugular veins might cause such critical case on this patient, if the patient neglected. The traditional physician follow a treatment procedure ingredientson this patient specified to his tradition.

The patient was in a very difficult condition when she was presented to the physicianfor treatment. After the first treatment, she had got a significant relief. At the end of the first seven days, the moving range of the right shoulder joint had been received a satisfactory increment. Symptoms such as intense pain and

swelling over the injured area were totally vanished after the 21 days segment in the treatment.

The plants used in this therapeutic regimen has some special properties which help to heal the fractures, such as *Vedanasthapana*, *Shothahara*, *Sthambana*, *Balya*, *Thridoshashamaka* and some of them have *Asthisandhanakara* property as *prabhawa*. Most of the drugs have *Katu*, *Thiktha*, *Kashaya* taste and *Laghu*, *Theekshana*, *Snigdha*, *Ruksha* properties. Among the all drugs majority of drugs are in *Ushna veerya*, which have powerful *Vathashamaka* properties.

Medicinal plant	Rasa	Guna	Veerya	Vipaka	Doshakarma	Chemical composition
<i>Kotadimbula (Ficus hispida)</i>	Kashaya Thiktha	Ruksha Laghu Ushna	Sheetha	Katu	Kapha pitta shamaka	Hispidine β - sitsterole

						β - amarine
<i>Magulkaranda</i> (<i>Pongamia pinnata</i>)	Thiktha Katu Kashaya	Laghu Theekshna	Ushna	Katu	Kapha vatha shamaka	Pongamia, Hongoil, Flavans Chalcones terpenes
<i>Ankenda</i> (<i>Acoronochia pedunculata</i>)	Thiktha Kashaya Amla	Ruksha Ushna	Ushna	Katu Amla	Vatha kaphahara	Alpha-pinene, beta caryophyllene
<i>Bombu</i> (<i>Symplocos cochinchensis</i>)	Katu Thiktha Kashaya	Laghu Snigdha	Sheetha	Katu	Kapha vatha shamaka	Arabinoxylan Polysacharide
<i>Madan</i> (<i>Sysigium cumini</i>)	Kashaya Madhura Amla	Laghu Ruksha	Sheetha	Madhura	Kaphapithta shamaka	Betulinic Acid, β - sitsterol, friedelin ester of epifriedelanol fatty acid tannins
<i>Kahata</i> (<i>Careya arborea</i>)	Katu	Ruksha	Ushna	Katu	Vatha kapha shamaka	Lupeol butaline, β - sitsterol Betulinic Acid
<i>Ketakela</i> (<i>Bridelia retusa</i>)	Katu Thiktha Kashaya	Snigdha	Ushna	Katuka	Vatha kaph shamaka	Bisabolave sesquiterpenes
<i>Radaliya</i> (<i>Connarus moncarpus</i>)	Native to Sri Lanka .Not mentioned in ayurvedic books. Having <i>Shothahara</i> , <i>Vedanasthapana</i> , <i>Sandhaneeya</i> , <i>Sthambaka</i> properties					
<i>Nawahandi</i> (<i>Euphorbia tirucalli</i>)	-do-					
<i>Hathawariya</i> (<i>Asperugus resimosa</i>)	Madhura Thiktha	Guru snigdha	Sheetha	Madhura	Vathapitta shamaka	Asparagamine A, Steroidal saponines
<i>Gas keppetiyi</i>	Native to Sri Lanka .Not mentioned in Ayurveda books. Having <i>Shothahara</i> ,					

(<i>Croton laccifer</i>)	<i>Vedanasthapana, Sandhaneeya, Stham baka</i> properties
<i>Belathana</i> (<i>Eleusine indica</i>)	-do-
<i>Vellangiriya</i> (<i>Paramignya monophylla</i>)	-do-

In fracture healing process, hematoma and granulation tissue formation, cartilaginous callus formation, formation of bony callus and cartilaginous remnants and re-modeling of the bone are essential stages. Analyzing the medicinal properties of this regimen majority of medicine has *Madhura* rasa, *Ruksha* –*Laghugunas*, *Katu* vipaka and *Sheetha* veerya properties. *Katu* rasa has anti-inflammatory, antihistaminic, anti-coagulating and anti-septic actions. Where there is a fracture or dislocation, there is an inflammatory condition in that area. Therefore using medicine which have *katu rasa*, above conditions will relieve and improve healing process. It will be increased the nutrition of bone tissue and improve the healing process by using drugs which have *sheeta* veerya.

The role of nutrition in bone healing is the most important factor. Calcium affects bone healing. Therefore Calcium uptake and Calcium absorption has to be increased. Lysine is an amino acid that helps in the absorption of calcium. Vitamin C is essential nutrition to make the collagen that helps the body form healthy bone. It also promotes bone healing. Above treatments give such nutrition to the patient and physician advised the patient to drink herbal gruel of *Psychortia sarmentosa* to promote bone healing [3,4].

Source of Support: Nil

Conflict of Interest: Nil

Conclusion

When considering the ingredients of Paste I, Paste II and Milk oil, their properties and action have affected the improvement of the healing process. Therefore it can be concluded this fracture and dislocation healing regimen of *Katugampala* tradition is successful.

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