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 physicians 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 contain three phases contains 21 days. The plants used in this therapeutic regimen has special properties such as Vedanasthapanas, 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: Vedanasthapanas, Shothahara, Sthambana, Balya, Thridoshashamaka

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 Bhimna 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 practiced 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
Classification of fractures According to Ayurveda

Bhagna

<table>
<thead>
<tr>
<th>Sandhi Muktha</th>
<th>Kaanda Bhagna</th>
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<tr>
<td>(Dislocations)</td>
<td>(Fractures)</td>
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<tr>
<td>Uthpishta</td>
<td>Karkataka</td>
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<td>Vishlihta</td>
<td>Kaanda</td>
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<td>Vivarthitha</td>
<td>Ashva Karna</td>
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<td>Athikshiptha</td>
<td>Choornitha</td>
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<td>Theeryakshiptha</td>
<td>Vakra</td>
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<td>Pichchitha</td>
<td>Chinna</td>
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<td>Ashthijalitha</td>
<td>Paatitha</td>
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<tr>
<td>Majjanugatha</td>
<td>Sputitha</td>
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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) at 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 Panchavalkala (decoction of barks of Ficus benghalensis, Ficus religiosa, Ficus racemosa, Ficus islela, Garcenia 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 viscidia)
Internally – warm cow’s milk + Ghee + Laksha (Lac)
Compound fracture management
According to Susrutha Samhitha
Wash the wound with Panchavalkala decoction + ghee + bee’s honey
Apply paste of Panchavalkala + 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 Longiflia, 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 resimus
Euphorbia trirucalli
Drynaria quercifilia

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 bad 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 threewheel. 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 fortreatment. 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 collocated 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 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
Symphocos cochinensis 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
Syzysigium aromaticum
Myristica fragrence
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 (Syzysigium aromaticum), Nutmeg (Myristica fragrence), 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
Asperagus resimosa leaves
Croton lacifera 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
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 ingredient on this patient specified to his tradition.

The patient was in a very difficult condition when she was presented to the physician for 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.

<table>
<thead>
<tr>
<th>Medicinal plant</th>
<th>Rasa</th>
<th>Guna</th>
<th>Veerya</th>
<th>Vipaka</th>
<th>Doshakarma</th>
<th>Chemical composition</th>
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<tbody>
<tr>
<td>Kotadimbula</td>
<td>Kashaya</td>
<td>Thiktha</td>
<td>Ruksa</td>
<td>Laghu</td>
<td>Ushna</td>
<td>Sheetha</td>
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<tr>
<th>Latvaniya (Pongamia pinnata)</th>
<th>Thiktha</th>
<th>Laghu</th>
<th>Ushna</th>
<th>Katu</th>
<th>Kapha vatha shamaka</th>
<th>Pongamia, Flavans, Chalcones, terpenes</th>
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</thead>
<tbody>
<tr>
<td>Ankenda (Acoronychia pedunculata)</td>
<td>Thiktha</td>
<td>Ruksha</td>
<td>Ushna</td>
<td>Katu</td>
<td>Vatha</td>
<td>Alpha-pinene, beta caryophyllene</td>
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<td>Bombo (Symplacocochinensis)</td>
<td>Katu</td>
<td>Laghu</td>
<td>Sheetha</td>
<td>Katu</td>
<td>Kapha vatha shamaka</td>
<td>Arabinosylan, Polysacharide</td>
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<tr>
<td>Madan (Sysigium cuminii)</td>
<td>Kashaya</td>
<td>Laghu</td>
<td>Sheetha</td>
<td>Madhura</td>
<td>Kaphapiththa shamaka</td>
<td>Betulinic Acid, β-sitosterol, friedelin ester of epifriedelanol fatty acid tannins</td>
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<td>Kahata (Careya arborea)</td>
<td>Katu</td>
<td>Ruksha</td>
<td>Ushna</td>
<td>Katu</td>
<td>Vatha kapha shamaka</td>
<td>Lupeol butaline, β-sitsterol Betulinic Acid</td>
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<td>Ketakeela (Bridelia retusa)</td>
<td>Katu</td>
<td>Snigdha</td>
<td>Ushna</td>
<td>Katuka</td>
<td>Vatha kapha shamaka</td>
<td>Bisabolave sesquiterpenes</td>
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<td>Radaliya (Connarus moncarpus)</td>
<td>Native to Sri Lanka, Not mentioned in Ayurvedic books. Having Shothahara, Vedanasthapana, Sandhaneya, Sthambakaproperties</td>
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<td>Nawahandi (Euphorbia tirucalli)</td>
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<td>Hathawariya (Asperagus resimosa)</td>
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<td>Guru</td>
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<td>Madhura</td>
<td>Vathapitta shamaka</td>
<td>Asparagamine A, Steroidal saponines</td>
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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 –Laghuna, 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 is 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 gives such nutrition to the patient and physician advised the patient to drink herbal gruel of Psychotria sarmentosa to promote bone healing[3,4].

**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.

**References**


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**Conflict of Interest:** Nil