

Local Therapeutic Approach in Managing Parshuka Bhagna with Emphasis on Rib Fracture- A case report

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ABSTRACT:

Background:

Rib fractures, medically termed as *Parshuka Bhagna* rib fractures are a common injury that can arise from a variety of traumas, including falls, car accidents, and blunt force impacts. Due to poor ventilation and splinting, patients with these fractures may have substantial discomfort, reduced respiratory function, and consequences like pneumonia or atelectasis. To reduce pain, patients may choose to avoid deep breathing. Physical therapy, pain management, and, in extreme circumstances, surgery are examples of conventional treatments. Analgesics, rest, and supportive measures are frequently used in modern medicine to manage rib fractures in order to guarantee proper breathing and prevent pulmonary problems. These methods may, however, occasionally be constrained by adverse effects and the possibility of insufficient pain management, which may result in chronic pain and other problems. Ayurveda, the ancient Indian system of medicine, offers a holistic approach to the management of bone injuries, including rib fractures. Ayurvedic treatments emphasize natural healing processes through the use of herbal remedies, dietary modifications, and specific physical therapies. This approach not only aims to relieve pain and promote healing but also seeks to restore the overall balance of the body.

Purpose:

The study's primary priority is to effectively manage a rib fracture with the aid of local remedies described in the *Sushruta Samhita*.

Observation and conclusion:

Patient had significant relief in pain within three days and at the end of treatment had complete relief from symptoms with no pain and crepitus.

Keywords: *Bhagna, Parshuka asthi, Parshuka asthi Bhagna Chikitsa*, rib fracture, rib splint.

INTRODUCTION:

The primordial medicine system, Ayurveda, includes a wide range of specialist domains that can treat major ailments in addition to the fundamental prevention and management of diseases. One such domain that deals with substantial injury to the musculoskeletal system is *Asthibhagna* (Fractures)¹.

The injury to body leads many problematic conditions and bony fracture is one of them. Ayurveda described fracture as *Bhagna* which may occurs due to the slipping, high pressure, sudden jerk, falling from height and other types of physical injury or trauma, etc.² The injury to the bony portion leads *Kanda Bhagna* while injury to the joints termed as *Sandhi Bhagna*.³ The term *Asandhighata* also used for denoting injury to the tissues other than joints. The *Bhagna* not only affects bones but also affects muscles, ligaments and joints, etc.

Asthi (bones) are regarded as the body's most significant structural support system; hence *Bhagna chikitsa* is vital in retrieving this system's capacity for function.

The treatment of fracture based upon the three fundamental principles which are as follows:⁴

- *Bhagna Sthapana*: (Reduction in severity)
- *Bhagna Sthirikara* : (Immobilization; restriction in movement)
- *Punaha cheshta prasara* : (Rehabilitation)

Bhagna Sthapana can be done by placing bone on its original anatomical position using *Kavalikaa* and *Kushikaa* along with *Ghritha*. The bone should be stabilized to restrict further displacement and allow bone for reunion.⁵ The *Chikitsa* of *Bhagna* utilizes various approaches.

In Ayurveda, *Parshuka Bhagna* is understood within the broader context of bone injuries, with treatments designed to address both the physical and energetic aspects of healing. Key components of the Ayurvedic approach include: ***Lepana (local application)***: The application of medicinal plant-based pastes directly to the affected area to reduce inflammation, alleviates pain, and promote healing. Common ingredients include turmeric (*Curcuma longa*) for its anti-inflammatory properties, ginger (*Zingiber officinale*) for pain relief, and other herbs known for their bone-healing benefits. *Manjishtha* (*Rubia cordifolia*), *Raktachandana* (*Pterocarpus santalinus*), *Shatadhauta Ghritha and Mulethi* (*Glycyrrhiza glabra*), etc.⁶ ***Bandhana*** means bandaging or plaster that can be changed after some days. The composition of plaster material generally depends upon the *doshas* involvement at the fractured site. *Bandha* should be optimum which means it should not be too loose or too tight. The *Bandhana* helps to cure *Shopha* (edema), *Ruk* (pain) and *Paaka* (pus), etc. at the site of injury.⁷ ***Parisechana*** means showering the decoctions over the *bhagna* site. *Panchamoolee Ksheera*, *Sukhoshna Chakrataila* along with *vata* pacifying drugs can also be used. ***Pradeha*** means application of viscid ointment over the affected area. ***Medicated Oils (Taila)***: Oils infused with medicinal herbs are used for gentle massage over the affected area.

These oils penetrate the skin, providing localized pain relief and reducing muscle tension, which can help improve breathing and prevent splinting.⁸ **Breathing Exercises (*Pranayama*):** Specific breathing techniques are taught to enhance lung capacity and ensure proper oxygenation, while also minimizing the risk of complications like pneumonia. These exercises help maintain respiratory function without exacerbating pain. **Dietary Recommendations:** Nutritional guidance is provided to support bone healing. Foods rich in calcium, magnesium, and other essential nutrients are recommended, along with herbal supplements that promote bone strength and overall recovery. According to the modern medicine, treatment of fracture can be divided into three phases. During the first phase, movement of part is restricted by splinting, ice therapy, compression and elevation. This helps in reducing the movement of the fractured part, swelling and pain. Second phase starts with the reduction and immobilization. Third phase emphasizes on the rehabilitation of fractured part through various exercises. But, rib fracture needs conservative management like cold fomentation, rest, oral analgesics and splint. This case report will explore how these Ayurvedic treatments were applied to a patient with rib fractures, detailing the specific methods used and the outcomes observed, with a particular focus on preventing splinting and promoting holistic recovery. So, later on after more clinical studies this regimen can be adapted as regular treatment regime in the acute phase of disease and rehabilitation of desired body part without any adverse effects.⁹

AIM:

To evaluate the efficacy of therapeutic regimen that includes local and internal treatment as mentioned by *Acharya Sushruta* in the management of *Parshuka Bhagna* w.s.r. to Rib fracture.

OBJECTIVES:

- To relieve pain while coughing.
- To restore the normal breathing.
- To reduce tenderness.

A CASE REPORT:

Present case report reveals an elderly male patient of 70 years of age, who had history of fall from bicycle 7 days ago.

Patient was complaining of pain while coughing and swelling at right side of chest with shallow breathing. He is diagnosed with rib fracture for which he was using rib splint with NSAIDS. Following treatment did not proved to be much satisfying as his complaints are not relieved.

History of present illness:

Patient was completely fine 7days ago. Then he met with an accident causing pain and swelling at right on chest. He got advised X-ray chest which revealed 5th rib fracture. With no relief from rib splint and oral medications, he has visited our *Shalya Tantra* OPD for further treatment.

History of past illness:

No history of any chronic illness previously.

Personal history: No addiction & allergy with normal appetite, sleep and bowel movements.

Table 1: *Atura bala pramana parikshana* (Examination of strength of patient)

<i>Prakriti</i> (Body constitution)	<i>Vatapittaj</i>
<i>Sara</i> (Tissue quality)	Mild
<i>Samhanana</i> (body built)	Mild
<i>Pramana</i> (anthropometry)	weight- 52kgs, height- 167cms
<i>Satmya</i> (adaptability)	Average
<i>Satva</i> (mental strength)	Average
<i>Aharashakti</i> (food intake and digestion capacity)	Average
<i>Vyayamashakti</i> (exercise capacity)	Mild
<i>Vaya</i> (age)	Old
<i>Desha</i> (habitat)	Temperate region

EXAMINATION OF CHEST WALL:**Inspection:**

Mild swelling over 5th rib noted.

Erythema present.

No bruising noted.

Palpation:

Severe Tenderness present.

Crepitation present.

Table 2: Assessment of objective parameter:¹⁰

Sr. No.	Observation Parameter	Gradation
1.	Swelling	Grade 1 (Swelling present)
2.	Pain (VAS Scale)	8/10
3.	Tenderness	Grade 3(Tenderness on withdrawal)
4.	Crepitation	Grade 1 (crepitation present)

Table 3: Assessment gradation:¹⁰

Sr. No	Observation	Parameter	Gradation
1.	Swelling	Swelling absent	Grade 0
		Swelling present	Grade 1
2.	Pain (VAS Scale)	According to score marked by patient	0-10
3.	Tenderness	No tenderness	Grade 0
		Tenderness to palpation without grimace	Grade 1
		Tenderness to palpation with grimace	Grade 2
		Tenderness on withdrawal	Grade 3
		Withdrawal to noxious stimuli	Grade 4
4.	Crepitation	Crepitation absent	Grade 0
		Crepitation present	Grade 1

RADIOLOGICAL INVESTIGATIONS:

- **Chest X-ray reveals:** fracture of 5th rib on lateral side.

**Figure 1: Rib fracture seen in X-ray Chest (Before treatment).****THERAPEUTIC REGIMEN:**

Concerned research presents a combination internal and local treatment for *Parshuka bhagna* (rib fracture) that includes:

Table 5: Local treatment regimen.¹¹

Sr. No.	Therapeutic Focus	Duration
1.	Active Management <i>Parisheka</i> (showering) with cold water. <i>Haridradi lepa</i> (local application) <i>Kusha-bandhana</i> (rib fix splint).	3 days
2.	Subsequent Management <i>Parisheka</i> (showering) with warm <i>Lakshadi Tailam</i> . <i>Kusha-bandhana</i> (rib fix splint).	For next 14 days.
3.	Advice: No exertional work	For 3 months

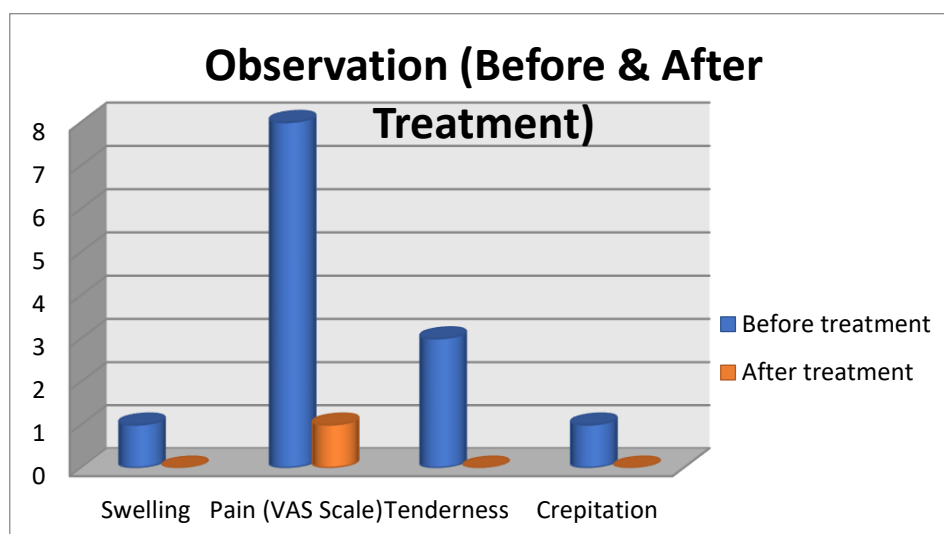
OBSERVATION & RESULT

After three days: Patient got significant relief in pain; tenderness has reduced to significant level, with no swelling or bruising seen.

At the end of treatment (18th Day): Complete relief from pain, swelling, tenderness and crepitation.

Table 6: Observation (Before and after treatment)

Sr. No.	Observation Parameter	Gradation(Before treatment)	Gradation(After treatment)
1.	Swelling	Grade 1 (Swelling present)	Grade 0 (Swelling absent)
2.	Pain (VAS Scale)	8/10	1/10
3.	Tenderness	Grade 3 (Tenderness on withdrawal)	Grade 0 (No tenderness)
4.	Crepitation	Grade 1 (crepitation present)	Grade 0 (crepitation absent)



Graph 1: Graphical representation of observation (before and after treatment)

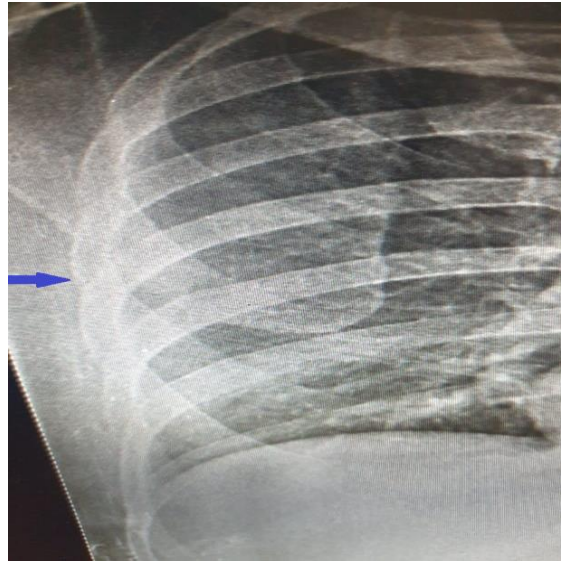


Figure 2: X-ray chest determining healed rib fracture (After treatment)

DISCUSSION:

Bhagna is very well described by *Acharya* Sushruta with its symptoms, types, diagnosis, treatment protocols and fracture healing signs in his classical text.¹²

The concept behind use of *sheeta parisheka* is to help vasoconstriction that further prevents swelling along with relief from pain, bruising and is carried out for 3 days so as to avoid the stage of haematoma during fracture healing.¹³

Furthermore, *bandha* (splint) helps to restrict the joint movement thus preventing in further progression of fracture, damage to skin, soft tissues, neurovascular components nearby and relief from pain.¹⁴

The theory behind employing *Sheeta parisheka* is to support vasoconstriction, which further inhibits swelling along with providing relief from pain and bruises, is to get past the stage of haematoma during fracture healing.¹⁶

Lepa application of medicinal plant-based pastes directly to the affected area to reduce inflammation, alleviates pain, and promote healing.¹⁵ Common ingredients include turmeric (*Curcuma longa*) for its anti-inflammatory properties, ginger (*Zingiber officinale*) for pain relief, and other herbs known for their bone-healing benefits.¹⁷

Haridradi lepa contains *haridra* (*Curcuma longa*), *Daruharidra* (*Berberis aristate*), *prishnaparni* (*Uraria picta*), *kutajbeej* (*Holarrhena antidysentrica*) and *mulethi* (*Glycyrrhiza glabra*). These drugs shows anti-inflammatory, anti-bacterial, *rasayan* (rejuvenating), astringent properties which helps the fracture to heal quickly as well as reduces chances of bruising.¹⁷

Ushna parisheka significantly enhances the phases of bone remoulding and the development of soft, bony callus during fracture healing when combined with warm *Lakshadi taila*.¹⁸ Warm *Lakshadi tail* has pain relieving qualities and is used to improve vascularization, limiting muscle wasting and joint stiffness due to factors like *Bruhan*, *Prinan*, *Sandhan* and *Mamsasrairyra*.¹⁹

Main ingredients in *Lakshadi* oil are *Laksha* (*Laccifer lacca*), Sesame (*Sesamum indicum*), Licorice (*Glycyrrhiza glabra*), *Shatavari* (*Asparagus racemosus*), *Haridra* (*Curcuma longa*), *Daruharidra* (*Berberis aristate*), *Raktachandan* (*Pterocarpus santalinus*), *Ashwagandha* (*Withania somnifera*) etc. These ingredients have anti-inflammatory, analgesic, hemostatic, rejuvenating, wound healing and fracture healing properties.²⁰ *Ushna parisheka* with warm *Lakshadi* oil helps in remodelling of tissue and bone structure which promotes fracture healing. Oils infused with these herbs are used for gentle massage over the affected area. This oil penetrates the skin, providing localized analgesia and reducing muscle tension, which can help improve breathing and prevent splinting.²¹

CONCLUSION:

Based on the clinical observations, it can be concluded that *Acharya* Sushruta's holistic approach to treating *Parshuka bhagna* (rib fracture) produces notable results by relieving pain, reducing swelling and tenderness with no crepitation within 18 days of the trauma. No adverse effects were observed, and it is the best since it is simple to perform, prevents hematoma formation, swelling and consequences & also is cost-effective.

FURTHER SCOPE OF STUDY:

- Futuristic clinical trial with more sample size is though needed to gain confirmatory outcomes.
- Active management of fracture without adverse effects.
- This treatment modality can be applied on various types of fractures along with those occurring in geriatric and paediatric age group where surgery is not possible.
- Avoidance of surgery in simple fractures can be more affordable in terms of financial concerns in low-income groups.

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