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**SPECULATIVE STUDY OF ASTHIBHAGNA WITH REGARDS TO FRACTURE IN
MODERN SCIENCE**

PATEL V¹, BABAR SC², SHINDE AK³, KUMAR J⁴ AND SIRDHYAL A⁵

1 & 4: P.G Scholar, Department of Shalya Tantra, Dr. D. Y. Patil College of Ayurved and Research Centre Pimpri, Dr. D. Y. Patil Vidyapeeth, Pune 411018 (Deemed To Be University)

2: HOD and Professor, Department of Shalya Tantra, Dr. D. Y. Patil College of Ayurved and Research Centre Pimpri, Dr. D. Y. Patil Vidyapeeth, Pune 411018 (Deemed To Be University)

3: Asso. Professor, Department of Shalya Tantra, Dr. D. Y. Patil College of Ayurved and Research Centre Pimpri, Dr. D. Y. Patil Vidyapeeth, Pune 411018 (Deemed To Be University)

5: P.G Scholar, Department of Swasthavritta and Yoga, Dr. D. Y. Patil College of Ayurved and Research Centre Pimpri, Dr. D. Y. Patil Vidyapeeth, Pune 411018 (Deemed To Be University)

***Corresponding Author: Dr. Vinod Patel: E Mail: vinodp172@gmail.com**

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ABSTRACT

Ayurveda is not merely a system of medicine in the conventional sense of curing disease. It also teaches us how to safeguard and preserve our bodily and mental health so that we can live a long life. Ayurveda's main philosophy is that prevention is always preferable to cure. There are numerous distinctive and significant notions in ayurveda. The fundamental eight disciplines of Ayurveda, including Ashtanga, Shalya Tantra, Yantra, Shastra, etc., all contain information on Shalya Chikitsa. These days, modern science is concerned with matters relating to surgery. The Shalya Chikitsa of Ayurveda describes a number of original ideas. In which one of the concepts is Bhagna or Asthibhagna. It's Nidana, Chikitsa its preventive all are fully discussed in the Ayurveda science. In modern science, Asthibhagna is associated with the Fracture. A fracture is the breaking of a bone, typically. Fractures frequently result from accidents, falls, injuries, etc.

Keywords: *Asthibhagna, Fracture, Ayurveda, Yantra, Shastra*

INTRODUCTION:

The fundamental goals of Ayurveda are to keep healthy individuals in healthy condition while also curing those who are ill and eliminating diseased conditions, i.e., curing the ill while also preventing sickness and eliminating diseased conditions in healthy individuals [1]. One of the most significant forms of Ashtanga Ayurveda [2] is Shalya Tantra. There are several original Ayurvedic notions that are discussed in Shalya Chikitsa, among which Asthibhagna is one.

The words "Asthibhagna" are made up of the letters "Bhanj" and "Katu." Which implies the break or discontinuation of the bone. In Nidana sthana and Chikitsa sthana, Acharya Sushruta described various bones, fractures, classification, and therapy. Sushruta Samhita, Ashtanga Sangraha, Madhava Nidana, Yogaratnakara, and Harita Samhita all make reference to the categorisation of Bhagna.

One of the vital bodily parts is the *asthi dhatu*. According to *Ayurveda*, *Vata dosha* and *Asthi Dhatu* [3] have an *Ashrayashrayi* relationship. "Orthopedics" is the name of the branch that deals with bone-related abnormalities. In *Ayurveda*, treating trauma is known as "*Bhagna Chikitsa*." Bone fractures are associated with *asthibhagna*. A full break in the continuity of a bone, an incomplete break, or a crack are all

considered fractures [4]. A joint dislocates when all of its articular surfaces are moved away from another joint.

Nidana [Etiology] of Asthibhagna [5]:

- *Patana* [Falling from height, slipping, sudden jerk etc.]
- *Pidana* [Heating, Beating etc]
- *Prahara* with wood or weapon
- *Dashana* [Attack / Bite] by – *Vyala*, *Mruga* etc.
- *Abhighata* [Trauma]
- Fracture due to trauma or sudden injuries
- Pathological or stress fracture

These are the key etiological elements that contribute to the emergence of fractures or *Bhagna* in the body. *Nidana* are crucial for assessing the seriousness of an injury.

Classification of Bhagna [6]:

The Bhagna is divided into the following two categories by Acharya Sushruta:

- A. *Sandhimukta* (Dislocation)
- B. *Kandabhagna* (Fracture)

Sandhimukta is nothing but Sandhi bhagna; which signifies dislocation of joints or articular surfaces. Any injury to the joint's bony region is referred to as a "Kandabhagna." These two types of Bhagna have been further divided into subtypes, with Sandhimukta having six and Kandabhagna having twelve.

<i>Sandhinukta</i> types [7]	<i>Kandabhagna</i> types [8]
<p>6 types:</p> <ul style="list-style-type: none"> ➤ <i>Utpishita</i>- Dislocation of fractured area ➤ <i>Vishlishita</i> - Subluxation ➤ <i>Vivartita</i> - Lateral displacement ➤ <i>Avakshipta</i> - Dislocation of joint in downward direction ➤ <i>Atikshipta</i> - Dislocation with over-riding ➤ <i>Tiryakshipta</i> - Dislocation with lateral displacement. 	<p>12 types:</p> <ul style="list-style-type: none"> ➤ <i>Karkatam</i>- Fracture of Hematoma ➤ <i>Ashvakarna</i> - Fracture part of bone projected like hoarse ear ➤ <i>Churnitam</i> - Comminuted fracture ➤ <i>Picchitam</i> - Compression fracture, where bone gets crushed & becomes flattened ➤ <i>Asthicchallitam</i> - Injury in 1 part of bone gets lowered and other is avulsed. ➤ <i>Kandabhagna</i>: Transvers fracture ➤ <i>Majjanugatam</i> - Impacted fracture ➤ <i>Atipatitam</i> - Compound fracture ➤ <i>Vakram</i> - Green stick fracture ➤ <i>Chinnam</i> - Incomplete fracture ➤ <i>Patitam</i> - Bone gets in small cracks with pain ➤ <i>Sphutitam</i> - Fissured fracture

Clinical and Diagnostic features of *Bhagna*

as per *Acharya Sushruta* [9]:

- *Shavayathu Bahulyam* (Local swelling)
- *Spandana Vivartana*
- *Sparshasahishnutva* (Local tenderness over the bone)
- *Avapidyamane Shabda* (Crepitus)
- *Strastangata* (Visible deformity)
- *Vividha vedana pradurbhava* (various types of pains)
- *Sarvasu avasthasu na sharmalabha* (Marked impairment of functions)

Classification of Fracture according to the modern science:

- A. Closed fracture / Simple fracture
Open fracture / Compound fracture
- B. Fractures caused by sudden injuries –
Direct violence / Indirect violence
or Stress fracture

Pathological fracture

- C. External compound & Internal compound
- D. Based on Pattern: Transverse fracture, Oblique fracture, Comminuted fracture, Spiral fracture, Compression fracture, Greenstick fracture, Impacted fracture.

Management of *Bhagna* according to *Acharya Sushruta* [10]:

Ayurveda describes the treatment of *Bhagna* (fracture) in a manner that is remarkably similar to contemporary orthopaedics. The words of *Acharya Susruta* are:

- (1) *Kusaa bandhanam* in place of plaster of paris castings.
- (2) Strapping, bandaging and splintage in the name of *bandhana*
- (3) *Vedana hara dravyas*: Analgesics
- (4) *Keela bandhana* - on the lines of external nailing, reduction in the name of *unnamana*,

Avapeedana, Aanchana, Vartana, Sthaapana etc. Minor operations for the *bhagnas* of *nakhasandhi, angulee sandhi, paarsva sandhi* etc.

He has also described passive and active physiotherapies, like

Mruta pinda dharana, paashaana dharana (Activation of wrist and palmar muscles by holding round stones and clay balls.

Ayurveda describes the treatment of *bhagna* (fracture) in a manner that is remarkably similar to contemporary orthopaedics. The words of *Acharya Susruta* are He has showed *kapaata Sayana*, which is analogous to a Thomas splint etc. for lower limb fractures, and has defined a particular sort of *Vastra patta bandhana* (casting with a dense fabric component for immobilisation) for several of the *bhagnas*.

Some of the methods he demonstrated for the reduction and correction of fractures appear to be crude and horrifying because there were no measures for anaesthesia and muscle relaxation, but we can defend the methods at the time as being quite appropriate for those times, or perhaps there were some anaesthetics in use that are not mentioned in the texts of *Ayurveda* that are currently available. However, phrases like "*moha choorna, Madyena Mohayitva,*" etc., are occasionally found to suggest that

anaesthesia was used even in the time of *Acharya Susruta*. Some of the miraculous cures mentioned in *Susruta's* writings. The distinctive contributions of *Ayurveda* include *vagbhata* and Kerala therapies. They appear as *lepas, ghrutaas, and tailas* (like *muruvenna*). *Vastikarma, Gandha Taila, etc.*

Acharya Sushruta provided numerous examples of how to handle a bhagna, including the use of bandhas and Aahara-Vihara.

➤ **Reduction:**

- a. *Anchana*
- b. *Pidana*
- c. *Sankshepana*

➤ **Retension:**

- a. *Bandhana* – ex. *Madhuka, Udumbara, Ashwattha, Palash, Kakubha, etc.*
- b. *Kapatashayana*
- c. *Taila droni*

➤ **Rehabilitation:**

- *Mritha, Lavana, Pashana dharana, Vyayama, etc.*

➤ **Aalepana:** It is done with the help of *Manjishtha, Madhuka, Raktachandana, Shatadhauta, Shali pishta, etc.*

➤ **Parisheka:** It is done with the *Kwatha* of *Nyagrodhadi gana dravya*

or *Laghupanchmoola siddha dugdha* or *Koshna Chakrataila*.

- *Pratisarana* with - *Madhu & Ghrita*
- If *Bhagna* caused by *Abhighata* then – *Ghrita vastra* can be applied over it.

Management of *Asthibhagna*: According to Modern Aspects

Adjusting the shattered portion of the bone is the first step in fracture treatment. By applying treatments like *Peedana*, *Bandhana*, etc., *Asthi*, or a bone that has been lowered, moved away from, or elevated, is returned to its original position. The three R's principle, which is dependent on how the fracture is managed, is as follows.;

- **Reduction** – it includes closed reduction and open reduction
- **Retension** – Gravity, Traction, Plaster cast or slab, Internal fixation
- **Rehabilitation** – Exercises, Physiotherapy

Pathyas And *Apathyas* in *Bhagna*:

PATHYAS:

"*Saalirmamsa rasah ksheeram sarpiryooshah sateenajah Brumhanum chaannapanam cha deyam bhagnaya jaanata*".

- (1) *Saalyannam* (old unpolished rice)
- (2) *Maamsa Ras* (Mutton soup)
- (3) *Majja* (Marrow soup)

(4) *Ksheera*, (Milk) especially of *grishti* (i.e. a cow with its eldest calf alive)

(5) *Ghrita Ghee*

(6) *Yoosha*- dal soup. Preferably of *satinas* – *Batanees*

(7) *Brimhana aaharas*- nutrient and delicious foods. *Brimhana paaneeyas* = milk, tomato soup, protein rich drinks, etc. These are the *pathyas* in *bhagna* which promote fast healing.

APATHYAS:

"*Lavanam katukam kshaaram amlam, maidhuna, maatapam Vyaayamamcha naseveta bhagno rookshaanna mevacha*"

Lavana Kshaara: Excessive use of salt, *Katurasa*, *amla rasa*: Excessive use of pungent, strong, spicy, and *Maidhuna* fermented substances. Excessive sexual indulgence. *Aatapa*: Exposure to sun heat: Excessive exertion. *Vyaayama Rookshaahara*:

CONCLUSION:

One of the most significant concepts in *Ayurveda* is *asthibhagna*. There is also a description of fracture that is comparable to that found in modern science. Different ideas on the *Asthibhagna*, *Bhagna*, its *Chikitsa*, *Nidana*, etc. have been mentioned in *Ayurveda*. *Asthibhagna* has distinguished

between two main types: *Sandhimukta* and *Kandabhagna*. The traumatic injuries to the musculoskeletal system have been given the form of *Bhagna* by *Acharya Sushruta*. Both in *Ayurveda* and modern science, the *Lakshanas* are crucial for determining *Bhagna*. Reduction, Immobilization, & Rehabilitation is the primary focus of *Asthibhagna* management. Thus, it can be said that the *Asthibhagna* idea is a key element of *Ayurveda*, which describes a variety of therapeutic modalities.

REFERENCES:

- [1] Chakrapani, Charaka Samhita by Agnivesa, edited by Vaidya Jadavaji Trikamji Acharya, Sutrasthana, adhyaya 30th, Shlok no. 26, Chaukhamba Publications, New Delhi, Reprint 2017, 187.
- [2] Vagbhatta, Dr. Brahmanand Tripathi, Ashtanga Hridaya, Sutrasthana, adhyaya 1st, Shlok no.5, Chaukhamba Sanskrit Pratishthana, Delhi, Reprint 2014, 5.
- [3] Vagbhatta, Dr. Brahmanand Tripathi, Ashtanga Hridaya, Sutrasthana, adhyaya 11th, Shlok no.26, Chaukhamba Sanskrit Pratishthana, Delhi, Reprint 2014, 165.
- [4] S. Das, Textbook of Clinical surgery, Chapter 12th, 13, 10th edition, old complex court, Kolakata, 2013, 173-174.
- [5] Sushruta, Kaviraj Ambika datta Shastri, Sushruta Samhita, Nidana sthana, adhyaya 15th, Shlok no.3, Vol.1, Chaukhamba Sanskrit Sansthana, Varanasi, Reprint 2015, 377.
- [6] Sushruta, Kaviraj Ambika datta Shastri, Sushruta Samhita, Nidana sthana, adhyaya 15th, Shlok no.4, Vol.1, Chaukhamba Sanskrit Sansthana, Varanasi, Reprint 2015, 377.
- [7] Sushruta, Kaviraj Ambika datta Shastri, Sushruta Samhita, Nidana sthana, adhyaya 15th, Shlok no.5, Vol.1, Chaukhamba Sanskrit Sansthana, Varanasi, Reprint 2015, 377.
- [8] Sushruta, Kaviraj Ambika datta Shastri, Sushruta Samhita, Nidana sthana, adhyaya 15th, Shlok no.8, Vol.1, Chaukhamba Sanskrit Sansthana, Varanasi, Reprint 2015, 378.
- [9] Sushruta, Kaviraj Ambika datta Shastri, Sushruta Samhita, Nidana sthana, adhyaya 15th, Shlok no.8, Vol.1, Chaukhamba Sanskrit Sansthana, Varanasi, Reprint 2015, 378-379.
- [10] Sushruta, Kaviraj Ambika datta Shastri, Sushruta Samhita, Chikitsa sthana, adhyaya 3rd, Vol.1, Chaukhamba Sanskrit Sansthana, Varanasi, Reprint 2015, 27-33.