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Efficacy of Ayurvedic Treatment in Management of *Bhagna* (Callus Formation in Non-Unified Bone) - A Single Case Study

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ABSTRACT

INTRODUCTION: *Ayurveda* is a science of life. It has its effect on every aspects of life like in healthy state or in diseased state. *Acharya Sushruta* has described various important principles for the treatment of *Bhagna* and those principles are adopted now days as such. In this case report single case was presented having complete fracture of shaft of left femur where around 2 inches bony part has been removed because of osteomyelitis. *Laksha* is good for bone healing/ formation. So for bone formation purpose *Lakshadi Guggul* along with other herbal medicines and *PanchaTikta KshirBasti* had been given to the patient.

AIMS AND OBJECTIVE: To study the effect of *Ayurvedic* medicine in formation of non-healing bone.

MATERIAL AND METHOD: Case report form and *Ayurvedic* textbooks.

OBSERVATION AND RESULT: Signs of bone formation seen in X-ray of Left femur shaft.

DISCUSSION: *Lakshadi Guggul* and *PanchaTikta KshiraBasti* helps in the formation of bone.

CONCLUSION: *Ayurvedic* medicine certainly helps in bone healing

KEYWORDS

Ayurveda, Bhagna, Lakshadi Guggul, PanchaTikta kshir basti



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INTRODUCTION

Ayurveda is a science of life which has its effects on every aspect of life like in healthy or in diseased state. *Ayurveda* does not limit itself to just fulfilling the needs of healthy life, but also it reaches out to some specialised areas. One of these areas is *Bhagna Chikitsa*. In today's era we have many modern instruments to diagnose fracture like Roentgenography. Though in ancient era, *Acharya Sushruta* has described various important principles of the treatment of *Bhagna* and those are adopted now days as such¹. He has mentioned *Bhagna* in *Sushrut samhita* Nidan sthana and *Chikitsa* Sthana from the view of surgical management including various types of *Lepas, bandhas*, slings etc. He has mentioned 12 types of *Kand Bhagna* (fractures) and 6 types of *Sandhimukt* (Dislocation and subluxation) which touches every kind of fracture².

In this case report a single case is presented having complete fracture of shaft of left femur where around 3 inches of bony part is removed because it got infected (osteomyelitis) after repeated 5-6 surgeries post RTA, where *Lakshadi Guggula* along with other internal medicines and *Pancha Tikta Ksheera Basti* are given to the patient for healing of the bone.

Laksha is indicated in the management of *Bhagna* as internal medicine in various texts. That is why *Lakshadi Guggula* is mainly used in the management of *Bhagna*. It contains mainly six contents as described in *Bhaishaya Ratnavali*³, *Yogaratnakar*⁴ and *Chakradatta*⁵ under the *Bhagnadhikar* and these are *Laksha* (*Laccifer lacca*), *Asthishrunkhala* (*Cissus quadrangularis*), *Arjuna* (*Terminalis arjuna*), *Nagabala* (*Grevia hirsuta*), *Ashwagandha* (*Withania somnifera*) and *Shuddha Guggula* (*Commiphora mukul*).

Also in case of *Bhagna* there is major vitiation of *Vata Dosha* and *Asthivaha strotas Dushti* and in this case there is complete local *Asthidhatukshaya* or loss of bone healing process of shaft of femur. Treatment of *Asthivaha strotas Dushti* recommended by *Acharya Charaka* and *Vagbhata*, the use of *Basti* prepared with the *Tikta Dravya, Ksheera, Ghrita* along with the use of *Snehana* and *Swedana*.^{6,7}

AIMS

To study the effect of Ayurvedic medicine in the healing of non-unified bone.

OBJECTIVES

To study the efficacy of *Lakshadi Guggul* and *Panchatiktka KsheeraBasti* in bone healing.



MATERIALS AND METHODS

Case report form and various Ayurvedic as well as Modern Textbooks of medicine.

CASE REPORT FORM

A 39 year old male patient came to us with chief complaints of

- 1) Right knee joint pain
 - 2) Right hip joint pain
 - 3) Difficulty in flexion of right knee joint
 - 4) Difficulty in squatting position
 - 5) Walking with support
 - 6) Oedema in both knee joints and forelegs
- All these complaints are since last 2 years.

HISTORY OF PRESENT ILLNESS-

A 39 year old patient is resident of *Sadharan desha* was well before June 2017. Then he had been involved in RTA on June 2017 and got complete fracture of right femur at shaft. He was operated for the same. There was history of back out of the distal bolts which was complication of earlier surgery. His wounds should had healed by primary union, but it hadnt. He had been undergone six surgeries for nailing and plating and removal of infected bone (osteomilitis) which was complication of earlier surgeries, in the period of 2 years in 2 different hospitals. He had been brought to the hospital with the history of having severe pain in right lower limb, especially at right hip and right knee joint

and having difficulty in flexion of right knee joint. He was walking with support. He has x-ray showing non unified right femur shaft. He took allopathic treatment for the same but got no relief, hence for further treatment patient decided to take Ayurvedic management and came to the hospital on February 2019.

HISTORY OF PAST ILLNESS-

No H/O Diabetes mellitus, Hypertension
No H/O Malaria, Jaundice, Dengue
H/O blood transfusion

FAMILY HISTORY-

Patient's mother, father and daughters does not have any kind of major illness.

PERSONAL HISTORY-

Occupation- office work
Bad habits- tobacco consumption

ON EXAMINATION-

- 1) General condition of patient is moderate.
- 2) Pulse rate- 80/min
- 3) Blood pressure- 120/80 mmHg
- 4) No signs of pallor, cyanosis and clubbing
- 5) Weight on admission- 70kg
- 6) RS- air entry bilaterally equal, No crepitation or wheezing sound present
- 7) CVS- S1S2 Normal
- 8) CNS- conscious, oriented place, time, person
- 9) Local examination- (shaft of femur) No signs of tenderness, temperature or swelling



STROTAS DUSHTI- *Asthivaha strotas,*
Majjavah strotas

INVESTIGATIONS-

- 1) X ray of shaft of right femur
- 2) Angle of flexion of right knee by goniometer

TREATMENT PLAN-

1) *Lakshadi Guggul* 10 gm

Calcipral tablets 30 tabs

Kukkutandatwaka Bhasma 10 gm

Aamalaki Rasayana 50 gm

Mixed together and divided into 42 equal parts in the dose of 1 part (approx. 1.9 gm) B.D.

2) *Asthiposhak vati* 2-2-2

3) Local *Snehanaa* and *Swedana* at Right knee joint

4) *PanchaTikta KsheeraBasti* 120 ml OD
2 cycles of 16 *Basti* are given

It was prepared by mixing panch *Tikta Dravya* (*Nimb chal, Patol patra, Vasa patra, Kantakari patra, Guduchi kanda*) 10 gm each in 300 ml water and 50 ml milk heated to get 100 ml of *Ksheerpaka*.

Prakshep Dravya- PanchaTikta ghrita-10 ml

Til taila- 10 ml

Preparation of *basti*-

PanchaTikta gana + Milk + Water →

PanchaTikta kshera paka + *Ghrita* + *Til taila*

Diagram No. 1 (A) showing x-rays of right femur



A. Before Treatment 16-1-19



B After Treatment 15-3-19

Diagram no 1 B) shows Callus formation in shaft of right femur after treatment.



Table 1 Angle of Flexion of Right Knee by Goniometer

Date	Right Knee	Left knee
1-3-2019	155	40
31-3-2019	140	40

Therefore signs of bone healing seen after the treatment also as shown in table 1, the angle of flexion of right knee decreases to get more flexion at site.

DISCUSSION

Lakshadi Guggula and *Pancha Tikta ksheersa Basti* plays an important role in bone healing by following ways-

- 1) **Laksha**- it has properties like *Bhagna sandhan* (Bone healing), *Vranaropaka* (Wound healing), *Rakta stambhaka* (Hemostasis). Experimental and histological study also showed that *Laksha* enhances the bone healing⁸.
- 2) **Guggula**- It has *Shothahar* (anti inflammatory) and *Bhagna sandhankar* (Fracture healing) properties due to its anti inflammatory effects. Experimental studies with oleogum resin reduced xylene-induced ear inflammation in mice by 50%^{9,10,11,12}.
- 3) **Ashwagandha**- Constitutes the properties of *Balya*, *Rasayana*, *Vedanasthapaka*, anti-inflammatory, antioxidant, rejuvenating and immune modulator¹³.
- 4) **Nagabala**- It is having *Madhura*, *Kashaya rasa*, *Guru*, *Snigdha* and *Picchila Guna*, *Sheeta veerya* and *Madhura Vipaka* and *Rasayana* properties¹⁴.

5) **Arjuna**- is *Raktastambhaka*, *Sandhaniya*, *Vranaropaka*, *Raktaprasadana*. It is very useful in fractures, ulcers, cardiac disorders, fatigue, intrinsic haemorrhage, tumor, inflammations, cirrhosis of liver and hypertension¹⁵.

6) **Asthisrunkhala**- Has *Sandhaniya*, *Dipana*, *Pachana*, *Krimighna*, *Raktastambhaka*, *Rakta shodhaka karma* so it is very useful in *Asthi Bhagna*, *Abhighataja shotha* and *Raktastrava*. Experimental and clinical studies shows that *Cissus quadrangularis* is antioxidant¹⁶, analgesic¹⁷, anti inflammatory¹⁸, anti pyretic and also anti microbial¹⁹ activities. It contains natural steroids and vitamins²⁰. So it is very essential for bone healing^{21,22,23}.

SAMANYA VISHESH SIDDHANTA-

Substances or *Dravya* are always increased or enhanced by consuming similar or same things^{24,25}.

Kukkutandatwaka Bhasma has rich amount of calcium, so it is very useful in bone healing.

Aamalaki Rasayana is rich in Vitamin C, Iron, Calcium, essential amino acids and other antioxidants and minerals and hence helps in wound healing and bone formation²⁶.

Acharya Charaka and *Vagbhata* mentioned the treatment of *Asthi kshaya* is *Basti karma*



with *Ksheera* (milk), *Ghrita* and drugs containing *Tikta* rasa.

Basti- is the main treatment of *Vata Dosha* and described as *Ardha Chikitsa* (Half treatment) in *Ayurveda*. *Pakwashaya* is the place of *Purishadhara kala*, also taken as *Asthidhara kala*, so it nourishes *Asthi* also.

Ksheera- is *Madhura rasatmaka*, *Snigdha*, *Sheeta viryatmaka*, *Brihan- karma*, *Vrushya*, *Medhya*, *balavardhaka*, *Jivaniya*, *Shakti vardhaka*, *Bhagna sandhankar*.

Ghrita- is *Madhura rasatmaka*, *Sheeta virya*, *Snigdha Gunatmaka*, *Vaat pitta shamak*

Tikta Rasa- It is mainly *Vayu* and *Akash mahabhut pradhana Dravya*. It increases the *Shoshana Guna* of *Asthi dhatu* which also increases the *Khara Guna*.

According to *Acharya Arundutta*, the *Tikta* rasa is mainly *Vayu* and *Aksah Mahabhutapradhan Dravya*. Its property is mainly to increase the *shoshana Guna* of *Asthi dhatu*. *Dugdha* and *Ghrita* are mainly *snigdha Dravya*, this property will decrease the *Shoshana Guna* of *Tikta* rasa. Due to *Sukshama Guna* of *Ghrita* the *SnehanaBasti Dravya* reaches to *Asthi dhatu*, produces *Kharata* and prevents *Asthi kshaya*^{27,28}.

CONCLUSION

On the basis of observations following conclusion can be made-Ayurvedic

medicines are very effective in the management of *Bhagna*.



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