



Case Study

ROLE OF PANCHAKARMA IN THE MANAGEMENT OF SEPTIC ARTHRITIS WITH SPECIAL REFERENCE TO KROSTUKASHEERSHA

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ABSTRACT

Septic arthritis is a condition in which an inflammation of a joint that's usually caused by bacterial infection. Typically, septic arthritis affects one large joint in the body. On observing pathological changes and clinical features, septic arthritis nearly corresponds with *Krostukasheersha* caused due to vitiation of *Vata* and *Rakta dosha*. A 45 years female patient c/o pain and swelling in left knee joint since 1½ year associated with burning sensation, raise of temperature and heaviness of the limb, diagnosed as septic arthritis or synovitis. The patient treated with *Godhumadi Upanaha*, *Basti*, and *Rakthamokshana* along with some oral medications. A patient was recovered from her illness and significant improvement occurs on overall symptoms and general well-being after the completion of the treatment. Management of emergency conditions like septic arthritis through Ayurveda has immense potential.

INTRODUCTION


Septic arthritis is also known as infectious arthritis, condition in which an inflammation of a joint that's usually caused by bacteria. It can also be caused by virus or fungus. The most common organism responsible for joint infection in all age groups is staphylococcus aureus. The incidence of septic arthritis is 2-10/1,00,000 people. Typically, septic arthritis affects one large joint in the body such as knee or hip. The infection reaches the joints through the bloodstream, in some cases, joints may become infected due to an infection, surgery or injury. Symptoms can occur bit differently in each person, but common symptoms include- fever, pain, swelling, redness and warmth. And typically causes extreme discomfort and difficulty using the affected joint^[1]. Prompt intervention is the need of the time for preventing further functional complication of post-infectious joint destruction, septicemia, multi organ failure and even death. On observing pathological changes and clinical findings, in Ayurveda the disease

can be correlated to *Krostukasheersha*. It occurs due to aggravation of *Vata* and *Rakta* in *Janupradesha*. This is characterized by severe pain and swelling over knee resembles like *Krostukasheersha*^[2]. As it is *Vata* and *Rakta dosha pradhana vyadhi*, *Vataraktahara*^[3] line of treatment can be adopted such as *Virechana*, *Basti*, *Raktamokshana* and *Lepa*^[4] etc. based on *Vyadhi avastha*.

Case Report

Chief Complaint: Pain and swelling in left knee joint Associated with burning sensation, local rise of temperature, heaviness of the limb.

A 45 year female patient was apparently normal before 2 years, one day she fell down from bike and got injury to left knee joint, she developed pain and mild swelling which was subsided after 4 days. After 6 months suddenly she developed pain and swelling in left knee joint associated with burning sensation, heaviness of the limb. Gradually pain got increased and experienced difficulty in movement of left lower limb and daily regular activities. Pain persists severe throughout the day and night. For this she consulted nearby hospital and diagnosed with left knee synovitis and septic arthritis and underwent arthroscopic debridement (synovectomy), she got temporary relief. As again she developed increased pain, swelling in left knee joint along with burning sensation and local raise of temperature and heaviness

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in left lower limb, associated with pain in low back radiating to left lower limb. For these complaints she got admitted in GAMC hospital for further management.

Past History

k/c/o hypothyroidism since 1½ year.

Diagnosed as iron deficiency anemia on 14/01/2022

Family history: Nothing significant

Table 1: Showing Personal History

Diet	Mixed
Appetite	Reduced
Bowel	Regular
Micturation	4-5/day
Sleep	Disturbed
Habits	Nothing significant

Table 2: Showing General examination

Pallor	Absent
Icterus	Absent
Clubbing	Absent
Lymphadenopathy	Absent
Cyanosis	Absent

Table 3: Showing vital signs

Pulse rate	74/min
Respiratory rate	16/min
Blood pressure	130/80 mmhg
Temperature	98.6 f

Table 4: Showing Asthasthana pareeksha

Nadi	Vatakapha
Mala	Abaddha
Muthra	Prakrita

Table 7: Showing Musculo skeletal system examination: Knee joint

Inspection	Palpation	Special test
Gait - Antalgic	Warmth - Present	Patellar tap - Positive
Deformity - Absent	Tenderness - Present	Bulge test - Positive
Discoloration - Absent	Effusion - Present	
Swelling - Present	Crepitus - Absent	

Table 8: Showing Range of Movement

ROM	Right knee joint	Left knee joint
Flexion	130°	110°
Extension	10°	10°

Jihwa	Alipta
Shabda	Prakrita
Sparsha	Anushna sheeta
Drik	Prakrita
Akruti	Prakruta

Table 5: Showing Dashavidha pareeksha

Prakriti	Vatakapha
Vikriti	Dosha- Vata, Kapha Dhatu- Rasa, Rakta
Sara	Madhyama
Samhanana	Madhyama
Satmya	Madhyama
Satva	Madhyama
Aharashakti	Madhyama
Vyayama shakti	Madhyama
Vaya	45 years
Pramana	Madhyama

Table 6: Showing Samprapti ghataka

Dosha	Vata, Pitta
Dushya	Rakta, Asthi, Majja
Srotas	Raktavah, Majjavaha, Asthivaha
Srotodusti	Sanga
Udbhava sthana	Pakwashaya
Sancara sthana	Sarvashareera
Vyaktha sthana	Jaanu sandhi
Rogamarga	Madhyama
Adhistana	Janu sandhi
Sadhyasadhya	Krichrasadhya
Swabhava	Chirakari

Table 9: Showing Investigations

MRI Knee joint	Moderate synovial effusion with smooth synovial thickening Suprapatellar joint effusion
Blood investigation	ESR-100mm/hr CRP -33.9mg/l
Cultural anerobic	Pus cell present

Table 10: Showing Treatment plan

Date	Treatment	Observation
D1-D7	<i>Godhumadi upanaha</i>	No changes in pain and swelling in first 4 days. Next 3 days felt 10% relief in pain.
D8-D11	<i>Churna basti</i>	Pain reduced during rest and night time.
D12 - D16	<i>Vaitarana kshara basti</i>	Reduced mild swelling and 25% relief in pain
D17 - D21	Gap	<i>Amlapitta</i> - c/o nausea vomiting
D22	<i>Jalaukavacharana</i>	50% relief in pain. Marked reduction in swelling, complete absence of pain during sleep and in resting position. Reduced heaviness of limb. Reduced tenderness and warmth.
D44 (after 20 days gap)	Wet cupping therapy	60% relief
D45 (for 15 days)	<i>Jatamayadilepa</i> external application	70% relief

Table 11: Showing Result

S.no	Symptom	Before Treatment	After Basti	After Jalaukavachara
1	Pain	Grade 3	Grade 2	Grade 1
2	Tenderness	Present	Present	Absent
3	Warmth	Present	Present	Absent
4	Gait	Antalgic	Antalgic	Antalgic

Table 12: Showing Range of Movement

ROM	Before treatment	After treatment
Flexion	110°	130°
Extension	10°	10°

Table 13: Showing result of Subjective Parameter

S.no	Parameter	Before treatment	After Basti	After Jalaukavacharana	Follow up
1	Swelling	38cm	37cm	35cm	35cm
2	Walking duration	1 min 15 sec		45 sec	

Table 14: Showing Investigations

Investigations	Before treatment	After treatment
CRP	33.9 mg/L	9.42 mg/L
ESR	110 mm/hr	65 mm/hr

DISCUSSION

Discussion on Intervention

The Ayurvedic pathogenesis of *Krostrukasheersha* is because of vitiated *Vata* and *Raktha*. There will be a accumulation of *Dusta rakta* in the knee joint being provoked by aggravated *Vata*. In this condition the *Raktavaha strotas* being obstructed

by *Kapha* which comes through the malfunctioning of *Vikruta vata*. As knee joint is the place of *Shleshaka kapha* but aggravated *Vayu* insisted it to make obstruction of circulation of blood within the joint space, so it leads to pain and large swelling in knee joint and structures becomes swelled as a head of

jackal or *Krostukasheersha*. An inflammatory pathological state which leads to severe pain and burning sensation, and here there is involvement of *Vata* and *Rakta dosha*, the pacification of *Vata dosha* and purification of *Raktadhatu* is the basic aim towards *Samprapti vighatana* by clearing the channel to reduce *Avarana*, *Krostukasheersha* should be treated as per the principle of *Vatarakta chikitsa* and *Raktamoskhana*^[5]. The treatment protocols which are followed in this case are said to be potent *Vatashamaka*, *Raktashodhaka* as well as *Strotoshodhaka* by removing *Avarana* of *Rakta* and *Vata* to each other.

Godhumadi upanaha: *Upanaha*^[6] is a type of *Sagni snigdha sweda*. All the drugs like, *Godhuma chura*, *Yavachurna* and *Amladravya* etc are having *Vatapittashamaka* and also *Brihmana* effect, gives *Poshana* to *Asthi*. Due to local raise of temperature, it removes metabolic waste through blood and lymphatic circulation and improve local tissue metabolism by this it reduces the inflammation by modifying secretion of various inflammatory mediators, so helps in reducing pain, stiffness and swelling. And also acts as *Shoolahara*, *Shothahara*, *Asthisandhibalya*, *Stairyakara* and *Brihmana*.

Basti: As *Basti*^[7] is mentioned as best treatment in *Vatarakta*, is administered after *Kostashodhana* with *Eranda taila*. *Churna basti*^[8] which includes *Vatahara churnas* such as *Rasna*, *Vacha*, *Bilva*, *Shatahva* etc and administered along with *Saindhava*, *Amla* and *Ushnajala*. Mainly acts as *Shulaghna* i.e., acute pain relief.

Vaitarana basti: *Vaitarana*^[9] *basti* is one of the most effective and economical *Basti* which can be administered in a wide range of diseases. In *Brihatrayee* there is no description of *Vaitarana basti*. We get the references of *Vaitarana basti* from text books like *Chakradatta*, *Vrindhamadhava*, *Vangasena samhita* etc. The majority of the content drugs of *Vaitarana basti* are having *Laghu*, *Ruksha*, *Ushnaan*, *Tikshna* properties which pacifies *Vata kapha dosha*. *Vaitarana basti* shows significant effect in *Ama*, *Shula* and *Shotha avastha*.

Raktamokshana- The diseases which are not get cured by *Snigdha*, *Ruksha*, *Sheeta* and *Ushna upakrama*^[10]. Then one should give importance for *Rakta* as there will be an involvement of *Rakta dosha*. Hence treatment which evacuates *Rakta* and *Pitta dosha* such as *Shonitamokshana* considered as best line of treatment.

Jalaukavacharana- *Jalaukavacharana*^[11] is adopted mainly in *Pitta* and *Rakta dosha pradhana vyadhi*, and there will be *Avarodha* to *Vata* and *Rakta*, hence *Raktamokshana* helps to remove *Avarana* and relieves

Maargavarana. The action of leech is due to its biological substances present in its saliva. This saliva contains more than 100 bioactive substances, which includes anti-inflammatory, anti-thrombin, anti-platelet, factor Xa inhibitors, antibacterial property. That helps in reduction of pain, inflammation swelling and burning sensation.

Wet Cupping: *Raktamokshana* in which *Shringa*^[12] is utilized for *Raktavasechana* in *Vata doshaavastha* where it nearly corresponds with modified *Raktamoskhana* as wet cupping therapy. Main action of cupping therapy is to enhance the circulation of blood and to remove toxins and waste from the body. That could be achieved through improve the microcirculation, promote capillary endothelial cell repair, fastens the granulation and angiogenesis in the regional tissues, thus helping normalize the patient's functional state such as pain, swelling, and also it progress the muscle relaxation. Cupping also removes harmful materials from skin microcirculation and interstitial compartment.

DISCUSSION ON OBSERVATION

A moderate improvement occurs on overall swelling and redness and general wellbeing of the patient at the time of discharge. After the discharge on a follow up, the patient was having 70% relief from the symptoms. The Ayurvedic pathogenesis of *Kroshtukasheersha* (septic arthritis or synovitis) is an accumulation of *Dusta Rakta* in the knee joint being provoked by aggravated *Vayu*. In this case, treated with *Churna basti*, *Vaitarana basti*, *Jaloukavacharana*, *Lepa* helps in reduction of symptoms as mentioned in Table no. 10.

CONCLUSION

Kroshtukasheersha is described by Acharya *Sushruta* as a *Vatavyadhi* and *Mahavatavyadhi adhyaya*^[13] can be compared with synovitis of knee joint. As per Ayurveda *Vata* and *Raktadosha* are predominantly involved for the manifestation of the disease. *Dosha* and *Dhushya samucchana* take place in the knee joint causing swelling which appears like the head of Jackal and makes the patient difficult to walk due to the severity of pain. Diagnosis and treatment plan is mainly based on *Dosha Avastha* and *Pradhanyata Panchakarma* treatment should be tailored according to *Vyadhi avastha* and *Rogibala*. *Teekshna basti* are helpful in *Samavastha* by removing *Avarana* of *Dosha*. The diseases which caused by *Rakta*, one should adopt treatment which evacuates *Rakta* and *Pitta* such as *Shonitamokshana*. Here *Jalaukavacharana* which is having bio-active constituents which possesses anti-inflammatory, anticoagulant, anesthetic, antibiotic and anti-oxidant properties, acting through multiple mechanism in this

conditions. Wet cupping it is a type of modified *Raktamokshana*. This suction causes pulling of accumulated blood on the surface this enhances circulation of blood and to remove toxins and waste from the body. Result of this present case study shows marked improvement in overall symptoms and signifies the role of Ayurvedic treatment approach in successfully overcoming the condition without any side effects. Since this is a single case study, further study is needed to be observing the effect of above treatment modalities on more number of patients and for long duration to remark other benefits.

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