

MANAGEMENT OF AVASCULAR NECROSIS THROUGH AYURVEDA – A CASE STUDY

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SUMMARY:

Avascular necrosis (AVN) or osteonecrosis of the femur head, a disease with many etiological factors, affects young population and if not managed timely, leads to the collapse of femur head eventually requiring hip arthroplasty. Although treatment has been facilitated by using a widely accepted international classification system, effective earlier diagnosis using MRI and more aggressive surgical management, no universally satisfactory therapy has been developed, even for early disease. The features of *Asthimajjavruta vata* can be correlated with Avascular necrosis. This is a case report demonstrating that a combination of *Ayurved* medicines and procedures may be helpful to arrest further necrosis and rejuvenate the bones.

Key Words: Avascular necrosis, *Asthimajjavruta vata*.

INTRODUCTION:

Avascular necrosis (AVN), also known as osteonecrosis, aseptic necrosis or ischemic bone necrosis is a disease that may affect several different bones as a result of temporary or permanent loss of the blood supply to these bones. The ischemia causes the death and eventual collapse of the bone tissue, with its overlying joint surface^[1].

The femoral head is most commonly affected by this disease. Usually, the patients are in their third, fourth or fifth decade of life at the time of diagnosis. Men are more prone to this disease than women. Initially, patients are asymptomatic, but, in time, AVN leads to joint destruction, requiring surgical treatment and in latter stages, total hip replacement (THR)^[2].

Although treatment has been facilitated by using a widely accepted international classification system, effective earlier diagnosis using MRI and more aggressive surgical management. No universally satisfactory therapy has been developed, even for early disease. It is essential that AVN of the femoral head is diagnosed early because delaying this disease by joint preserving measures have a much better prognosis and because the results of joint replacement are poorer in young individuals^[2].

The clinical features of *Asthimajjagata vata* described as *bhedo-asthiparvanam* (breaking type of pain in bones), *sandhishula* (joint pain), *satata ruk* (continuous in nature), *mamsabalakshaya* (loss of strength and muscles weakness) and *asvapna* (disturbed sleep), which can correlate with the symptoms of AVN^[3].

CASE REPORT:

A 55 years old patient brought to Kayachikitsa OPD of Mahatma Gandhi Ayurved College Hospital & Research Centre, Salod, with the complaints of severe pain in both hips radiating to thighs. He was not able to walk, sit or even lie on either of the side. He felt comfortable comparatively in supine position.

On history taking, he had mild pain in both hip joints. Transient relief was found with conventional treatments. Thereafter his condition gradually worsened and he developed inability to walk without support. MRI of both hips showed osteonecrosis of the femoral head, stage III C. He was advised surgical intervention but patient was not willing so he opted for Ayurvedic treatment.

Personal history revealed mixed diet, irregular bowel and disturbed sleep (due to pain). He had no any habit. He had history of bronchial asthma since five years for that he was taking corticosteroids intermittently during attack.

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Systemic examination:

There was significant loss of range of movements, both active and passive. Patient had normal muscle bulk and tone. Cardiovascular and respiratory systems were in normal limits.

Treatment:

As he had severe pain, Tab Diclofenac sodium 100mg once a day after dinner was given for first three days to make patient comfortable for Ayurvedic procedures.

Management was done on the basis of three components of *Rasayan chikitsa* i.e. *Rasa* (nutrition), *Agni* (digestion& metabolism) and *Strotus* (Microchannels).

Following procedures and medicines were advised.

During admission			
Procedure & Medicines	Commenced	Time period	Dose
<i>mrudu Snehan</i> (light massage) with <i>Ksheerbala taila</i> & <i>Swedan</i> (foementation) with <i>Nirgudi patra potali</i> at lumber, hip region & thighs was done.	From first day	For 21 days	Once a day
<i>panchatikta ksheera basti</i> (medicated enema)	From sixth day	For 21 days	<i>panchatikta ghruta</i> 50ml & <i>godugdha</i> 50ml)
Restriction of weight bearing	From first day	Daily	
<i>pranayam</i> (<i>Anuloma-viloma</i>)	From fifth day	Daily	In the morning for 5 minutes .
Gandharva haritaki	From first day	For 5 days	10 gms at night with luke warm water
<i>Kaishor guggul</i>	From first day	For 21 days	500 mg twice a day after meals

<i>Sarivadyasava</i> –	From first day	For 21 days	20 ml twice a day after meals
Tab. Me-cal (Dhootpapeshwar)	From first day	For 21 days	1tab twice a day
<i>Shiva gutika</i> –	From first day	For 21 days	500 mg twice a day with luke warm water after meals

On Discharge

<i>Kaishor guggul</i>		One month	500 mg twice a day after meals
<i>Sarivadyasava</i> –		One month	20 ml twice a day after meals
Tab. Me-cal (Dhootpapeshwar)		One month	1tab twice a day
<i>Shiva gutika</i> –		One month	500 mg twice a day with luke warm water after meals
<i>Ksheerbala taila</i> for local application & <i>nirgundi patra potali</i> for <i>swedan</i>		For a year	Once a day

On follow-up

<i>Panchatikta ghruta</i>		For 2 months	20 ml in the morning on empty stomach with luke warm water
<i>Sarivadyasava</i>		For 2 months	20 ml twice a day after meals
Tab. Me-cal		For 2 months	1 tablet twice a day
<i>Shiva gutika</i>		For 2	500 mg

		month s	once a day
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After completion of treatment, he was advised only local application of *Ksheerbala taila* & *Nirgundi patra potali swedan*. He was also advised some light exercise like movements of hip joints in supine position & rest.

Outcome:

Pain and range of movements were assessed. Pain is assessed by using visual analog scale (VAS), where "0" is no pain and "10" is severe pain. Range of movements assessed subjectively.

On the day of admission, pain graded as "9" on VAS. After 5 days of treatment, pain reduced to grade 8. Gradually the pain was reduced & it was graded as '2'.

Range of movements - he had significant improvement in range of movement. After one year, MRI of both hip showed same stage of avascular necrosis.

DISCUSSION:

Avascular necrosis has several causes. Loss of blood supply to the bone can be caused by an injury (trauma-related avascular necrosis or joint dislocation) or by certain risk factors (non-traumatic avascular necrosis), such as some medications (steroids), blood coagulation disorders, or excessive alcohol use. Increased pressure within the bone also is associated with avascular necrosis.

In this patient there was no H/O trauma, smoking or alcohol. But he was a known case of Bronchial asthma for which he had taken steroids intermittently for 5 years.

The patient was treated by keeping the following things in mind.

According to *Ayurved*, The pathogenesis of AVN can be inferred as lack of *Raktadhatu*(~ blood supply) to hip joints due to *strotorodha*(blockage of microchannels). *Gandharva haritaki* was given for *strotoshodhan*(cleansing of microchannels). Local *snehan* and *swedan* was done. Scientifically it can be said that during *snehan* and *Swedana* ,two therapeutic phenomenon work together;Hyperthermia &Transdermal drug absorption. *snehan* can increase oxygenated blood supply to the muscles and organs and aid the drainage of venous blood, promoting the removal of waste products from the body. By increasing the flow of lymphatic material, waste removal is also aided.

Local hyperthermia produced during *swedan* improves local blood and lymphatic circulation and thereby improving local tissue metabolism ^[4]. Hyperthermia Reduces inflammation by modifying secretion of various inflammatory mediators ^[5]. Hyperthermia relaxes local

musculature by physical effect of heat and thereby reduces pain.

Shilajeet was given as a *strotoshodhak*. With its *lekhan karma* (scrapping property),it prevents the deposition of lipids in the femoral head which increase the patency of vessels for increased circulation. *Shilajit* amplifies the benefits of other herbs by enhancing their bioavailability in the body ^[6]. It contains more than 84 types of minerals, including the main ingredient, fulvic acid and provides most of the essential minerals to the body ^[7, 8,9]. Fulvic acid acts as a carrier molecule in the human system, helps in the transportation of nutrients into the deep tissues and removes deep-seated toxins from the body ^[10]. *Shilajit* helps in energy production, reduces the recovery period of injured muscles, bones, and nervous system ^[11] and is used in the treatment of fractures ^[8, 9, 12].

Panchatikta kshira basti was advised for strengthening of *asthi dhatu*(~ bone tissue). *Tikta rasa* has predominance of *Vayu* and *Aakash Mahabhuta*. Hence, it has affinity towards the body elements having same *mahabhautika tattva* like *Asthi* . *Ghruta* (ghee) is *vata-shamaka* (reduces *vata*), *balya* (increases body strength), *agnivardhaka* (increases appetite as well as metabolism) Thus, it pacifies *vata* and acts as a rejuvenator of the body. *Ghruta* has the properties of *sanskarasya anuvartana* (that which inherits the properties of other drugs without altering itself) precipitating bio-availability of other drugs ^[13]. Thus, helps in the *samprapti vighatana* (breaking down of pathology) of the *ashti-majjagata vata*.

Kaishor guggulu possesses *shothahara* property (capacity to reduce edema) and *rasayana* (rejuvenation) effect. It is given with *sarivadyasava* which is recommended for *rakta prasadana* (improving circulation) and favoring regeneration of bone tissue. In one study, *Sariva*(*Hemidesmus indicus*) showed the greatest antiosteoclastic activity without toxic effect on osteogenic precursors^[14].

Tablet Me-cal contains *kukutanda tvak bhasma* which is a rich source of calcium. It is efficacious in *Asthikshaya*.

Anuloma-viloma is helpful in sufficient saturation of oxygen in the blood. In the study of Reis *et al.* they gave each patient 100 consecutive days of HBO (hyperbaric oxygen), which involved breathing 100% oxygen via a mask at 2-2.4 atmospheres pressure for 90 minutes. Though the follow-up period is poorly defined they reported that 13 of the 16 femoral heads subsequently appeared normal on MRI after this treatment ^[15].

This clinical case report provides clear MRI evidence of prevention of further bone degeneration in osteonecrosis of femoral heads However, without biopsy, the true nature of the tissue is unclear. In

addition to the MRI evidence, symptomatic improvement was significant.

CONCLUSION:

This case showed encouraging results as within one month of treatment, patient could walk with support; the range of movement was also normalized. MRI after one year of treatment showed no any progression in degeneration of bone. From this study, it is stated that *Ayurveda* can be a promising alternative in early Avascular necrosis. Further clinical trials are needed to establish a standard management of Avascular necrosis.

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