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“MANAGEMENT OF AVASCULAR NECROSIS (AVN) WITH AYURVEDIC APPROACH: A SINGLE CASE STUDY”

Dr. Narmada S. Meshram¹, Dr. Archana S. Dachewar²

1. PG Scholar, Dept. of Kayachikitsa, Shri Ayurved Mahavidyalaya, Nagpur, Maharashtra.
2. Professor & HOD, Department of Kayachikitsa, Shri Ayurved Mahavidyalaya, Nagpur

ABSTRACT:

Avascular necrosis is the death of bone tissue due to a lack of blood supply. Also called osteonecrosis, it can lead to tiny breaks in the bone and cause the bone to collapse. A broken bone or dislocated joint can stop the blood flow to a section of bone. Avascular necrosis is also associated with long-term use of high-dose steroid medications and too much alcohol⁽¹⁾. Here we present the case of a 48 year old male who presented with Avascular necrosis of head of femur on either side (FICAT stage III on left side and stage II on right side). It can correlate with asthimajjagat vata. Ayurvedic managements include Shaman chikitsa and Shodhan chikitsa. This case highlights the challenges associated with Asthimajjagat vata (AVN) and emphasizes the importance of timely intervention and multidisciplinary care.

KEY WORDS:- Avascular necrosis, Asthimajjagat vata, panchatikta ksheera basti, Jalaukavacharana.

Corresponding Details:

Dr. Narmada Meshram

Shri Ayurved Mahavidyalaya, Nagpur

Mobile No. 8600242556

E-Mail: narmada.meshram1997@gmail.com



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INTRODUCTION

Avascular necrosis is the death of bone tissue due to a lack of blood supply. Also called osteonecrosis, it can lead to tiny breaks in the bone and cause the bone to collapse. The process usually takes months to years. A broken bone or dislocated joint can stop the blood flow to a section of bone. Avascular necrosis is also associated with long-term use of high-dose steroid medications and too much alcohol. Anyone can be affected but the condition is most common in people between the ages of 30 and 50. Some people have no symptoms in the early stages of avascular necrosis. As the condition worsens, affected joints might hurt only when putting weight on them. Eventually, you might feel the pain even when you're lying down. Pain can be mild or severe. It usually develops gradually. Pain associated with avascular necrosis of the hip might center on the groin, thigh or buttock. Besides the hip, the shoulder, knee, hand and foot can be affected. Some people develop avascular necrosis on both sides, such as in both hips or in both knees. Avascular necrosis occurs when blood flow to a bone is interrupted or reduced. Reduced blood supply can be caused by, Joint or bone trauma. An injury, such as a dislocated joint, might damage nearby blood vessels⁽²⁾. Cancer treatments involving radiation also can weaken bone and harm blood vessels. Fatty deposits in blood vessels. The fat (lipids) can block small blood vessels. This can reduce blood flow to bones⁽³⁾.

Certain diseases, Medical conditions, such as sickle cell anemia and Gaucher's disease, also can lessen blood flow to bone. Sometimes the cause of avascular necrosis not brought on by trauma isn't fully understood. Genetics combined with overuse of alcohol, certain medications and other diseases likely play a role. Untreated, avascular necrosis worsens. Eventually, the bone can collapse. Avascular necrosis also causes bone to lose its smooth shape, possibly leading to severe arthritis.⁽⁴⁾

CASE REPORT

A 48-year-old male patient approached Pakwasa Samanvaya Rugnalaya, Nagpur, on September 4, 2024, with complaints of bilateral hip joint pain, difficulty during walking, unable to walk for longer duration. He was diagnosed with FICAT stage III on left side and stage II on right side. He was known case of hypertension since 6 years.

CASE HISTORY :

A male patient aged 48 years was said to be healthy until September 4, 2024. He presented with a sudden onset of bilateral hip joint pain, difficulty during walking, unable to walk for longer duration. He was diagnosed with Avascular necrosis of head of femur on either side (FICAT stage III on left side and stage II on right). He approached Pakwasa Samanvaya Rugnalaya later for further management. So he got admitted to our hospital for treatment of the same. He underwent Ayurvedic management and was discharged with remarkable improvement.

PAST HISTORY :

K/C/O Hypertension since 6 years on medication Tab Telmisartan 40 mg OD No H/O Diabetes Mellitus, Bronchial Asthma, IHD, Thyroid disorders.

Personal History

Bowel: passed

Micturation: passed

Diet: Normal diet

General Examination

BP: 130/80 mmHG

PR: 74/min

RR: 20 times/min

Temp: 98.2F

Edema- No

Pallor- No

Icterus- No

Clubbing- No

Astha Vidha Parikshana

Nadi: Vata Pittaja

Mala: samyak

Mutra: samyak

Jihva: Saam

Shabda: Spastha

Sparsha: Anushnasheeta

Druka: Spects present

Akruti : Madhyam

Systemic Examination

Respiratory sound: on Auscultation, AEBE equal, no abnormal sound detected

Cardiovascular sound: S1S2 normal

Gastrointestinal system: tender, no organomegaly detected

Central nervous system:

Consciousness-conscious Orientation-fully oriented,

Motor Function -Gait-Difficulty during walking

ON EXAMINATION :

Table no. 1 SLRT:

SLRT (BT)	Active	Passive
Rt. Leg	60 degree (Painful)	80 degree (Painful)
Lt. Leg	50 degree (Painless)	70 degree (Painless)

Table no. 2 VAS for hip joint:

BT	Left	Right
VAS for Hip joint pain	8/10	7/10

SPECIFIC INVESTIGATION

MRI hip done on 24/06/2024 shows Avascular necrosis of head of femur on either side (FICAT stage III on left side and stage II on right) Case was diagnosed as Asthimajjagatvata(AVN).

MATERIALS AND METHODS

Centre of Study: Pakwasa Samanvaya Rughalaya IPD, Nagpur. Simple random, single case study.

Treatment Advised**Table no. 3: Shaman chikitsa:**

SrNo	Name of Medicine	Dose	Kaal	Anupana
1	Trayodashang guggul	250 mg	Vyana kaala Udana	Koshna jal
2	Panchatikta ghrut guggul	250 mg	Vyana kaala Udana	Koshna jal
3	Asthiposhak yog	30 ml	Vyana kaala Udana	Milk
4	Panchatikta ghrut	1 tsp	Apana kaala	Koshna jal
5	Raktashodhak kashaya	20 ml	Vyana kaala Udana	Koshna jal

Table no. 4: Shodhana chikitsa:

SrNo	Procedure	Dose	No of Days
1	Snehan kati te ubhaya pad with Bala ashwagandhadi tail.	20 mins	25 days
2	Panchatikta ksheer basti	60 ml	25 days
3	Shashtishali pind swed	30 mins	25 days
4	Jaloukavacharan	Alternate days at hip joint	10 days

DISCUSSION

The main intention of the treatment was conservative management and to improve the quality of life of the patient. The main complaint of the patient was pain in the bilateral hip joint, which indicates involvement of Vata dosha in Asthivaha srotas. AVN is caused by a lack of blood supply to a particular part of the bone. Due to the Marga avarodha of vayu, the blood supply to the femoral head is reduced. Increased Vata dosha finally resulted in the Kshaya of Asthi Dhatu. Hence, considering the vata involvement and Rakta prasada and Asthiposhaka concepts, Jalaukavacharana is indicated for vascular diseases.⁽⁵⁾ AVN can be correlated in Ayurveda with Asthimajjagat vata. Acharya Charaka mentioned that the line of treatment for Asthi kshya is Panchakarma chikitsa, especially Basti with Ksheera, gritha, and Tikta dravyas⁽⁶⁾. Panchatikta ksheera basti ingredients are mainly Tikta, Kashaya rasa Raktashodaka, and Guggulu tikta gritha, which improve Dhatu upachaya. Ksheera is Jeevaniya and Brimhaniya. Hence, the Marga avarodha of Vayu leading to vascular obstruction can be overcome by the administration of basti⁽⁷⁾. Along with that snehana, Kati basti, Shashtishali pinda sweda, jaloukavacharan, and internal medications planned for this patient. The probable mechanism of action of the planned treatment protocol can be explained as follows:

Mode of action of Panchakarma Chikitsa

1) Snehana:

Abhyanga : In this process taila was applied on body and massage was done due to this mechanical pressure exert on muscles which helps to increasing arterial pressure as well as muscle temperature from rubbing. Ayurvedic properties of taila is Snigdha, guru, Ushna which is totally opposite to vata dosha. So, taila help to reduce the vitiated Vata Dosha⁽⁸⁾. Here Abhyanga was done with balashwagandhadi tail.which is mainly contain Bala, ashwagandha, erand, shatavari and til tail, which is mainly act as balya.

2) Swedana:

Shashtishali Pinda Sweda : It is a type of Snigdha Sweda,has lipid in it. In this Swedana type, Drugs Pottali is applied on body parts, capillaries at that site get dilated due to warmth and allows the absorption of drug locally and get absorbed into the Dhamani and apparently

reaches to strotas, leading to santarpana⁽⁹⁾. Here due to degeneration of bone vikruti of Asthi, Snayu, found and blood supply to bone reduces. So, as a Santarpana aspect it was given.

3) Basti:

Panchtikta kshir basti: Acharya Charaka has mentioned Tikta Kshir Basti in Asthi Pradoshajanya Vikara. They haven't mentioned specific ingredients. So, Ashwagandha and Shatavari possess Tikta Rasa and Rasayana properties, along with that Asthishrunkhala has been selected as Kalka dravya. Shatavari has Vata, Pitta, and Rakta Shamaka properties and naturally contains formed phytoestrogens, which increase bone mineral density, and Asthishrunkhala is a Vata Kapha Shamaka and helps the bone healing process. All these medicines have bone healing properties along with anti-inflammatory, anti-aging, and sedative properties⁽¹⁰⁾. So it was found to be very effective in degenerative changes of Asthi, which leads to AVN.

4) Jaloukavacharan:

Jaloukavacharan is a unique Ayurvedic treatment that offers a promising approach to managing AVN. By removing stagnant blood, reducing inflammation, and promoting angiogenesis and bone rejuvenation, Jaloukavacharan helps to alleviate symptoms and promote healing in AVN patients.⁽¹¹⁾

Mode of action of Shaman Chikitsa

1) **Trayodashang Guggul:** Trayodashang guggul have total 14 ingredients, among these most of the drugs have tikta, kashaya, madhura rasa, ushna veerya, katu vipak and Vata hara property. It act as Vednasthapaka, rasayana, balya.⁽¹²⁾

2) **Panchatikta Ghrita:** It is an ancient form of ghee prepared from 5 herbs blended in ghee that help fight infection, calm the Vata, Pitta, and Kapha, and purify the blood. Its mystical ingredients have anti-inflammatory, antitoxin, and antipruritic properties that go deep into the tissues.⁽¹³⁾

3) **Panchatikta ghrut guggul:** It is a Guggul kalpa with Synergistic combination of Tiktarasatmaka dravyas such as Nimba, Guduchi, Vasa, Patol, Kankari (Panchatikta) acting as Raktashodhak vedanashamaka.⁽¹⁴⁾

4) **Asthiposhak Yog:** It is a traditional Ayurvedic formulation used to promote bone health, density, and strength. Asthiposhak Yog typically consists of a combination of herbs and minerals, including Hadjod, Arjuna, Praval Pishti, Mukta Pishti, and Guggulu. The anti-inflammatory properties of the formulation help to reduce inflammation and promote bone healing. Asthiposhak Yoga is typically used to treat conditions like osteoporosis, osteopenia,

fractures, and bone weakness. [It](#) is taken along with milk to increase its potential.

5) Raktashodhak Kashaya: It is a traditional Ayurvedic herbal decoction used to purify and cleanse the blood, as well as to treat various skin and blood-related disorders. Raktashodhak Kashaya typically consists of a combination of herbs, including Manjistha, Neem, Guduchi, Kutki, and Triphala.

RESULTS

Condition of patient improved gradually along with the course of treatment.

Table No.5 : Assesment of Results

Sign and symptoms	BT	AT (25 days)
Pain	VAS –left 8/10 Right 7/10	Left 2/10 Right 1/10
Difficulty in Walking	Present	Normal
SLRT (For Lt side)	Active – 50 degree (Painful) Passive- 70 degree (Painful)	Active – 70 degree (Painless) Passive- 80 degree (Painless)
SLRT (For Rt side)	Active – 60 degree (Painful) Passive- 80 degree (Painful)	Active – 80 degree (Painless) Passive- 90 degree (Painless)

CONCLUSION

This case study reveals the effectiveness of Ayurveda treatment modalities in the management of avascular necrosis. In which, Tiktakshir Basti, Jaloukavacharan, Shashtishali pind Sweda, and Shaman treatment are effective to relieve symptoms like pain and difficulty in walking. This study is based on a single case. So a further large sample size study is required to know the better results. If these medications are continued, reversible changes may be found in the MRI.

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