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Original Research Paper

Ayurveda

ROLE OF AYURVEDA IN THE MANAGEMENT OF AVASCULAR NECROSIS OF THE FEMORAL HEAD: A CASE STUDY

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ABSTRACT The degenerative disorder known as avascular necrosis (AVN) of the femoral head mainly affects young adults. It results in bone necrosis, pain, and functional impairment and is caused by a decreased blood flow. Vata-dominant Asthi-Majja Kshaya is linked to AVN, according to Ayurveda. The cornerstones of traditional treatment are analgesics and surgery, which might be costly and unsuitable for younger patients. This case report describes how a multimodal Ayurvedic approach that included Shodhana, Raktamokshana, Agnikarma, and Shamana Aushadhi successfully treated a 32-year-old male patient with bilateral femoral head AVN (Stage II–III). Significant improvements in hip joint mobility, pain, and gait indicate that Ayurveda may be helpful in the conservative management of AVN.

KEYWORDS : Avascular Necrosis, Asthi-Majja Kshaya, Panchakarma, Basti, Ayurveda

INTRODUCTION

Avascular necrosis, which mostly affects the femoral head due to its restricted vascularity, is characterized by the ischemic death of bone tissue as a result of poor blood circulation. Trauma, steroid use, drunkenness, extreme physical stress, and metabolic problems are major contributing causes. AVN manifests clinically as a limping stride, restricted hip movements, groin pain, and increasing impairment. The gold standard for early diagnosis is MRI. [1] Surgery and pain management are the mainstays of modern treatment, which frequently fails to replenish bone vitality. According to Ayurvedic theory, AVN is Asthi Dhatu Kshaya brought on by Vata Prakopa with Margavarodha of Rakta Vaha Srotas. Tikta Rasa-dominant therapies, such as Ghrita, Basti, and Raktaprasadana Chikitsa, are suggested by classical sources. [2]

Case Report

Patient Information

A 32-year-old male computer data operator complained of bilateral hip pain, with the left side being more severe. The pain had been radiating to the lower limb for six months, along with back pain and walking difficulties. Bilateral AVN of the femoral head (Stage II on the right and Stage III on the left) was verified by MRI. He had previously used painkillers that only offered temporary relief, so because he was young, he rejected the proposal for hip replacement surgery. He chose Ayurvedic medicine because he needed conservative care. During the clinical evaluation, an antalgic gait and restricted hip motions were discovered. An Ayurvedic analysis revealed that Asthi-Majja Kshaya involves Vata-Pradhana Tridosha.

MRI of Bilateral Hip Joints (15/1/2024)

The lesion is larger on the left side, according to the MRI. A distinct hypointense border indicates the development of new bone and neovascularization. The right femoral head shows flattening of the articular surface, whereas the right femoral head shows very little irregularity. These results show Stage II involvement on the right side and Stage III involvement on the left, indicating bilateral avascular necrosis of the femoral heads.

Diagnosis

The diagnosis of bilateral avascular necrosis of the femoral head was verified based on the clinical presentation and MRI results. Asthi-Majja Kshaya with Vata Pradhana Tridosha involvement was the diagnosis made in Ayurveda.

Timeline

The patient experienced lower back and right leg pain after lifting heavy weights at the gym in September 2024. He was playing football in October 2024 when he suffered a twisting injury to his right leg. The ache then spread to his right hip and became uncomfortable when he sat. When he started having trouble walking on October 15, 2024, he saw an orthopaedic physician, who gave aceclofenac, which had no effect. On October 16, 2024, an MRI of the hip joints revealed avascular necrosis of the femoral head, with Stage II involvement on the right side and Stage III on the left.

The patient was admitted at Hospital on December 11, 2024, after complaining of increased right leg discomfort, back pain, and trouble walking. From December 11 to 14, 2024, medicated ghee was administered internally in progressively larger dosages, starting with 40 ml twice daily with warm water. From December 15 to 16, 2024, steam therapy and a full-body oil massage utilizing medicinal oil were next. Eranda Sneha with dindayala churna were used in a therapeutic purgation on December 17, 2024, which produced 19 bowel movements. On December 18 and 19, 2024, a controlled post-procedure diet was adhered to. Baspa Svedana and full-body Abhyanaga were resumed on December 20, 2024.

Basti, such as Niruha and Anuvasana , were given on alternate days starting on December 21, 2024. Beginning on December 24, 2024, Agnikarma therapy was applied to the groin and lower back. On January 11, 2025, both groin areas underwent Jalaukavachana therapy.

Therapeutic Intervention

Over the course of three months, the patient underwent Shodhana and Shamana Chikitsa, which included Snehapana, Abhyanga, Svedana, Virechana, Niruha and Matra Basti, Raktamokshana by Jalaukavacharana, Agnikarma, and internal medications like Kaishor Guggulu 300 mg (three tablets) three times a day with warm water, Manjishthadi Kvatha 40 ml twice a day with warm water, and Panchatikta Ghrita 20 ml twice a day. Oral medication should be taken at home.

Follow Up and Outcome Outcome

Table 1: Improvement in Pain and its Related Symptoms

Symptoms	Before treatment	After 6 weeks	After 12 weeks
Pain in right hip and leg	pain Severe discomfort that interfered with daily activities and happened while at rest	Moderate discomfort that didn't interfere with daily tasks or occur while at rest	Absent
Pain in left hip and leg	Severe pain, occurred at rest and impaired routine activities	Moderate pain, also occurred at rest, impaired routine work	Occurred occasionally

Difficulty in walking	Severely impaired walking due to pain	occasional	Absent
Back pain	Felt mostly every time in a day	Occasional, mostly after walking	Absent
Gait	Antalgic gait	Normal gait	Normal gait
VAS Score	7	4	2

Table 2: Improvement in Range of Motion (RoM) of Hip Joint

Action of hip joint	Normal RoM (In Degree)	Left hip joint			Right hip joint		
		RoM (Degree) Before treatment	RoM (Degree) After 6 weeks of treatment	RoM (Degree) After 12 weeks of treatment	RoM (Degree) Before treatment	RoM (Degree) After 6 weeks of treatment	RoM (Degree) After 12 weeks of treatment
Flexion	110-120	45	65	95	55	65	105
Extension	10-15	2	6	11	6	11	15
Abduction	30-50	22	32	38	27	37	42
Adduction	20-30	12	15	22	12	18	27
Medial Rotation	30-40	12	18	28	22	28	38
Lateral Rotation	40-60	27	33	48	32	38	52

DISCUSSION

Based on similarities in clinical presentation, avascular necrosis and asthikshaya can be linked. Khanja (limping) and Pangulya (lameness) are symptoms of aggravated Vata Dosha passing through Sandhi (joints), Asthi (bone), and Majja (bone marrow).[3] Asthikshaya is characterized by decreased muscle strength and persistent, deep-seated, breaking-type pain in the bones and joints.[4] Asthikshaya represents a pathological state characterized by depletion and degeneration of Asthi Dhatu.

In avascular necrosis, Margavarodha (channel obstruction) impairs the blood supply (Rakta Dhatu) to the femoral head, which eventually results in bone necrosis. Vata dosha is made worse by this impediment. [5] Prolonged Vata imbalance causes secondary involvement of Pitta and Kapha Doshas in advanced stages. Snehana, Svedana, Mridu Virechana, and Basti therapies are the standard treatments for Vata Dosa. [6]

Virechana karma helps in Srotovishodhana (purification of body channels), [7] consequently assisting in the clearance of vascular blockage and delaying the development of femoral head bone necrosis. In Vatavyadhi, Basti treatment is referred to as Ardha or Sampurna Chikitsa. Therefore, through its Shodhana and Lekhana activities, Niruha Basti with Pathyadi Kvatha helps the systemic removal of accumulated Dosa.

Tikta Rasa, Katu Vipaka, Laghu, and Ruksha Guna are possessed by drugs belonging to the Panchatikta group, which includes Guduchi, Patola, Nimba, Vasa, and Kantakari. By enhancing Dhatwagni at the Asthi and Majja Dhatu levels, Ghrita treated with these medications promotes bone repair. Ghrita's Madhura Rasa, Guru, and Snigdha qualities [8] pacifies Vata Dosa and helps arrest degeneration and necrosis through its nourishing and rejuvenating actions.

Tikta, Katu Rasa, and Ushna Guna give Manjishtha and other components of Manjishthadi Kvatha Raktaprasadana qualities. These medications assist reduce obstruction in Sira, which is seen as an Upadhatu of Rakta, and are recommended in Rakta Dushti. In Vatarakta, Kaishora Guggulu is frequently utilized. [9] where vascular obstruction is the primary pathology, and may have contributed to improving blood circulation to the femoral head in avascular necrosis.

Agnikarma's Ushna, Tikshna, Sukshma, and Laghu qualities assist alleviate Shula (pain), Stambha (stiffness), Gaurava (heaviness), and Shita (coldness). It effectively relieves pain by improving local blood circulation, facilitating the outflow of collected fluids, reducing swelling, and desensitizing nerve endings. [10] Jalaukavacharana, recommended in Rakta Dushti, improves circulation and eliminates vitiated blood, which may help reverse bone deterioration.

CONCLUSION

There are few conservative treatments available for AVN of the femoral head, a crippling disease. This instance shows that a methodical Ayurvedic approach can significantly improve symptoms and function, indicating that Ayurveda is a promising conservative treatment option for AVN.

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