

Case Report

Ayurvedic management of pituitary macroadenoma-a case report

Anuja K. Vasanth*, P. V. Giri, T. C. Marikutty

Department of Kayachikitsa, Vaidyaratnam Ayurveda College, Thrissur, Kerala, India

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***Correspondence:**

Dr. Anuja K. Vasanth,

E-mail: anujavasanth18@gmail.com

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ABSTRACT

Pituitary macroadenoma is an infrequently encountered clinical condition, characterized by a non-metastasizing neoplasm situated within the pituitary gland. This case report endeavours to elucidate the efficacy of ayurvedic interventions in achieving symptomatic resolution. A 44-year-old female patient, residing in Thrissur, diagnosed with features suggestive of pituitary macroadenoma, sought admission to Vaidyaratnam ayurveda college hospital for complaints of generalized pain, heaviness of head, impaired peripheral vision in the left eye, and amenorrhea persisting for approximately 7 months. The case was conclusively diagnosed as Pituitary Macroadenoma and meticulously addressed through therapeutic modalities including takradhara, nasyam, and thalapothishil. patient was already prescribed with Caberlin tablets at a dosage of 0.25 mg twice weekly, administered nocturnally. Following 21 days of treatment, notable improvement in the LBNQ-Pituitary score was observed from 60 to 21 accompanied by significant symptomatic alleviation. A specific treatment protocol for the management of pituitary macroadenoma is currently unavailable.

Keywords: Pituitary macroadenoma, Case report, Masthishka majja, Takradhara, Nasyam, Thalapothishil, Leiden bother and needs questionnaire

INTRODUCTION

Central nervous system tumors make up 1.4% of all newly diagnosed tumors. Among adults, pituitary adenomas ranked as the third most common CNS tumors, comprising 15% of the total, with the majority being benign. The estimated prevalence within the global community ranges between 68 to 115 cases per 100,000.¹ Pituitary adenomas exhibit a higher prevalence among females than males. Originating in the anterior pituitary gland, these tumors manifest their effects through either excess hormone secretion or mass effect. Clinical presentations vary depending on size and hormone secretion, classified as microadenomas for those smaller than 10 mm and macroadenomas for larger ones. Pituitary adenomas can further be categorized as functional or non-functional based on their hormone-secreting capabilities.

This clinical condition is a rarity, with limited documentation available. It is not extensively studied or

well-documented in the existing ayurvedic medical literature, making it a challenging subject for standardization and comprehension in the field of healthcare. The scarcity of information poses complexities in understanding and addressing this particular condition within the realm of clinical knowledge. In this case, mass effects contribute to headache due to dural irritation, visual disturbances arising from optic chiasm compression, and hypopituitarism resulting from pituitary stalk compression. Treatment goals encompass reducing tumor size, mitigating mass effect, symptoms such as vision deficits and headache. Preserving remaining pituitary function, preventing disease progression and recurrence. Dopamine agonists are typically chosen as medications to induce tumor shrinkage.²

In Ayurveda, pituitary adenomas are classified as a granthi in masthishka majja in the context of medo pradoshaja vikara. Vata kapha-hara oushadas are chosen

to diminish the sophia and initiate the ropana of the tumor, thereby alleviating the symptoms associated with mass effect.³

CASE REPORT

A 44-year-old female patient, employed as a panchakarma therapist, was admitted to the hospital on 9/08/21, presenting with complaints of generalized pain and heaviness in the head. With no other systemic illnesses reported, she did disclose a positive family history of carcinoma. The patient's symptoms first emerged gradually a decade ago, encompassing generalized pain, heaviness of head, nausea, giddiness, impaired peripheral vision in the left eye, and a cessation of menstruation for approximately 7 months.

Around 4 years ago, she encountered an episode of amenorrhea and breast tenderness persisting for about 8 months. Opting for conservative management, she underwent an MRI of the brain, revealing features indicative of a pituitary macroadenoma. Subsequently, the patient adhered to conservative management at that time. However, her symptoms exacerbated with head movements, discontinuation of medications, exposure to stress, daily heat exposure, and travel. Notably, relief was observed with adequate sleep, rest, and medication. Consequently, the patient was admitted to the inpatient department for further management.

Personal history

The patient adheres to a dietary routine that includes ragi, corns, millets, nuts, and fruits, expressing a preference for these food items while maintaining a robust appetite. She experiences regular and satisfactory bowel movements with a medium stool consistency. Micturition occurs 4-5 times daily and 2-3 times nightly. The patient reports sound sleep and has no known history of allergies to dust, food, or drugs. Furthermore, she engages in daily yoga practice. Having attained menarche at the age of 13 years, her last menstrual period (LMP) was noted on 11/1/21. Menstrual duration spans 5 days, characterized by profuse bleeding, pain, and clots. The patient has an obstetric history of G₂P₂L₂A₀. Notably, her father has a history of malignancy.

Treatment history

She was prescribed tablet Caberlin at a dosage of 0.25 mg to be taken twice weekly at night.

General examination

Her vitals were within normal limits, presenting with a moderate built and a noticeable presence of pallor. There were no signs of icterus, cyanosis, clubbing, or lymphadenopathy. Her height measured 163 cm, weight was 65 kg, and BMI stood at 24.5 kg/m².

Systemic examination

Nervous system examination

Her higher mental functions, cranial nerves, motor system, sensory system, and autonomic nervous system were all intact. Notably, there was an absence of the cerebellar signs as well as extrapyramidal signs in her case.

Endocrine system examination

Weight gain, heat intolerance, palpitations, amenorrhea, dizziness, nausea, and vomiting were reported. However, dysphagia, polyuria, polyphagia, diplopia, macropsia, postural unsteadiness, and the tremor were notably absent.

Diagnostic assessment

Investigations, including an MRI of the brain conducted on 15/02/17, revealed an ill-defined hypo-enhancing lesion measuring 11×11×11 mm with a focal bulge in the left half of the pituitary gland. There was minimal invasion into the left cavernous sinus and erosion of the left posterior clinoid process. Subsequent MRI of the pituitary fossa on 21/07/21 indicated a hypo-enhancing lesion in the left lateral aspect of the pituitary gland measuring 11.8×13.1×12.7 mm, with extension into the cavernous sinus, suggestive of features indicative of a pituitary macroadenoma. An ultrasound of the abdomen on 27/12/16 revealed an endometrial thickness of 9 mm with a right ovarian cyst. On 23/04/21, mild adenomyosis of the uterus with a right para ovarian cyst was observed in an abdominal ultrasound. Serum prolactin levels are detailed in Table 1. Prakrithi, as determined using the Prakrithi Ayusoft tool is identified as kapha pitta. The vitiated doshas include prana vayu, samana vayu, apana vayu, sadhaka pitta, alochaka pitta, tarpaka kapha, along with the affected dushyas being rasa, raktha, mamsa, majja, artava.⁴ The srotases affected are pranavaha, rasavaha, mamsavaha (specifically atimamsa and arbuda), majja vaha (manifesting as bhrama, murcha, tama darshana), and artava Vaha srotas. The roga marga is categorized as madhyama. This case was diagnosed as a vata kapha dosha pradhana granthi in masthishka majja in the context of medo pradoshaja vikara. The sadhyasadhyata is identified as krichrasadya.

Table 1: Serum prolactin.

Serum prolactin	
29/06/21	135.31 ng/ml
17/07/21	156.4 ng/ml
27/09/21	18.2 ng/ml

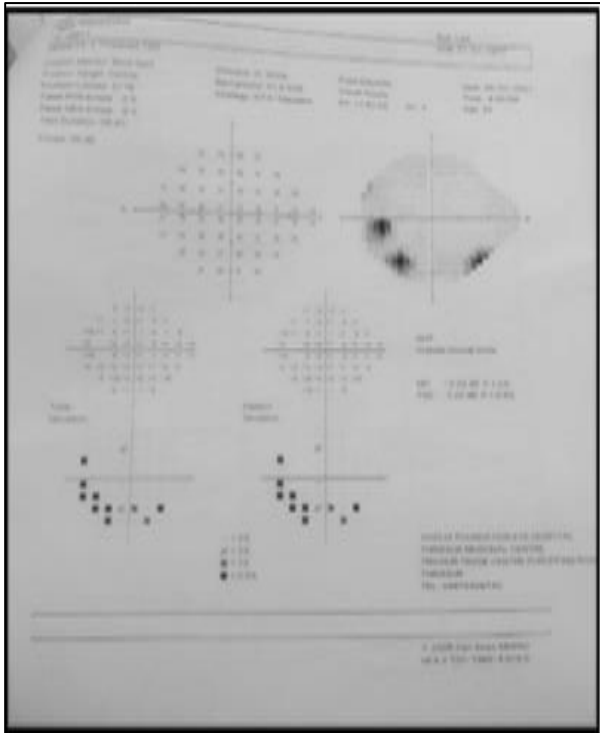


Figure 1: Perimetry done on 04/1/21.

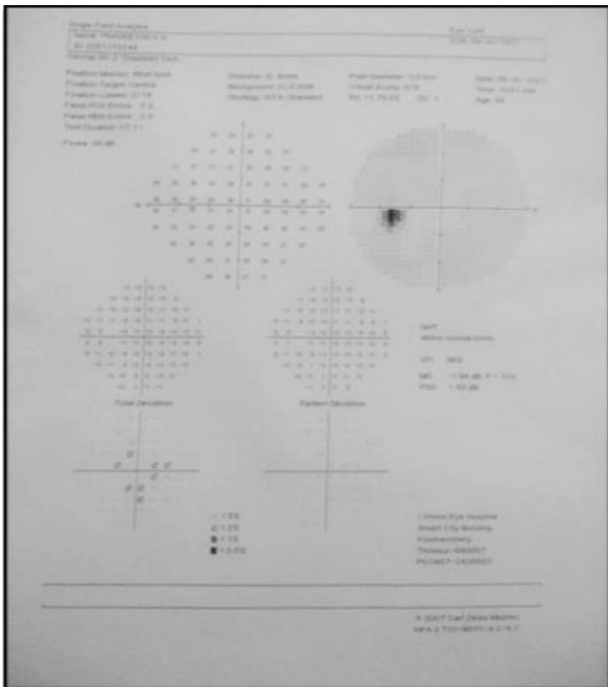


Figure 2: Perimetry done on 05/10/21.

Therapeutic intervention

Internal medications given from 4/08/21-24/08/21 along with external procedures is given in (Table 2). Follow up medicines were gugguluthikthakam ghritham-5 ml-bed time and ashwagandha churnam 1 tsp with milk after food twice daily along with varanadi kasayam and kanchanara guggulu.

Table 2: Therapeutic intervention.

Internal medications	External procedures	Duration
Varanadi kasayam-60 ml before food twice daily	Takradhara	07 days
Kanchanara guggulu 1 bd after food	Nasyam-uttama taila-8 drops	07 days
Gandharvahastaeranda tailam 15 ml with kasayam bed time	Thalapothishil with uttama taila Abhyangam	07 days
Rasa sinduram 1 bd with honey after food		

The Leiden Bother and needs questionnaire score exhibited a notable improvement, decreasing from 60 to 21 following the treatment. Significant relief was observed in generalized pain, heaviness of head, nausea, and giddiness. Furthermore, there was a considerable enhancement in the perimetry of the left eye. While menstruation attained, it was accompanied by profuse bleeding.

DISCUSSION

According to the radiological classification, the patient falls under grade 3, indicating diffuse adenoma with an enlarged sella and localized erosion. Typically, visual field loss is more pronounced in one eye due to unilateral impaired vision caused by optic nerve compression. To inhibit pituitary tumors, the suppression of pituitary-stimulating hormones from the hypothalamus is employed, often using dopamine agonists such as bromocriptine and cabergoline. These medications stimulate dopamine receptors in the hypothalamus, inhibiting the production of growth hormone and prolactin, thereby resulting in tumor shrinkage. However, if the tumor has extended beyond the sella tursica and caused compression of the optic chiasm, endocrine therapy may prove insufficient, necessitating surgery. The transsphenoidal route is commonly employed to spare normal pituitary tissue during the surgical intervention.⁵ Surgical intervention has a favorable prognosis for these tumors. Probably, a number of oncogenes, tumor suppressor genes and cell cycle mediators have been identified to be functionally involved in the initiation and progression of pituitary adenoma.⁶

The patient's predisposing factors include the consumption of laghu, ruksha, shita, alpa ahara, and exposure to a hot working atmosphere, coupled with the practice of pramitasana, shoka, and athichinthanam. Emotional distress stemming from the separation of her husband and father, combined with bija bhaga dushti, resulted in tridosa kopa, sthana samsraya of dushyas in siras, and vriddhi in masthishka majja. Manifestations such as sirogurutvam, timira, bhrama, and praseka were

observed. For the assessment of the patient's condition and the impact of the intervention, the Leiden Bother and needs questionnaire, comprising 49 items and an open-ended question, was employed. This questionnaire aims to gauge the extent to which the patient is bothered by the consequences of her pituitary disease and to identify her support needs. Each item is scored on a 5-point Likert scale, ranging from 0- "not at all" to 4- "extremely."⁷

The selected internal medicines may exert their effects either directly or indirectly on this granthi. Varanadi kasayam and kanchanara guggulu, being Kapha hara, possess properties such as lekha, chedana, granthi hara and vilayana. Varanadi kasayam is known for its sula prasamana and sophra hara properties, making it useful in Kapha medo vikara like arbuda, granthi, sirasula, gulma, and antarvidradhi.^{8,9} Indeed, Kanchanara guggulu is extensively employed in the management of glandular abnormalities and tumors, owing to its granthi vilayana property.^{10,11}

Rasa Sindura is characterized by its Kapha samana, srotosodhana, sukshma, sula prasmana, yogavahi and antarvidradhi hara properties. External treatments primarily focused on urdhvajatrudesa, such as takradhara or thalapothichil, serve as effective interventions for siroruknasa, netraroga nasana, and vyadhi mardava. These therapies target the upper part of the body and are specifically designed to address conditions related to the head and eyes, offering therapeutic benefits for various ailments in these regions.¹²

The Kapha-vata hara action of Takradhara helps relieve this margavarodha. In sarvanga takradhara, the potency of the drug administered through parisheka traverses from the skin into the body, getting processed by the effect of bhrajaka pitta. This pitta causes vilayana of kapha, removes avaranam, and restores the normal functioning of the central nervous system.¹³ Nasya helps remove the morbid doshas present in the uttamanga. Uttama taila is mainly used in neurological ailments related to the head, as it is vata kapha samana.

CONCLUSION

Symptomatic relief was observed in the patient after 21 days of ayurvedic treatment. There was a decrease in the serum prolactin level and improvement in the perimetry of the left eye. Along with supportive conservative treatment contributed to the patient's outcome.

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Ethical approval: Not required

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