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Case Study

MENSTRUAL IRREGULARITIES IN A WOMAN WITH OBESITY: A CASE REPORT WITH AYURVEDIC PERSPECTIVES

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Abstract :

Background: Menstrual-cycle disturbances may occur alongside obesity, but the relationship is complex and does not establish causation in an individual patient. Metabolic changes, insulin resistance and altered reproductive-hormone signalling may be relevant. Ayurvedic descriptions of Artava and Apana Vata offer a traditional interpretive framework. Aim: To discuss infrequent menstruation in a reproductive-age woman with obesity through contemporary physiological concepts and an Ayurvedic perspective. Case presentation: The supplied draft describes an illustrative 26-year-old woman with gradually lengthening menstrual intervals and weight gain. The clinical approach includes menstrual history, anthropometry, examination and investigations selected according to the differential diagnosis. These details are not verified patient observations and must be replaced before submission. Discussion: Potential explanations include ovulatory dysfunction, PCOS, thyroid disease, hyperprolactinaemia and pregnancy, among other causes. Obesity may influence insulin sensitivity and sex-hormone availability, but BMI alone cannot identify the cause. Ayurvedic concepts including Artava Dushti, Apana Vata and Meda Dhatu may be discussed as traditional constructs, not as substitutes for biomedical diagnosis. Conclusion: Assessment should combine menstrual history with appropriate clinical, endocrine and metabolic evaluation. An integrated discussion is useful when the limits of each explanatory framework are clearly stated.

Keywords: *Obesity; menstrual irregularities; oligomenorrhoea; reproductive health; Artava Dushti; Apana Vata; Ayurveda.*

1. INTRODUCTION

The menstrual cycle reflects coordinated signalling between the hypothalamus, pituitary gland and ovaries. Pulsatile gonadotropin-releasing hormone (GnRH) supports secretion of follicle-stimulating hormone (FSH) and luteinising hormone (LH), which regulate follicular development, ovulation and ovarian steroid production. Disruption at different points in this system can alter cycle interval, bleeding duration or flow.[1]

Menstrual complaints may include infrequent cycles, frequent bleeding, prolonged or heavy bleeding, amenorrhoea, or unpredictable bleeding. Causes are varied and may include pregnancy, endocrine disease, nutritional or energy imbalance, stress, changes in body weight, medication effects and structural pathology. The FIGO PALM–COEIN framework helps organise causes of abnormal uterine bleeding, including ovulatory dysfunction.[2]

Body mass index (BMI), calculated as weight in kilograms divided by height in metres squared, is a practical screening measure for weight status. It does not directly measure body fat distribution or metabolic health. Obesity is associated with reproductive and metabolic disturbances in some women, although the effect differs between individuals.[3–5] Adipose tissue has endocrine activity and may influence peripheral oestrogen metabolism, insulin sensitivity and reproductive signalling.

Insulin resistance with compensatory hyperinsulinaemia can increase ovarian androgen production and reduce hepatic sex hormone-binding globulin (SHBG), potentially raising free androgen concentrations. These mechanisms are relevant to PCOS but are not sufficient to diagnose it.[6,7] Menstrual disturbance can also occur with low energy availability, excessive exercise or psychological stress, which may suppress hypothalamic GnRH pulsatility.[8] Therefore, BMI should be considered alongside history, examination and relevant investigations.

In Ayurveda, Artava is discussed in relation to female reproductive function, while Apana Vata is traditionally associated with downward-moving physiological processes. Meda Dhatu, Agni and Artavavaha Srotas are additional concepts used in traditional descriptions of metabolic and reproductive health.[14,15] This report considers how these concepts may be discussed alongside modern clinical assessment without treating them as equivalent diagnostic systems.

2. AIM AND OBJECTIVES

Aim

To describe a presentation of infrequent menstruation in a woman with obesity and discuss possible metabolic, endocrine and Ayurvedic interpretations.

Objectives

• To document menstrual history and anthropometric measurements.

• To outline investigations that may help identify endocrine or metabolic contributors.

• To explain possible links between adiposity, insulin sensitivity and ovulatory function.

• To discuss the presentation using the traditional concepts of Artava, Apana Vata and Meda Dhatu.

• To emphasise a careful, integrated approach to assessment and management.

3. CASE PRESENTATION

Important: The original document labels the following as an illustrative clinical scenario, not verified clinical observations. It is retained here only as a clearly labelled template. Replace every detail with actual, documented findings and obtain the required patient consent before submission.

Parameter	Illustrative entry (verify/replace)
Age	26 years
Height	160 cm
Weight	78 kg
BMI	30.5 kg/m²
Waist circumference	92 cm
Age at menarche	13 years
Cycle interval	45–70 days
Bleeding duration	4–5 days
Flow	Moderate

The illustrative scenario concerns a 26-year-old woman reporting irregular menstruation for around 10 months. Her cycles had previously occurred every 28–32 days and were later described as occurring every 45–70 days. Bleeding was said to last 4–5 days with moderate flow and occasional mild lower abdominal discomfort. She reported gradual weight gain over approximately 18 months, which she associated with less physical activity and sedentary work. Menarche was reported at 13 years, with previously regular cycles.

The draft does not report severe dysmenorrhoea, intermenstrual bleeding, postcoital bleeding, galactorrhoea, marked thyroid symptoms, substantial recent weight loss or excessive exercise. In a real case, pregnancy possibility, medication use, contraception, family history and symptoms of hyperandrogenism must be specifically elicited rather than assumed absent.

3.1 Anthropometric and menstrual profile

BMI = weight (kg) ÷ height (m)². Using the illustrative figures: 78 ÷ (1.60 × 1.60) = 30.5 kg/m². The value falls in the obesity range under standard adult WHO classification, but interpretation should also consider waist circumference, clinical context and metabolic risk.[3]

3.2 Menstrual history

The described pattern is suggestive of oligomenorrhoea because menstrual intervals are prolonged. A complete record should include the last menstrual period, usual cycle pattern, bleeding amount, duration, pain, pregnancy possibility, medication and hormonal-contraceptive history, and symptoms such as acne, terminal facial hair growth or scalp hair thinning. The

history should distinguish infrequent menstruation from abnormal uterine bleeding and amenorrhoea.

3.3 Examination

A real examination should record measured blood pressure, pulse, waist circumference and relevant general findings. Depending on the history, assessment may include pallor, thyroid enlargement, acne, hirsutism and acanthosis nigricans. Abdominal or pelvic examination should be performed only when clinically indicated, with informed consent. Findings must be documented as observed, not inferred from BMI or symptoms.

4. CLINICAL INVESTIGATIONS

Testing should be guided by the clinical history and examination. Pregnancy, thyroid dysfunction, hyperprolactinaemia, PCOS and other causes of ovulatory dysfunction may need consideration.[9] The table lists possible investigations; it does not imply that results were obtained for the illustrative patient.

Investigation	Reason for consideration
Urine or serum pregnancy test	Exclude pregnancy where relevant
Complete blood count	Assess anaemia when indicated
Thyroid-stimulating hormone (TSH)	Evaluate possible thyroid dysfunction
Serum prolactin	Assess hyperprolactinaemia when suspected
FSH and LH	Assess gonadotropin status where clinically indicated
Total/free testosterone or other androgens	Evaluate biochemical hyperandrogenism when suspected
Fasting glucose or HbA1c	Assess dysglycaemia and metabolic risk
Lipid profile	Assess cardiometabolic risk
Pelvic ultrasonography	Assess uterine/ovarian morphology when indicated

Possible diagnosis	Features or assessment points
Polycystic ovary syndrome	Ovulatory dysfunction, possible clinical/biochemical hyperandrogenism and metabolic features
Thyroid dysfunction	Menstrual change with possible weight, energy or other thyroid-related symptoms
Hyperprolactinaemia	Oligomenorrhoea or amenorrhoea; galactorrhoea may occur
Functional hypothalamic dysfunction	Low energy availability, intense exercise or psychological stress
Pregnancy	Must be excluded when biologically possible
Primary ovarian insufficiency	Menstrual disturbance and possible symptoms of oestrogen deficiency
Structural uterine pathology	Consider particularly where the bleeding pattern and clinical findings suggest a lesion

PCOS should be diagnosed using accepted criteria after considering alternative explanations. The 2023 international guideline assesses ovulatory dysfunction, clinical or biochemical hyperandrogenism and polycystic ovarian morphology; anti-Müllerian hormone may be used as an alternative to ultrasound in appropriate adult settings. In general, two of these three features are required, with the guideline's diagnostic conditions applied.[7,10]

5. CLINICAL ASSESSMENT AND DIFFERENTIAL DIAGNOSIS

In the illustrative scenario, the principal feature is infrequent menstruation in a woman with obesity. A 45–70-day interval is compatible with an oligomenorrhoeic pattern, but the cause cannot be identified from BMI and cycle history alone.

Where abnormal uterine bleeding is present, the FIGO PALM–COEIN system can help distinguish structural causes from non-structural causes such as ovulatory dysfunction.[2]

6. DISCUSSION

6.1 Obesity and menstrual function

Excess adiposity may influence reproductive function through several interacting pathways, including insulin resistance, changes in peripheral oestrogen metabolism and altered SHBG concentrations. Adipose tissue also releases signalling molecules and inflammatory mediators that may affect metabolic and reproductive regulation.[3–6] These mechanisms make an association biologically plausible, but they do not prove that obesity caused an individual patient's menstrual symptoms.

In the scenario presented, weight gain and longer cycle intervals warrant assessment for ovulatory dysfunction. The same findings may, however, occur with PCOS, thyroid disease, hyperprolactinaemia, pregnancy, medication effects and other conditions. Clinical evaluation is necessary before attributing the symptoms to weight status.

6.2 Insulin resistance

When insulin sensitivity falls, the pancreas may compensate by secreting more insulin. In susceptible women, hyperinsulinaemia can stimulate ovarian androgen production and reduce hepatic SHBG synthesis, potentially increasing free androgen availability. This hormonal environment may interfere with follicular development and ovulation.[6,7] However, insulin resistance varies between individuals, and neither obesity nor menstrual irregularity alone establishes PCOS.

6.3 Hypothalamic–pituitary–ovarian regulation

Normal menstruation depends on communication between the hypothalamus, pituitary gland and ovaries. Changes in gonadotropin release, ovarian steroid production or follicular development can disrupt ovulation and alter cycle timing.[11] Conversely, insufficient energy availability, excessive exercise or psychological stress can suppress GnRH pulsatility and lead to menstrual dysfunction.[8,12] These contrasting pathways show why menstrual disturbance should not be explained by BMI alone.

6.4 Polycystic ovary syndrome

PCOS commonly involves ovulatory dysfunction and hyperandrogenism; polycystic ovarian morphology is present in some, but not all, affected women.[7,13] Obesity may worsen metabolic risk in women with PCOS, yet PCOS also occurs in women whose BMI is within the normal range. Obesity is not, by itself, a diagnostic criterion. Diagnosis should follow current guidance and exclude relevant alternative causes.

6.5 Ayurvedic perspective

Within Ayurvedic literature, Artava is relevant to female reproductive function and Apana Vata is traditionally associated with downward movement and elimination. Irregular menstruation may be discussed through concepts such as Artava Dushti or Apana Vata Vaigunya, while Meda Dhatu and Agni may inform a broader traditional consideration of metabolic status.[14,15]

Such an interpretation requires an actual Ayurvedic assessment that documents Dosha, Dhatu, Agni, Srotas, Prakriti, Ahara and Vihara as appropriate. Obesity alone does not prove a particular Dosha disturbance or Artava Dushti. These are traditional explanatory concepts and should not be presented as direct equivalents of endocrine diagnoses or as established biomedical mechanisms.

7. MANAGEMENT CONSIDERATIONS

Management should follow the cause identified through assessment, symptom burden, metabolic risk and the patient's reproductive goals. Where excess weight contributes to ovulatory dysfunction, sustainable lifestyle measures may support general metabolic health. Persistent oligomenorrhoea or amenorrhoea deserves evaluation rather than being managed on the basis of BMI alone.

7.1 Dietary and activity measures

Dietary advice should be individualised and aim for a balanced intake of protein, fibre-rich foods, complex carbohydrates, unsaturated fats, vitamins and minerals. Physical activity can include aerobic exercise and resistance training according to ability, preferences and clinical circumstances. Weight management, when appropriate, should be gradual and realistic.

7.2 Medical management

Treatment depends on the confirmed diagnosis and the patient's priorities. For PCOS, options may include hormonal contraceptives or other evidence-based therapies according to symptoms, contraindications and reproductive plans; metformin may be considered in selected patients with metabolic indications.[7] Prolonged anovulation can have endometrial implications, so persistent cycle disturbance should be assessed and managed by a qualified clinician.

7.3 Ayurvedic considerations

An Ayurvedic consultation may document Prakriti, Agni, Meda Dhatu, Apana Vata, dietary patterns and daily routine. Any medicines or procedures should be selected by a qualified practitioner after reviewing the diagnosis, safety, contraindications and possible interactions. Ayurvedic care should not delay indicated

investigations or replace necessary evidence-based treatment.

8. CLINICAL SIGNIFICANCE

This case-report framework highlights the value of assessing menstrual history, anthropometry, diet, activity and metabolic risk together. An integrated approach can prompt evaluation of endocrine and metabolic contributors without presuming that obesity is the sole cause. Ayurvedic concepts may add a traditional interpretive perspective when the assessment is explicitly documented and the limits of the framework are acknowledged.

9. LIMITATIONS

A single case cannot establish causality or show that the same explanation applies to other women. BMI is an indirect measure and does not fully describe body composition or metabolic status. Most importantly, the supplied source document states that its patient details and investigations are illustrative and unverified. Without actual clinical data and investigation results, no definitive diagnosis can be assigned. Ayurvedic interpretations likewise require a separately documented assessment.

10. CONCLUSION

Menstrual irregularities in women with obesity may involve metabolic, hormonal and reproductive factors, but the association does not establish a cause in an individual patient. Assessment should begin with a detailed menstrual and medical history, appropriate examination and investigations directed by the differential diagnosis. Ayurvedic concepts such as Artava, Apana Vata and Meda Dhatu may be discussed as a traditional perspective alongside contemporary clinical reasoning, provided they are not treated as substitutes for biomedical assessment. Further well-documented clinical work is needed to examine how these frameworks may be discussed together.

REFERENCES

1. Reed BG, Carr BR. The normal menstrual cycle and the control of ovulation. In: Feingold KR, Anawalt B, Blackman MR, et al., editors. Endotext [Internet]. South Dartmouth (MA): MDText.com, Inc.; 2000.

2. Munro MG, Critchley HOD, Broder MS, Fraser IS; FIGO Working Group on Menstrual Disorders. FIGO classification system (PALM–COEIN) for causes of abnormal uterine bleeding in nongravid women of reproductive age. Int J Gynaecol Obstet. 2011;113(1):3–13.

3. World Health Organization. Obesity: preventing and managing the global epidemic. Report of a WHO consultation. WHO Technical Report Series 894. Geneva: World Health Organization; 2000.

4. Pasquali R, Pelusi C, Genghini S, Cacciari M, Gambineri A. Obesity and reproductive disorders in women. Hum Reprod Update. 2003;9(4):359–372.

5. Practice Committee of the American Society for Reproductive Medicine. Obesity and reproduction: a committee opinion. Fertil Steril. 2021;116(5):1266–1285.

6. Dunaif A. Insulin resistance and the polycystic ovary syndrome: mechanism and implications for pathogenesis. Endocr Rev. 1997;18(6):774–800.

7. Teede HJ, Tay CT, Laven JJE, Dokras A, Moran LJ, Piltonen TT, et al. Recommendations from the 2023 International Evidence-based Guideline for the Assessment and Management of Polycystic Ovary Syndrome. Fertil Steril. 2023;120(4):767–793.

8. Gordon CM, Ackerman KE, Berga SL, Kaplan JR, Mastorakos G, Misra M, et al. Functional hypothalamic amenorrhea: an Endocrine Society clinical practice guideline. J Clin Endocrinol Metab. 2017;102(5):1413–1439.

9. American College of Obstetricians and Gynecologists. Diagnosis of abnormal uterine bleeding in reproductive-aged women. Practice Bulletin No. 128. Obstet Gynecol. 2012;120(1):197–206.

10. Teede HJ, Misso ML, Costello MF, Dokras A, Laven J, Moran L, et al. Recommendations from the international evidence-based guideline for the assessment and management of polycystic ovary syndrome. Fertil Steril. 2018;110(3):364–379.

11. Hall JE. Neuroendocrine control of the menstrual cycle. In: Hall JE, Hall ME. Guyton and Hall Textbook of Medical Physiology. 14th ed. Philadelphia: Elsevier; 2021.

12. Mountjoy M, Ackerman KE, Bailey DM, Burke LM, Constantini N, Hackney AC, et al. 2023 International Olympic Committee's consensus statement on Relative Energy Deficiency in Sport (REDs). Br J Sports Med. 2023;57(17):1073–1097.

13. Rotterdam ESHRE/ASRM-Sponsored PCOS Consensus Workshop Group. Revised 2003 consensus on diagnostic criteria and long-term health risks related to polycystic ovary syndrome (PCOS). Hum Reprod. 2004;19(1):41–47.

14. Agnivesha. Charaka Samhita. Revised by Charaka and Dridhabala. Sutra Sthana and Chikitsa Sthana. Varanasi: Chaukhambha Bharati Academy.

15. Sushruta. Sushruta Samhita. Sutra Sthana and Sharira Sthana. Varanasi: Chaukhambha Sanskrit Sansthan.