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A Study On Gudavalis And Its Applied Anatomy

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Abstract:

The anatomical and functional importance of *Guda* (anus) has been emphasized in *Ayurvedic* literature, particularly in the context of *Pranayatana* and *Sadhyapranahara Marma*. This study aims to resolve the prevailing controversies surrounding the concept of *Gudavalis* by correlating classical *Ayurvedic* descriptions with modern anatomical interpretations. A multidimensional methodology was employed, including literary review, cadaveric dissection, and a clinical trial involving *Mula Bandha* practices. The study's findings contribute toward an integrative understanding of *Ayurveda* and contemporary science, particularly in anorectal disorders.

Keywords: *Guda*, *Gudavali*, *Mula Bandha*, Cadaveric Study, Applied Anatomy, *Ayurveda*

Introduction

An accurate understanding of anatomy and physiology is crucial for maintaining health and managing disease. In *Ayurveda*, *Guda* and the three *Gudavalis* are key structures involved in proper defecation, governed by *Apana Vata*. While classical texts like those of *Sushruta*, *Vagbhata*, and *Charaka* describe their significance, their anatomical and clinical correlations with modern science remain underexplored. Given the rising prevalence of anorectal disorders such as haemorrhoids, fistula, and rectal prolapse, this study aims to bridge traditional *Ayurvedic* concepts with modern anatomical understanding. Special emphasis is placed on the structural and functional significance of *Gudavalis* and the therapeutic role of *Mula Bandha* in enhancing pelvic floor function and managing anorectal conditions.

Aim of the Study

This research aims to clarify the anatomical concept and clinical significance of *Gudavalis* by integrating insights from *Ayurvedic* texts and modern anatomy. Through a multidimensional study by the Department of *Rachana Shareera*, it seeks to establish a clear, universally acceptable understanding that strengthens both *Ayurvedic* research and confidence in its foundational principles.

Objectives of the Study

1. To elucidate the anatomy of *Gudavalis* as per descriptions available in classical *Ayurvedic* texts and ancient literature, and to identify and analyze their possible corresponding physical structures in the context of modern anatomical science.
2. To study the applied anatomy of *Gudavalis*, focusing on their functional relevance in health and disease, particularly within the anorectal region.

3. To evaluate the clinical application of *Mula Bandha* (perineal lock) with special reference to *Gudavalis*, examining its potential role in enhancing anorectal health and treating related disorders.

Materials and Methods

Materials (Sources of Data)

1. Literary Sources:

Comprehensive literature on *Guda* and *Gudavali* was reviewed from *Bṛhat-trayī*, *Laghutrayī*, and other classical *Ayurvedic* texts. Additional insights were drawn from research papers, journals, and earlier studies on the anatomical and clinical relevance of *Gudavali*.

2. Scientific Integration:

A focused study on *Rachana Śarīra* (anatomy) of *Guda* and *Gudavali* was conducted using both *Ayurvedic* texts and modern anatomical references.

Methods of Data Collection

1. Literary Study:

A detailed comparative analysis of *Ayurvedic* references related to *Gudavali* was conducted and correlated with contemporary anatomical understanding.

2. Cadaveric Study:

Anatomical dissection was performed on three adult cadavers in the Department of *Rachana Śarīra* to identify structures analogous to *Gudavali*. Findings were analyzed alongside both *Ayurvedic* and modern anatomical interpretations.

3. Clinical Study Design:

The clinical study assessed the applied anatomy and function of *Gudavali* using the following design:

Group	Subgroup	Condition	Patients
A	A1 – Healthy Control	Healthy (no symptoms)	15
	A2 – Healthy + <i>Mula Bandha</i>	Healthy + Intervention	15
B	B1 – <i>Arsha</i> Control	<i>Arsha</i> (Hemorrhoids)	15
	B2 – <i>Arsha</i> + <i>Mula Bandha</i>	<i>Arsha</i> + Intervention	15
C	C1 – <i>Bhagandara</i> Control	<i>Fistula-in-ano</i>	15
	C2 – <i>Bhagandara</i> + <i>Mula Bandha</i>	<i>Fistula</i> + Intervention	15
D	D1 – <i>Gudabhramsha</i> Control	Rectal Prolapse	15
	D2 – <i>Gudabhramsha</i> + <i>Mula Bandha</i>	Prolapse + Intervention	15

- Subjects were selected using clinical evaluation based on inclusion/exclusion criteria.
- *Mula Bandha* was practiced for 3 months.
- Patients were assessed over 6 months, and data analyzed via SPSS 20.0.

Mula Bandha Technique

Participants were taught *Mula Bandha* in three progressive stages:

- **Stage 1:** Seated in meditative posture (*Siddhāsana* or *Siddha Yoni Āsana*), perform gentle perineal contractions – 20 repetitions.
- **Stage 2:** Sustain the contraction as long as possible with normal breathing.
- **Stage 3:** Incremental contraction leading to full perineal hold.

Correct performance was ensured through supervision and guided sessions.

Assessment Criteria

1. Anatomical Evaluation:

- Cadaveric dissection was used to identify *Gudavali* positions.

2. Clinical Evaluation:

- Inspection, palpation, DRE, proctoscopy.
- Laboratory tests and advanced imaging: USG, MRI, TRUS, and Anorectal Manometry.

Inclusion Criteria

- Age 20–80 years
- Diagnosed cases of *Arsha*, *Bhagandara*, or *Gudabhramsha*
- Healthy volunteers within criteria

Exclusion Criteria

- Systemic disorders, malignancy, extremes of age
- Substance abuse, terminal illness, HIV, uncontrolled diabetes

Results

Cadaveric Correlation:

- *Samvarini*: ~1.5–2 cm above the *Gudostha*, near pectinate line
- *Visarjani*: 1.5 *Angula* above *Samvarini*, at the anorectal ring
- *Pravahini*: 1.5 *Angula* above *Visarjani*, near middle Houston's valve

Clinical Observations:

- *Mula Bandha* improved pelvic tone, decreased heart rate and BP
- Patients experienced improved bowel control and relaxation
- Significant therapeutic benefits were observed across intervention groups

Discussion

Findings support descriptions by *Sushruta* and *Vagbhata*, while *Charaka*'s omission may imply conceptual differences. *Aruna Datta*'s commentary clarifies functions:

- *Pravahini*: Drives *Mala Pravahana* (propulsion)
- *Visarjani*: Enables *Bahirvisarjana* (expulsion)
- *Samvarini*: Aids in closure/sphincteric function

Mula Bandha's action on parasympathetic fibers aligns with yogic and neurophysiological perspectives, reinforcing its utility in non-invasive anorectal therapy.

This study assessed the effect of *Mūla Bandha* on *Gudavalis* in both healthy individuals and patients with *Bhagandara*, *Arśa*, or *Gudabhramśa*, using various demographic, clinical, and anatomical parameters.

- Gender & Marital Status: Majority were males (78.3%) and married (81.7%), likely due to sociocultural factors.
- Education: Most participants (84.1%) had only up to higher secondary education, highlighting the need for better health literacy.
- Addiction & Diet: 76.7% were non-addicted; 60.8% were non-vegetarian, which may increase the risk of anorectal diseases.
- Religion & Appetite: Hindu population was predominant; 83.3% had normal appetite.
- *Prakṛti* & *Koṣṭha*: Most had *Vāta-Pittaja* or *Vāta-Kaphaja Prakṛti* and *Krūra/Madhya Koṣṭha*, indicating a predisposition to anorectal disorders.

Clinical Findings

- Passing Flatus:
 - *Arśa* group: 93.3% improved with *Mūla Bandha* vs. 40.0% in control.
 - *Bhagandara* group: 66.7% improved with intervention vs. 60.0% in control.

These results support the clinical effectiveness of *Mūla Bandha* in improving anorectal symptoms, especially in *Arśa* and to a lesser extent in *Bhagandara*.

Conclusion

Gudavalis described in *Ayurveda* show identifiable anatomical counterparts. Their functional importance in defecation is affirmed through both classical commentary and modern research. *Mula Bandha* serves as a promising therapeutic tool, enhancing pelvic function and supporting holistic management of anorectal disorders. This research establishes a vital bridge between *Ayurveda* and modern anatomy, validating integrative approaches in clinical practice.