



Surgery

CURRENT RESEARCH UPDATE AND FUTURE PROSPECTS OF SHALYA TANTRA: A COMPREHENSIVE REVIEW OF AYURVEDIC SURGICAL TECHNIQUES AND MODERN INTEGRATION

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ABSTRACT Shalya Tantra, the surgical branch of Ayurveda, is undergoing transformative advancements as it integrates traditional Ayurveda surgical practices with modern medical technologies. The Central Council of Indian Medicine (CCIM), with the approval of the Government of India, has introduced amendments to the Indian Medicine Central Council (Post Graduate Ayurveda Education) Regulations, 2016. The amendment, notified on November 19, 2020, aims to enhance the practical training of postgraduate (PG) scholars specializing in **Shalya Tantra (Ayurvedic Surgery)**. This ensures that PG scholars develop competencies to perform specific surgical and para-surgical procedures independently. The *Ashta Vidha Shastra Karma* are being implemented in various forms in Modern Surgery even today. This study reviews recent research and developments in Ayurveda surgical interventions, highlighting their scientific validation and evolving role in contemporary healthcare along with Surgical training of modern procedures has been mandated for Shalya Tantra postgraduates by National Commission of Indian System Of Medicine (NCSIM) to enhance their expertise while preserving Ayurveda principles. The research methodology includes a comprehensive review of clinical trials, published articles, and experimental studies from reputed Ayurveda institutions. Key findings indicate significant improvements in surgical precision through modern tools, enhanced efficacy of surgical and parasurgical procedures like *Ashta Vidha Shastra Karma*, *Kshara Karma*, *Agnikarma*, *Raktamokshana*, promising outcomes in *Vrana Chikitsa* (wound management) and *Bhagna* (orthopedic treatments). Additionally, the study emphasizes the need for standardization and evidence-based research to establish Ayurveda surgical methods as credible and effective alternatives. The integration of Ayurveda with modern healthcare systems underscores its potential in offering holistic, minimally invasive, and patient-centric surgical treatments.

KEYWORDS : NCSIM, Recent research update, Shalya Tantra**INTRODUCTION**

Shalya Tantra, the surgical branch of Ayurveda, has been experiencing significant advancements as it integrates traditional Ayurveda surgical practices with modern medical technologies. This branch primarily deals with surgical interventions, parasurgical procedures, wound management, and trauma care.¹ The eight types of surgical procedure i.e. *Chedan Karma* (Excision, Amputation), *Bhedana Karma* (Incision), *Lekhana Karma* (Scraping), *Aharana Karma* (Extraction), *Eshana Karma* (Probing), *Vyadhana* (Paracentesis Or Puncturing), *Visravana Karma* (Bloodletting Or Draining of Pus) and *Seevana Karma* (Suturing) form the fundamental basis of all surgical techniques given by *Acharya Sushruta*.² These principles have remained unchanged over time and continue to be integral to surgical practice.³ Recent research has aimed at validating these methods through scientific studies, refining techniques, and enhancing patient outcomes with minimal invasiveness. The purpose of this study is to analyze current advancements in *Shalya Tantra* and their impact on modern healthcare. The Indian Medicine Central Council Act, 1970, governs the education and practice of Ayurveda in India.⁴ As part of its ongoing efforts to modernize and standardize Ayurveda education, the CCIM periodically revises its regulation.⁵ The recent amendment to the Postgraduate Ayurveda Education Regulations underscores the importance of *Yogya* (practical skill development) in surgical disciplines. The NCSIM, had introduced well defined Undergraduate & Post-Graduate Competency Based Dynamic Curriculum (CBDC) for Shalya Tantra subject.⁶

MATERIALS AND METHODS

This research is based on a review of published articles, clinical trials, and experimental studies conducted at various Ayurveda institutions, including the All India Institute of Ayurveda (AIIA), National Institute of Ayurveda (NIA), Institute of Teaching and Research in Ayurveda (ITRA), Banaras Hindu University (BHU) with a new directive introduced by Commission for Indian System of Medicine (NCSIM) integrating modern surgical training into Ayurveda to enhance the expertise of Shalya Tantra postgraduates. The data was collected from peer-reviewed journals, institutional reports, and government websites and health portals. Various *Ashtavidha Shastra Karma* are not merely eight specific surgical procedures but rather represent the fundamental principles applicable to all surgical interventions. These principles serve as the foundation for various surgical techniques and can be utilized in any surgical procedure. Ayurveda surgical procedures, including *Kshara Karma*, *Raktamokshana*, *Agnikarma*, and *Marma Chikitsa* were examined for their efficacy and clinical relevance.

RESULTS AND DISCUSSION**1. Integration Of Modern Surgical Techniques**

Premier Ayurveda institutions have incorporated modern diagnostic

and surgical tools such as laparoscopy, endoscopy, and minimally invasive procedures. This has improved precision, reduced complications, and enhanced surgical success rates. Comparative studies highlight that these integrations reduce patient recovery time while maintaining Ayurveda principles. This revision ensures that PG scholars develop the necessary competencies to independently perform specific surgical and para-surgical procedures upon the completion of their degree.⁷

2. Ayurveda Surgical Principles: The Enduring Legacy of Trividha Karma and Ashtavidha Shastra Karma: The Timeless Principles of Surgery

Acharya Sushruta described the three essential phases of a surgical procedure, known as *Trividha Karma*, which include *Poorva Karma* (preoperative measures), *Pradhan Karma* (operative procedures), and *Paschat Karma*⁸ (postoperative measures). Among these, *Ashtavidha Shastra Karma* fall under *Pradhan Karma*, representing the core operative techniques. These eight fundamental surgical procedures serve as the foundation of all surgical interventions, forming the essential steps that define the very essence of surgery. Their relevance remains timeless, underscoring their significance in both traditional and modern surgical practices. With a broad perspective, *Ashtavidha Shastra Karmas* can be regarded as the foundation of modern surgical practices. This may explain why *Acharya Sushruta* continues to be revered not only by Ayurvedic practitioners but also by modern surgeons. While contemporary surgical techniques are constantly evolving and advancing, these fundamental *Shalya Karma* have retained their significance. As the roots of all surgical procedures, they remain indispensable, as foundational principles are always more essential than their subsequent developments.

3. Advancements in Kshara Karma and Agnikarma

Research studies on *Kshara Karma*^{9,10}, (Alkaline Therapy) and *Agnikarma*¹¹ (Thermal Cauterization) show promising results in treating conditions like hemorrhoids, fistula-in-ano, and fissures. Clinical trials indicate that these procedures have lower recurrence rates and fewer post-surgical complications compared to conventional surgical methods.

4. Wound Healing and Ayurveda Formulations

Herbal-based formulations such as *Jatyadi Taila*, *Panchavalka Kwatha*, and honey-based dressings¹² have been studied for their antimicrobial properties and faster healing rates. Research suggests that these natural remedies can serve as effective alternatives to synthetic wound care solutions with minimal side effects.¹³

5. Role of Raktamokshana (Bloodletting Therapy) in Chronic

Disorders

Clinical trials have demonstrated the efficacy of *Raktamokshana* in managing chronic inflammatory conditions such as varicose veins, skin diseases, and musculoskeletal disorders. Studies suggest that controlled bloodletting helps in detoxification, improves circulation, and reduces inflammation, supporting traditional Ayurveda claims.¹⁴

6. Ayurveda Approach to Orthopedic and Sports Injuries

Non-invasive Ayurveda treatments like *Marma Chikitsa* (vital point therapy)¹⁵ and *Pinda Sweda*¹⁶ (herbal bolus therapy) are being evaluated for their role in managing fractures, ligament injuries, and joint disorders. Research indicates that these therapies can enhance rehabilitation and pain management, offering an alternative to conventional physiotherapy and pain relief methods.¹⁷

7. Integration of Modern Surgical Training in Ayurveda: A New Directive by NCSIM

Methodology for supplementing modern advances, scientific and technological development in Indian System of Medicine (SMASD-ISM).¹⁸ To accomplish the requirement under subsection (h) of section 2 of National Commission for Indian System of Medicine Act 2020 regarding, supplementation of modern advances, scientific and technological developments in Indian System of Medicine (SMASD-ISM), all the fourteen departments as mentioned in clause (F) of sub-regulation (1) of regulation 9, shall be treated as fourteen verticals in addition there shall be two more verticals one each for education and research and each vertical shall be supplemented, enriched and updated with relevant and appropriate advances and developments in the area of diagnostic tools, conceptual advancements and emerging areas like (ii) Diagnostic Advancements; (iv) Surgical Technique or Technology;

NCSIM has mandated surgical training for Shalya Tantra postgraduates to enhance their expertise in modern procedures while preserving Ayurvedic principles. The National Commission for Indian System of Medicine (NCSIM) has recently issued a directive making it mandatory for postgraduate students specializing in Shalya Tantra (Surgery) to undergo training in various modern surgical procedures. This initiative aims to enhance the surgical expertise of Ayurvedic practitioners, enabling them to perform select contemporary surgical interventions while staying rooted in Ayurvedic principles.

8. Amendment to Postgraduate Ayurveda Education Regulations: Enhancing Surgical Competency in Shalya Tantra

Regulatory Amendment: As per the notification (F. No. 4-90/2018-P.G. Regulation (Ayurved)), a new sub-regulation (9) has been added to **Regulation 10 of the Indian Medicine Central Council (Post Graduate Ayurveda Education) Regulations, 2016**. This sub-regulation mandates practical training in surgical procedures for PG scholars specializing in Shalya Tantra and Shalakya Tantra. The objective is to ensure that these scholars gain hands-on experience and attain the capability to independently perform specified procedures post-graduation which include about total 39 *Shashttra Karma* (Operative Procedure in General Surgery for Shalya Tantra PG study ; Total 20 *Shashttra Karma* for Shalakya Tantra i.e. including 9 *Netra Shashttra Karma* (Ophthalmic Surgical Procedures); 3 for *Nasa Shashttra Karma* (Surgery in Rhinology); 3 *Karna Shashttra Karma* (Surgery in Otology); 3 for *Mukha Roga Shashttra Karma* (Surgery for Throat, Palate & Tonsil) and 2 for *Danta Shashttra Karma* (Dental Surgical Procedure)

Scope Of Practical Training:

During their course ostudy, PG scholars specializing in **Shalya Tantra** and **Shalakya Tantra** will undergo rigorous training, equipping them with both theoretical knowledge and practical expertise. The structured training program will include, but is not limited to, the following aspects:

- 1. Hands-on Training:** Scholars will actively engage in surgical and para-surgical procedures relevant to their specialization.
- 2. Supervised Practice:** Initial procedures will be conducted under expert supervision to ensure patient safety and skill refinement.
- 3. Independent Performance:** Upon achieving competency, scholars will be required to perform specific procedures independently before completion of the program.

Implications for Ayurveda Education and Practice:

This amendment represents a significant step in integrating Ayurveda with contemporary healthcare practices. By equipping PG scholars with practical surgical skills, the regulation ensures that they can

competently handle various medical conditions within their domain. This enhancement is expected to:

- Improve the credibility and efficacy of Ayurvedic surgical practices.
- Expand the role of Ayurveda practitioners in integrative medicine.
- Bridge the gap between traditional knowledge and modern surgical techniques.
- Strengthen patient trust in Ayurveda-based surgical interventions.

9. Key Aspects of the Notification:

I. Incorporation of Modern Surgical Techniques

Postgraduate students in Ayurveda will now receive structured training in specific general and specialized surgical procedures, equipping them with advanced skills to handle complex cases effectively.

II. Bridging Ayurveda and Contemporary Medicine

By integrating evidence-based modern surgical practices with traditional Ayurveda surgical methods, this initiative aims to enhance patient outcomes and broaden the scope of Ayurveda surgical interventions through the incorporation of Anesthesia, Antibiotics, and Analgesics.

III. Standardization and Legal Recognition

The directive aims to establish a uniform standard for Ayurvedic surgical education, strengthening the professional credibility of Ayurvedic surgeons within the healthcare system.

IV. Recognition of Ayurveda's Surgical Legacy

Ayurveda has a rich history of surgical contributions, dating back to *Acharya Sushruta*, the "Father of Surgery." The new directive acknowledges and builds upon these ancient principles while incorporating modern advancements to enhance the effectiveness of surgical practices.

V. Future Implications

- a. Enhancing the practical surgical competence of Ayurveda postgraduates.
- b. Promoting collaborative healthcare by integrating Ayurveda and modern medical practices.
- c. Strengthening the role of Ayurveda surgeons in mainstream medical practice.

This directive marks a significant step toward modernizing Ayurveda surgical education while maintaining its traditional essence, ensuring well-trained professionals capable of contributing effectively to healthcare.

10. Standardization and Evidence-Based Research

Ongoing efforts are being made to standardize Ayurveda surgical procedures and validate them through clinical trials. Standardization of *Ksharasutra* therapy, Ayurveda anesthesia, and post-operative care protocols using herbal medicines is a key focus. Evidence-based research aims to establish Ayurveda surgery as a credible alternative in integrated healthcare.

CONCLUSION

The field of Shalya Tantra is undergoing substantial advancements, bridging the gap between traditional Ayurveda surgical methods and modern scientific research. The integration of contemporary surgical tools, improved parasurgical techniques, and standardization efforts demonstrate its evolving role in healthcare. Continued exploration and validation of Ayurveda surgical principles through research and clinical trials are essential to ensuring wider acceptance and efficacy in the modern medical landscape. These developments position Shalya Tantra as a significant contributor to holistic and integrative medicine. The amendment to the **Postgraduate Ayurveda Education Regulations, 2016**, marks a progressive reform in Ayurveda education. By mandating structured practical training in **Shalya Tantra**, the regulation seeks to produce highly skilled Ayurveda surgeons capable of independently performing critical procedures. This initiative is a step toward enhancing the global recognition and clinical effectiveness of Ayurvedic surgical sciences.

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