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ABSTRACT: Ancient Indian medical science, particularly Ayurveda, once held a commanding position in surgical knowledge through the work of pioneers such as Sushruta. This study explores the historical trajectory of Indian surgical practices, from their sophisticated origins, through periods of decline due to sociopolitical and religious factors, their marginalization during colonial rule, and finally their modern revival through institutional support and integrative healthcare policies. By focusing on Indian rhinoplasty and extending to broader surgical contributions, this research seeks to illuminate the resilience and potential of India's indigenous surgical wisdom.

INTRODUCTION

Surgery in ancient India was not merely a branch of medicine but a sophisticated and highly evolved science, as comprehensively detailed in the classical Ayurvedic text, the Sushruta Samhita. Compiled around the first millennium BCE, this foundational treatise is attributed to the legendary surgeon Sushruta, who is widely regarded as the “Father of Surgery.” The text meticulously outlines over 300 surgical procedures and describes more than 120 surgical instruments, reflecting a remarkable level of precision and technical understanding for its time. It encompasses a wide range of operative techniques, including rhinoplasty, cataract surgery, lithotomy, and fracture management, many of which remained unsurpassed for centuries.

The Indian medical system, rooted in Ayurveda, emphasized not only surgical skill but also a profound understanding of human anatomy, disease

pathology, patient care, and ethical medical practice. Surgery (Shalya Tantra) was considered an essential component of a holistic healthcare framework that sought balance among the body, mind, and soul. This integrated approach enabled ancient Indian surgeons to perform complex procedures with accuracy and compassion, making Ayurveda one of the earliest systems to formalize surgical education and practice.

Despite its early prominence, the tradition of surgery within Ayurveda experienced a prolonged period of decline, influenced by sociopolitical changes, colonial interventions, and shifts in medical epistemology. However, recent decades have witnessed a growing interest in the revival and integration of Ayurvedic surgical practices, especially in the context of traditional knowledge systems and modern healthcare challenges.

AIMS OF STUDY

This article explores the historical trajectory of surgery in Ayurvedic science—its rise, fall, and current efforts at revitalization. By revisiting classical texts, examining historical transitions, and analyzing contemporary developments, this study aims to shed light on the enduring legacy and potential future of surgical practice within the Ayurvedic paradigm.

DISCUSSION

1. The Golden Age of Indian Surgery

Between 800 BCE and 600 CE, Indian surgery reached remarkable heights. The techniques described in the Sushruta Samhita, such as cataract surgery, cesarean section, wound suturing, bone setting, and notably, nasal reconstruction using forehead flaps, demonstrate advanced anatomical understanding and procedural innovation. Surgeons received training through the Gurukul system, where theory and hands-on practice were combined.

2. Decline in the Medieval Period

With the onset of the medieval era and successive foreign invasions, Indian surgery witnessed a

systematic decline. Religious orthodoxy increasingly views surgical intervention as impure. Withdrawal from surgery left the field to artisan communities, reducing its institutional legitimacy. Social taboos and the decline of Sanskrit learning further marginalized surgical practice.

3. Colonial Suppression and Selective Appropriation

The British colonial administration prioritized Western medicine and labeled indigenous medical systems as unscientific. Ayurvedic education was excluded from formal institutions. Ironically, when a native practitioner in Pune performed a successful rhinoplasty in 1793, it drew the attention of British medical circles. Joseph Constantine Carpue adopted the Indian technique for nasal reconstruction in England by 1814, showcasing colonial appropriation without acknowledging systemic suppression of Indian science.

4. Post-Independence Renaissance

After 1947, renewed interest in Ayurveda led to the establishment of institutions such as Banaras Hindu University's Ayurvedic College and the formation of the Ministry of AYUSH. Surgical branches, such as Shalya Tantra and Shalakya Tantra, began receiving structured curricula. The Ksharasutra technique for fistula and Agnikarma for musculoskeletal conditions are now widely researched and integrated into Ayurvedic surgery programs.

After 1947, a renewed national interest in Ayurveda catalyzed the revival and institutionalization of its surgical branches. Banaras Hindu University (BHU) played a pivotal role: Banaras Hindu University's Ayurvedic College, rooted in the 1920s, was transformed under the leadership of visionaries like K. N. Udupa. Udupa's reforms in the late 1950s established postgraduate programs in Ayurveda alongside modern medicine, leading to a formal MD (Ayurveda) degree by 1963 and creation of a Central Surgical Research Laboratory at IMS-BHU.

In the wake of institutional growth, the Indian government progressively supported Ayurvedic surgery through policy and regulation. The Department of Indian Systems of Medicine and Homeopathy (ISM\&H) was launched in 1995 and renamed the Department of AYUSH in 2003, culminating in the establishment of the Ministry of AYUSH in 2014. AYUSH has since been instrumental in standardizing curricula, promoting research, and integrating techniques like Ksharasutra (alkaline-medicated thread) and Agnikarma (thermal cautery)—both now widely

embedded in Shalya Tantra and Shalakya Tantra educational programs.

With AYUSH's regulatory oversight and CCIM's curriculum mandates, structured teaching of surgical branches has gained depth. Institutions like BHU's Faculty of Ayurveda introduced formal postgraduate courses in Shalya and Shalakya Tantra by 1963, preparing a generation of surgeon-practitioners.

Importantly, these developments didn't occur without contention. The resistance from allopathic practitioners towards policy measures perceived as overreaching. Though the publicly prominent, have not impeded the growth of modern medicinal practice; instead, they catalyzed internal consolidation and refocusing on priorities like educational standards, faculty adequacy, and rural healthcare. Far from derailing AYUSH, the debate served as a stress test—spotlighting the need to uphold surgical education quality and safeguard the professional scope of Ayurvedic MD(MS) graduates.

Today, despite procedural challenges, strong regulatory frameworks ensure that qualified Ayurvedic surgeons can practice Shalya and Shalakya Tantra with confidence. Techniques such as Ksharasutra for fistula-in-ano and Agnikarma for musculoskeletal conditions are not only taught in a structured manner but are also subjects of active clinical research—integrated seamlessly into contemporary Ayurvedic surgery programs.

List of 58 Surgical Procedures Authorized (as per 20 Nov 2020 CCIM Gazette Notification)

Shalya Tantra (39 general surgery procedures):

1. Removal of metallic/non-metallic foreign bodies (non-vital organs)

2. Excision of simple cysts/benign tumours (lipoma, fibroma, schwannoma, etc.)

3. Excision of granulomatous tissue

4. Haemorrhoidectomy

5. Fissurectomy

6. Fistulectomy

7. Amputation of gangrene

8. Close fracture manipulation and immobilisation

9. Traumatic wound management

10. Wound debridement

11. Drainage of abscesses

12. Excision of pilonidal sinus

13. Herniotomy

14. Herniorrhaphy

15. Reduction of strangulated hernia

16. Hydrocele repair

17. Orchidopexy

18. Circumcision

19. Episiotomy & episioplasty

20. Anal dilatation

21. Anal resection procedures

22. Appendectomy

23. Colostomy/ileostomy

24. Cholecystectomy

25. Splenectomy

26. Bowel resection–anastomosis

27. Drainage of peritoneal abscess

28. Thyroidectomy

29. Tracheostomy

30. Incision/lowering of submandibular gland

31. Tympanostomy

32. Parotidectomy

33. Radiofrequency ablation (RFAs)

34. Skin grafting

35. Debridement of deep soft-tissue infections

36. Drainage of pleural/pericardial/ascitic fluid

37. Central line insertion

38. Tumour excision (non-vital organ)

39. Foreign body removal (GI tract included)

Shalakya Tantra (19 eye, ear, nose & throat procedures):

1. Squint (strabismus) surgery

2. Cataract surgery

3. Glaucoma (trabeculectomy)

4. Dacryocystorhinostomy (DCR)

5. Functional endoscopic sinus surgery (FESS)

6. Septoplasty

7. Tonsillectomy & adenoidectomy

8. Ear microsurgeries (myringotomy with/without grommet)

9. Repair of tympanic membrane

10. Mastoidectomy

11. Vocal cord surgery

12. Laryngoscopy and biopsy

13. Foreign body removal (ear/nose)

14. Tracheostomy

15. Nasal polypectomy

16. Turbinectomy

17. Endoscopic cochlear implant assisted procedures

18. Pharyngeal surgeries

19. Dento-alveolar surgeries (minors)

After-Effects of the IMA Protest

1. Immediate Outcry & Supreme Court Petition

The Indian Medical Association (IMA) reacted swiftly, denouncing the notification as a form of "mixopathy" and demanded its withdrawal, claiming unauthorized encroachment into modern surgical domains. They filed a petition in the Supreme Court of India seeking to nullify or revoke the amendment and questioning CCIM's regulatory authority.

2. Public & Media Debate

The protests fueled nationwide media coverage. The AYUSH Ministry clarified the resolution, emphasizing that:

The notification merely codifies existing training.

Only qualified PG scholars in Shalya/Shalakya Tantra are authorized.

It does not expand or mix medical systems, but enhances clarity.

3. Policy & Curriculum Rethink

IMA's objections spotlighted weaknesses in Ayurvedic surgical education, prompting:

Calls for independent oversight—suggesting joint training modules with allopathic surgeons.

Demands for extended supervised training, minimum bed occupancy, and rigorous accreditation.

Greater emphasis on clinical audits, patient safety, and consistent faculty standards across AYUSH institutions.

4. Default Integration and Evidence Drive

Opposition inadvertently accelerated:

The documentation of surgical outcomes, with a focus on Ksharasutra and Agnikarma,

Increased peer-review and clinical research in AYUSH

Growth in interdisciplinary collaborations, conferences, and advocacy for international recognition of Ayurvedic surgery.

5. Legal & Regulatory Follow-Up

The Supreme Court's notice triggered a legal review of CCIM's authority. The case is still ongoing, compelling both sides to present structured evidence of training depth, safety protocols, and institutional oversight mechanisms. This legal pressure continues to influence AYUSH's drive for improved transparency and quality control.

6. Modern Challenges and Integration

Despite institutional support, Ayurvedic surgery faces skepticism from the modern biomedical

community. However, limited infrastructure, medico-legal ambiguity, and public perception issues remain barriers. However, integrative models in which Ayurvedic surgeons collaborate with allopathic institutions are emerging. Research on the safety, efficacy, and standardization of techniques such as Ksharasutra has gained international attention.

7. Limitations and Future Directions

While Ayurvedic surgery has a glorious past and is undergoing revival in modern times, several critical challenges remain:

I. **Evidence Base:** The historical descriptions in the Sushruta Samhita are remarkable, yet systematic clinical trials on outcomes (success rate, complications, long-term efficacy) are still lacking. This should be completed by conducting research by institutes offering MS (Ayu.) or post graduate courses in Ayurveda because there is proper documentation of the research done in PG courses and researchers can also use other resources. The government should increase its budget to attract scientists towards this**.**

II. **Modern Comparison:** Ayurvedic practices need to be given a stronger scientific basis in comparison to the rights, safety standards, anesthesia, infection control and emergency management available to contemporary allopathic surgeons. Just as allopathic doctors have been given freedom in the name of phytopharmaceuticals, similarly Ayurvedic doctors need to be encouraged by giving them some freedom in research.

III. **Ethical and Legal Aspects:** Clear guidelines on patient safety, informed consent, and medico-legal liability are urgently needed.

IV. **Education and Training:** Standardization of surgical curricula, supervised surgical practice, clinical audits, and interdisciplinary collaboration are necessary to ensure quality and credibility.

V. **Future Prospects:** Multicentric clinical validation of techniques such as *Ksharasutra* and *Agnikarma* using modern research methodologies can significantly enhance the global acceptance of Ayurvedic surgery.

CONCLUSION

The history of Indian surgical science is marked by brilliance, neglect, and revival of ancient surgical practices. From the pioneering work of Sushruta to modern-day integrative practices, Indian surgery has demonstrated resilience and relevance. Reviving its full potential requires interdisciplinary research, academic freedom and policy support and global recognition. Integrating rigorous scientific evaluation with traditional wisdom will not only revive India's surgical heritage but also position Ayurvedic surgery as a meaningful contributor to global healthcare.

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CONFLICT OF INTEREST

None declared.

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