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Integrating Sushruta's Principles With Modern Surgical Case Taking: Toward Holistic Patient Evaluation

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Abstract

Surgical case taking is a critical clinical skill that forms the foundation for accurate diagnosis, risk assessment, and treatment planning. Despite advancements in imaging and interventional diagnostics, the art of eliciting a comprehensive history and performing a focused examination remains central to surgical practice. Studies have consistently shown that a well-taken history contributes to the majority of correct diagnoses even before investigations are conducted. In the context of *Shalyatantra*, Acharya Sushruta emphasized the necessity of understanding both the patient (*Rogi*) and the disease (*Roga*) before initiating any surgical intervention.

Methods: This narrative review draws upon classical Ayurvedic texts such as the *Sushruta Saṃhita*, along with contemporary clinical literature and educational frameworks, to outline a structured and integrative approach to surgical case taking. The four primary domains discussed are demographic profiling, clinical history, examination and diagnosis, and treatment planning.

Results/Discussion: A detailed case history helps in localizing pathology, identifying comorbidities, understanding psychosocial influences, and formulating differential diagnoses. Examination findings and investigations build upon this to arrive at a definitive diagnosis and guide appropriate surgical or conservative management. Integrating Ayurvedic principles—such as *Dashavidha Parikṣha* and *Doṣa-Vikṛti* analysis—enhances personalization of care, especially in pre- and post-operative phases.

Conclusion: Surgical case taking is not merely an administrative task, it is the first therapeutic act. When approached systematically and holistically, it sharpens clinical judgment, guides operative decisions, and ensures safer, more effective, and patient-tailored outcomes.

Keywords – Surgical case taking, Sushruta ,*Rugna-Pariksha*, *Shalyatantra*

Introduction :

Accurate surgical decision-making continues to begin at the bedside, with history-taking serving as a foundational step in diagnosis, risk stratification, and treatment planning. Contemporary studies affirm that a carefully elicited clinical history, coupled with a focused examination, contributes to nearly 80% of all final diagnoses. [1, 2] Even in the era of high-resolution imaging, digital algorithms, and interventional diagnostics, this low-technology yet high-yield process remains one of the most cost-effective tools in patient care. Beyond diagnostic clarity, it plays a vital role in medico-legal safety, fosters patient-doctor trust, and informs preoperative decisions that directly influence outcomes.

Long before modern surgical education codified this approach, *Acharya Sushruta* had emphasized the importance of thorough patient evaluation in *Sushruta Saṃhita*. His systematized methods of *Rogi-Parīkṣā* (patient examination) and *Roga-Parikṣha* (disease evaluation) formed the backbone of clinical reasoning in Shalyatantra (surgical discipline). The tenfold *Dashavidha Parikṣha* outlined in his writings includes factors such as *Prakṛti* (constitution), *doṣa* involvement, *bala* (strength), *satva* (mental strength), and *vyādhi āvasthā* (stage of disease), all of which resemble the modern movement toward precision and personalized medicine. Sushruta's directive of 'no incision should be attempted without a full understanding of the patient and the disease' mirrors today's principles of informed consent and comprehensive risk evaluation. [3,4]

Surgical case taking occupies a critical translational space in clinical practice. It transforms a patient's subjective complaints into objective hypotheses, leading to differential diagnoses and appropriate treatment planning.[5, 6] It also serves to unveil hidden comorbidities, medication interactions, lifestyle factors, and socio-cultural considerations that could impact the surgical course.

This review aims to synthesize the essential components of surgical case taking into a streamlined format that aligns with both modern clinical requirements and Ayurvedic insights. It explores how Ayurvedic diagnostic frameworks such as *Dashavidha* and *Ashtavidha Parīkṣha* can complement contemporary biomedical assessments to enhance the quality of surgical care. Furthermore, the article discusses educational and methodological advancements—from competency-based assessment models to simulation—that can reinforce the importance of clinical history-taking in surgical education.

2. Components of Surgical Case Taking:

2.1 Demographic Profile and Contextual Information :

Surgical case taking begins with collecting essential demographic information that frames the clinical encounter. These include the patient's name, age, gender, religion, occupation, and address. While seemingly routine, each of these carries clinical and contextual significance. Age and gender often help narrow down diagnostic possibilities—for example, appendicitis is more common in young adults, while prostate enlargement predominates in elderly males. Occupation may reveal environmental exposures (e.g., asbestos and mesothelioma) or physical strain-related risks (e.g., hernia in laborers). Religious beliefs may impact consent,

diet, or timing of surgical interventions. Address and region of residence can indicate geographic diseases such as filariasis or tuberculosis. Thus, demographic data are not only important for communication and documentation but also for shaping a culturally competent, context-aware approach to diagnosis and treatment.

2.2 Chief Complaint and History of Present Illness:

The clinical core of surgical case taking begins with the chief complaint, captured in the patient's own words to preserve the authenticity of their symptom narrative. This is followed by a systematic history of present illness (HPI), often structured using frameworks like SOCRATES for pain-related complaints. This format helps explore site, onset, nature, radiation, associated symptoms, timing, exacerbating/relieving factors, and severity. A well-elaborated HPI helps localize pathology, differentiate between acute vs. chronic or inflammatory vs. neoplastic causes, and prioritize diagnostic investigations. Associated complaints—such as vomiting, fever, or weight loss—can significantly enhance the clinical picture and provide early clues toward multisystem involvement or complications.

2.3 Past Medical, Surgical, and Medication History:

Exploring the past medical history offers essential information about predisposing conditions such as diabetes, hypertension, tuberculosis, or thyroid disease, all of which influence surgical risk and healing potential. For example, diabetes is known to impair wound healing and increase infection risk. Past surgical history should detail prior operations, dates, and any complications, as this informs both anatomical changes (e.g., adhesions, scar tissue) and patient response to surgical stress and anesthesia. A meticulous medication history is also vital, including current prescriptions, over-the-counter drugs, supplements, and any known allergies. Certain medications, such as anticoagulants or corticosteroids, can significantly impact operative planning and postoperative recovery, warranting timely adjustment or prophylaxis.

2.4 Family, Personal, and Social History

Understanding the family history may reveal inherited conditions—such as hernias, varicose veins, or malignancies—which have implications for screening and counselling. Equally important is the personal and social history, which includes habits such as smoking, alcohol use, tobacco chewing, recreational drug use, and dietary preferences. These factors not only influence surgical outcomes but also reflect the broader physiological state of the patient. From an Ayurvedic standpoint, these inputs form the basis of *āhāra-vihāra parīkṣā*, which helps assess *doṣa* imbalances and chronicity. Evaluation of bowel and bladder habits, sleep patterns, and psychological stress adds further context to the patient's baseline functioning and supports the prescription of appropriate *pathyā-apathyā* (dietary and lifestyle guidance) before and after surgery.

3. Examination, Diagnosis & Treatment Pathway:

3.1 Review of Systems and Physical Examination:

Following a detailed history, a systematic physical examination is essential to validate clinical hypotheses and identify subtle diagnostic clues.

This begins with a Review of Systems (ROS)-a structured inquiry across all organ systems that ensures no co morbidity or overlooked complaint remains unexamined. This ROS approach reinforces the thoroughness of history-taking and supports differential diagnosis.

The general physical examination includes assessment of vital signs, overall appearance, hydration status, and signs such as anemia, jaundice, or edema. Local examination is guided by the chief complaint and typically begins with the classical steps of inspection, palpation, percussion, and auscultation, as appropriate. In *Ayurvedic* practice, this phase is paralleled by the *Ashtavidha Parīkṣhā* (eight-fold examination), especially *Darshana* (inspection), *Sparsha* (palpation), and *Prashna* (history-taking), which are emphasized in *Shalyatantra*. These techniques collectively help in evaluating anatomical deformities, tenderness, masses, or fluid collections. Special signs like guarding, rigidity, or rebound tenderness may point toward acute abdominal conditions, while systemic signs such as lymphadenopathy or cyanosis offer diagnostic direction.

3.2 Special Signs and Diagnostic Investigations:

In addition to routine examination, certain special clinical signs—like clubbing, cyanosis, or pain scoring (e.g., using the Visual Analogue Scale or Numeric Pain Rating Scale)—provide further diagnostic precision and functional assessment.

These markers often correlate with systemic pathologies such as cardiopulmonary disorders or gastrointestinal malignancies and help assess disease severity.

Diagnostic investigations are then employed to confirm clinical suspicions. These include haematological tests (e.g., CBC, ESR), biochemical panels (e.g., liver and renal function tests), and imaging (e.g., ultrasound, X-ray, CT scan, MRI) depending on the condition. Endoscopy, biopsy, and specialized markers may be used for staging or surgical fitness. In Ayurveda, while laboratory diagnostics are embraced in integrative settings, the insights gained from *Dosha-vikṛti*, *Agni*, and *Mala* assessments during patient examination add significant value in understanding the internal state of balance or pathology. These parameters guide selection of supportive therapies like *Snehana*, *Basti*, Agnikarma or *Kṣharakarma*, if deemed necessary.

3.3 Differential and Final Diagnosis :

A carefully synthesized history, examination, and investigation set lays the foundation for constructing a differential diagnosis—a list of potential clinical conditions that match the patient's profile. These are then refined and narrowed based on examination findings, investigation results, and diagnostic logic, ultimately leading to the final diagnosis. For example, right lower quadrant pain in a middle-aged male may raise suspicion for appendicitis, ileitis, ureteric colic, or even post-surgical adhesions—each with different management approaches. Ayurvedic clinicians also

refer to the classification of *Naḍivraṇa*, *Gulma*, or *Udara rogas*, aligning symptoms with internal *Doshaj* pathology, chronicity, and *Srotas* involvement.The process of diagnosis in both systems aims at reaching a level of certainty that supports safe and effective intervention, whether surgical or conservative. Importantly, *Suśhruta* emphasized that diagnosis must consider both *Rogī bala* (patient strength) and *Roga bala* (disease strength), reminding the surgeon to assess the operative indication beyond anatomical correctness.

3.4 Treatment Planning: Medical and Surgical Interventions :

Once the diagnosis is established, a treatment plan is formulated which may involve either conservative management or surgical intervention, depending on the severity, stage, and nature of the disease.

Medical management : may include pharmacological agents, dietary guidance (*Pathya-apathya*), and Panchakarma therapies for purification and restoring systemic balance. For example, internal medications may be prescribed for diseases associated with Ama (Undigested Toxins/ Metabolites) , or *Basti (*Medicated enema) may be considered in chronic conditions involving *Vata dosha* and pathology of lower Gastrointestinal system.

In **surgical conditions** : treatment is planned across three phases: pre-operative, operative, and post-operative care. Pre-operative planning includes fitness evaluation, consent, and preparation (e.g., bowel preparation, antibiotic prophylaxis). Intraoperative procedures vary from open to minimally invasive approaches, and may be aided by innovations like ADR (Automatic Drug-Release) *Kṣharasutra* therapy in integrative anorectal surgery. Post-operative care includes wound management, infection control, analgesia, and rehabilitative therapies. *Ayurvedic* adjuvants like *Haridradi taila*, *Jatyādi ghṛta*, or *Triphala* may be used for local applications or systemic support, enhancing recovery and minimizing recurrence.

Thus, treatment planning in surgical practice is inherently multidisciplinary, and when combined with *Ayurvedic* principles, offers a personalized, function-oriented and holistic care model tailored to individual patient needs.

4. Discussion, Integration & Clinical Significance:

4.1 Clinical Judgment and Surgical Decision-Making:

Sound clinical judgment, particularly in surgical practice, hinges on the information harvested during case taking. A thorough understanding of the patient's history directly influences risk-benefit analyses, selection of surgical technique, perioperative planning, and postoperative rehabilitation. It helps determine the urgency of surgery, appropriateness of conservative trials, and necessity for further investigations. In modern evidence-based practice, accurate documentation from the case history supports decision audits, medico legal safety, and clinical research. Teaching surgical trainees to value this skill as much as technical competence is crucial, as data increasingly shows that preventable surgical errors are more often linked to poor judgment and inadequate assessment than operative skill alone.

4.2 Integration of *Ayurvedic* Principles :

The *Ayurvedic* model of surgical evaluation, especially as developed in *Shalyatantra*, emphasizes a multidimensional view of the patient. *Sushruta's* approach to *Roga-Rogi Parikṣha* combined physical, mental, and spiritual assessments to gauge both the disease and the patient's capacity to endure intervention. Tools such as *Dashavidha Pariksha* and *Ashtavidha Parikṣha* serve as valuable frameworks that continue to be clinically relevant today. Elements like *Prakṛti* (constitution), *Bala* (strength), *Agni* (digestive capacity), *mala* (excretory pattern), and *Sattva Bala* (mental resilience) provide insight into patient-specific risks and recovery potential. Integration of such parameters in the modern setting supports personalized pre-operative and post-operative protocols, enhancing the efficacy and acceptability of care. Additionally, Ayurvedic methods such as *Kṣharasutra*, *Basti karma*, and *lepa* therapy, when chosen appropriately, become excellent adjuncts in the surgical care spectrum.

4.3 Summary :

Surgical case taking remains the cornerstone of sound clinical and operative outcomes. Its power lies in its simplicity: listening, observing, and asking the right questions at the right time. In a rapidly evolving healthcare landscape—dominated by technology, sub specialization, and data-driven algorithms—this fundamental art must be preserved, taught, and innovatively integrated. The convergence of traditional *Ayurvedic* diagnostics with modern biomedical models opens up new avenues for holistic, patient-centered care. Future efforts must aim at standardizing case-taking formats, training models that include *Ayurvedic* logic (such as *doṣa-based history*, or *vikṛti-centric screening*), and developing AI-assisted digital tools that can support and not replace clinical reasoning.

A well-constructed surgical history is not merely an administrative formality—it is the first intervention, a diagnostic compass, and often, a healing ritual in itself. By blending tradition and technology, evidence and empathy, surgical case taking can evolve to meet the demands of both the operating theatre and the patient's inner world.

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