CONTRIBUTION OF AYURVEDA IN SURGERY: AN OVERVIEW.

Amar Dwivedi.¹

M.S., Ph.D. (Shalya Tantra), Professor and Head, Department of Shalya Tantra, School of Ayurveda, D Y Patil University, Navi Mumbai, India.

Received on: 07/01/2021

This article is aimed to put forth the contribution of Ayurveda in the field of Surgery. Author has revealed the ancient glory of surgical stream in Indian system of medicine and highlighted the salient features of *Sushrut Samhita* - the basic textbook of Ayurvedic Surgery. The existing syllabus curriculum for post-graduation, their extent of training and contribution of Ayurvedic surgeons in providing quality surgical care particularly in remote areas in the context of recent Gazette notification by Board of Governance of CCIM giving patronage/legal support to Ayurveda Post Graduate Surgeons is described in this write-up draft.

1. AYURVEDA AND SHALYA TANTRA

The Ayurveda described as ‘Ayus’ - life and ‘Veda’ means – to know, ‘The Science of Life’. Ayurveda is an ancient system of medicine; it has been originated in India many centuries ago. The basic of Ayurvedic concepts firstly mentioned in *Rigveda* then detailed description of disease and their treatment has been explained in the *Atharva-veda*. Ayurveda is *Upaveda* of *Atharveda* but sometimes it regarded as sub-division of both *Rigveda* and *Atharveda*. Ayurveda has been divided in 8 major subjects – Ashtanga for better understanding with specialty such as *Kaaya Chikitsa* (Internal Medicine), *Baala Chikitsa* (Treatment of Children / Paediatrics), *Graha Chikitsa* (Demonology / Psychology), *Urdhvaanga Chikitsa* (Treatment of disease above the clavicle), *Shalya Chikitsa* (Surgery), *Damstra Chikitsa* (Toxicology), *Jara Chikitsa* (Geriatries, Rejuvenation) and *Vrisha Chikitsa* (Aphrodisiac therapy). It has been explained by two *sampradaya* (schools of thought) - Atreya (Internal medicine branch) and *Dhanvantari sampradaya* (Surgical branch).

*Shalya Tantra* is one among these *Ashtanga* which has been explained by *Dhanvantari samapradaya*. *Shalya Tantra* is considered as the prime branch because it provides quick relief from disease by the prompt use of *Yantra-Shastra*-Kshar and *Agnikarm* therapy. Also, diseases treated by surgical intervention are completely eradicated with negligible recurrence. Similarly, it is effective in various emergency and traumatic conditions such as head injury, intestinal perforation, foetal distress, urine retention etc.

2. SALIENT FEATURES OF *SUSHRUT SAMHITA*

*Acharya Sushrut* was a great surgeon of ancient time, known as ‘The Father of Indian Surgery’. He has written a book *Sushrut Samhita* (1000 BC), it deals with medicines, surgical and para surgical methods for management of various disorder. *Sushrut Samhita* is one of the oldest Textbook/Literature on Surgery having 6 *Sthana* (Section), 186 *Adhyaya* (Chapter) and 8300 *Sutra* (Recites). Although this is the main text on various surgical procedures, *Sushrut Samhita* has mentioned 40 chapters on various diseases and their conservative management. This textbook also describes accurate clinical examination, six stages of disease development or pathogenesis with diagnosis procedure. In context of eliminative-detoxification procedure (*Panchkarma*) *Sushrut* has elaborately highlighted various techniques of blood-letting (*Raktamoksha*) and specifically Leech therapy. Some Salient Features of *Sushrut Samhita* are mentioned here:

*Corresponding Author:* Amar Dwivedi. Email: amar.dwivedi@dypatil.edu.
Anatomy - Dissection of dead body immersed in water. *Sushrut* was the first surgeon to practice dead body dissection. Development of embryo has been described in details. He has also given description of various structure like joints, bones, arteries, veins, nerves, organs etc.

**Instruments and Equipment** - *Sushrut* has described 101 types of Yantra or blunt instruments (Forceps, probes dilators) and 20 types of Shastra or sharp or cutting instrument (Scalpel, needles etc.). Although many new instruments have now been developed, the fundamental principles have remained same.

**Concept of sterilization** - *Sushrut* was specific about need for cleanliness of a surgeon. Fumigation is mentioned in order to avoid post operation infection in wounds. The majority of surgical instruments were composed of iron, copper, and silver. These instruments were sterilized by treating or boiling in water/burning in flame. *Dalhana*, a commentator on *Sushrut samhita* has mentioned clearly that infection occurs if sterilization and disinfection procedure is not properly performed.

**YogyaVidhi** - *Sushrut* has mentioned importance of imparting practical training on available specimen (or simulators) before performing the actual procedure on living object. *Yogya* or hands on practice of sharp instruments on various resembling fruits/vegetables, suturing techniques on leather or cloth and bandaging on manikin etc. for accuracy in surgical practice is novel method described by *Sushrut*.

**Pathogenesis of disease** - *Sushrut* was the first person to clearly recognize the 6 stages of evolution of a disease process and the symptoms and signs that manifest in each stage. He clearly stated that if timely action is taken, the advancement of the disease process can be clearly halted.

**Concept of Anaesthesia** - Advocating heavy meals, *Moh choorna* (unique anaesthetic powder or ether to be inhaled), *Madi-ra* (Alcohol), during GI –major surgery advocating to keep patient empty stomach are few references which reveals that *Sushrut* understood the importance of painless surgery and anaesthesia. Similarly, the *trividh karma* (pre-operative, operative and post-operative measures) is also mentioned in the context of Shalya karma.

**Traumatic wound** - *Sushrut samhita* describes different types of wounds- incised, excised, punctured, and crushed and their methods of treatments. This categorization of traumatic wound is still unchanged and relevant.

**Orthopedics** - The text has described 5 varieties of bones and 12 types of fractures along with various types of dislocation and their management in detail. Signs of fracture such as inability to move, severe pain-tenderness, and swelling, loss of comfort and loss of function described by *Sushrut* are the same till today. Similarly, the principles of management of fractures-reduction by traction, manipulation, fixing it in optimum position of function and immobilization are also followed and practiced till day.

**Inflammation – Ulcer management** - *Sushrut* has devoted a large portion of narration for the identification of abscess (*vranashopha*) and ulcer (*vrana*); their stages of advancement, their prognosis and 60 procedures for their management. Since war-fare was common during his times, he laid great emphasis on the proper diagnosis and complete management of the ulcer.

**Bandaging** - Basic concept of Bandaging,14 different Types, Rules of Bandaging are elaborately described.

**Homeostasis** - *Sushrut* has mentioned importance of Blood and sign –symptoms of Haemorrhage and also the Principles of Haemostasis.

**Suturing** - Types of Needles like Curve/ Straight, Round body/Cutting, Suturing Material like Thread, Hairs, Types of Suture
like Rujugranthi-Tunsevani (Simple, interrupted, mattress suture), Rule of Suturing and Removal of Stich etc. has been described in Sushrut samhita.

- **Burns– Sushrut** has described various types of Dagdha Vran (Burns) and its management which is still relevant and adopted by contemporary science.

- **Ashtavidh Shastrakarm -** 8 Types of Surgical (operative) procedures such as Excision, Incision, Scraping, Puncturing, Probing-exploring, Extraction - Suction, Drainage and Suturing mentioned in text are the basics of surgery even today.

- **Surgery- Sushrut** has mentioned various surgical procedures for the management of diseases such as Ashmari nirharan (Cystolithotomy), Arsh chhedan (Hemorrhoidectomy), Bhagandar paatan (Fistulectomy and Ksharsutra ligation), Antra Bheda seevan (Intestinal perforation-Anastomosis), Vedhan karm (Tapping), Mudhgarbh nirharan (Mal presentation of fetus), Arbud chhedan (Tumor excision) etc. Even today, the modern surgeons have adopted these surgical techniques with little modifications as mentioned in Sushrut Samhita. Sushrut was the first person to introduce shirsandhan, karnasandhan and nasasandhan (reconstruction of head, ear, and nose respectively). Shirsandhan of Daksha Prajapati is considered as the first surgery ever done in the history of human being.

- **Anushalya karma-** Description of various para surgical procedures such as Ksharkarma- Ksharsutra (Sclerotherapy and Seton ligation in Fistula), Agnikarma (Heat Burn Therapy - Thermal Cautery and LASER Ablation), Raktamokshan (Bloodletting Techniques – Vene puncture and Leech) are very distinct therapy tools for instant relief mentioned in Sushrut Samhita.

- **Marmavijnan-** Another salient feature of Sushrut Samhita is information about 107 types of Marma (Vital points) in 5 categories based on their impact if traumatized. Further, Marma science is being explored and a unique Marma therapy is practiced to treat various painful ailments.

3. **PG SYLLABUS CURRICULUM AND TRAINING**

The 12th science student is enrolled for BAMS course (4.5 years, graduation) through merit at NEET examination. After obtaining the integrated graduation - BAMS Degree and completion of subsequent 1 year internship program (practical training in Hospital attached to Ayurveda College, Civil Hospital and Primary health center), the Ayurveda doctor either get registration from state medical council to practice integrated medicine (using Ayurvedic herbal medicines as well as the modern medicine and surgery, to the extend they get training) or they opt for post-graduation course.

Again, the ISM graduate has to qualify for All India PGCET exam (conducted by AIIA - AYUSH Dept) to get admission to 3 years residential Post graduate course (14 different subjects including MD - Medicine and MS Surgery, as per choice and preference made). The PG courses are run as per PG Rules / regulations prescribed by Central Council of Indian Medicine, New Delhi. The PG syllabus is self-explanatory to reveals, that MS Shalya (General surgery), Shalakya (ENT, Ophthalmology and Dental) and Stree-Prasuti tantra (Gynaecology and Obstetrics) course is integrated and PG Scholars are trained enough to perform all General Major - Minor Surgeries at par to their modern contemporary surgeons.

During the course, PG Scholars has to undergo rigorous training in attached Hospital and work as Resident Surgeon to attend Surgery OPD, and OT to assist in various Surgical procedures, Learn and Practice Pre and Post Surgery care of patient. PG Students (Salya) are trained in various General – Major and Minor Surgical conditions, Ward procedures, Surgical Emergency management such as Traumatic-Accidental injury, Basic Fracture Extensive
Wound management, Catheterization, Tapping, Vene–section etc. as per their prescribed syllabus curriculum. In addition to Surgery, they are also trained in Para Surgical Procedures like Ksharkarma-Agnikarm- Raktamokshan etc. Further, the MS – Shalya Surgeons are taught and trained in various palliative Ayurvedic treatment for Surgical diseases such as BPH, Ureteric Calculus, Urethral strictures, Varicocele, Varicose veins, Degenerative bone and joint disorders like PID - Spondylisis, Hemorrhoids, non-healing Ulcers, Acid-Peptic diseases etc.

The MS - Shalakya (ENT, Ophthalmology and Dental) are trained in concerned surgeries such as Cataract (IOL to PHACO), ENT procedures along with Ayurvedic palliative treatment (Kriyakalpa) for Chronic rhinitis, Myopia, Tonsillitis etc. The MS - Stree-Prasuti tantra (Gynecology and Obstetrics) are trained in conducting normal delivery, LSCS, Hysterectomy etc. They are also trained in family planning procedures like D and C, MTP, TL, IUD application etc. Further, they are trained and practicing specialty therapy such as Garbh sanskar, Ayurvedic conservative treatment of various Gynaecological conditions like Dysmenorrhea and leucorrhoea, infertility etc.

4. CONTRIBUTION OF SURGEONS OF INDIAN SYSTEM OF MEDICINE

Ayurvedic surgeons having M.S. (PG) degree, who are working as faculty in Ayurveda teaching institutes are rendering their services by teaching surgery subject to UG and PG students and also, as Surgery consultants performing all general major – minor surgeries (including Ano-rectal surgery and surgical emergency management). Ayurvedic surgeons who are in private practice are serving mankind by performing various general surgeries successfully, in which they are institutionally trained such as cholecystectomy, appendectomy, hernia, hydrocele, piles, fistula, excision of tumors, basic fracture – burn-traumatic injury management at affording rates. These Ayurveda surgeons are running their own nursing homes, day care units to serve mankind all over the country.

The ISM Surgeons cannot be compared with contemporary Modern Surgeons and Ayurveda Surgeons are definitely the Super specialist who are rendering their services in rural and urban region at affording rate. Hence, the Gazette notification released by Board of Governance of CCIM (November 2020) giving Government patronage to Ayurveda Post Graduate Surgeons to perform various major and minor surgical procedures, is very much welcome and appreciable step taken to revive the ancient glory of Ayurvedic surgery. This will ensure a cost effective and holistic quality surgical care to society, especially in rural and urban region where the modern surgeons are not available.

Cite this article as:

Source of Support: Nil; Conflict of Interest: None declared.