

Sushruta: 'The Father of Indian Surgery'

M. Tewari, H. S. Shukla

Department of Surgical Oncology, Institute of Medical Sciences, Banaras Hindu University, Varanasi, India

For correspondence:

Dr. M. Tewari, Department of Surgical Oncology, Institute of Medical Sciences, Banaras Hindu University, Varanasi – 221005, Uttar Pradesh, India. E-mail: mallika_vns@satyam.net.in

It gives me great pleasure in summarizing the achievements of one of the finest teachers' in our surgical heritage: Sushruta – who is proudly known as the 'Father of Indian surgery' [Figure 1].

Controversy exists about the time when Sushruta lived, with opinions about the time of his existence ranging from 1000 BC to 10th century AD. Son of Vishvamitra, Sushruta was the disciple of Dhanvantri, Divodasa Kasi Raja.^[1] The earliest documents concerning Indian medicine were confined to texts called *Kalpas*, and small monographs, and did not include any surgical subjects. Sushruta compiled his knowledge as the *Sushruta Samhita* (Sushruta's compendium). An individual needs sufficient medical background to understand the *Sushruta Samhita*. This encompasses details of human anatomy, medicine, pediatrics, geriatrics, midwifery, diseases of the ear, nose, throat, and eye, toxicology, psychiatry, besides surgery. The *Sushruta Samhita* provides minute details of preoperative and postoperative care, diet, techniques, indications and contraindications, and complications. Sushruta believed that knowledge of both surgery and medicine are essential to constitute a good doctor who otherwise 'is like a bird with only one wing.' He described surgery under eight headings: bhedana (incision), chedana (excision), lekhana (scarification), vedhya (puncturing), esana (probing), ahrya (extraction), vsraya (drainage or evacuation), and sivyva (suturing).^[2] He was well aware of the surgical management of hemorrhoids and fistulae, intestinal obstruction and perforation, accidental abdominal injuries with protrusion of omentum, and hernia. He knew that hemorrhage could be stopped by approximating the cut edges with stitches, and with cauterization with chemicals and heat.^[1]



Figure 1: Sushruta: a surgical genius of the ancient India

He is fondly remembered for his contribution to plastic surgery^[3] for he laid down its basic principles and described various types of rotation and pedicle flaps. Sushruta is the pioneer of reconstructive rhinoplasty. Cutting off the nose was a common punishment in ancient India and more than 15 methods of repairing such a damage are mentioned by Sushruta, akin to most modern plastic surgery techniques.

Sushruta was an expert in ophthalmic surgery.^[4] Reading his narration on cataract extraction, it is hard to believe that such an operation was carried out in the 8th century BC.

Sushruta even knew about the types of urinary bladder stones, their presenting features, complications, and vesical lithotomy.^[5]

He has also classified bones, dislocation of joints, fractures, and their treatment. Splints in those days were fashioned from bamboo tree branches, and barks. He has described 14 types of bandaging, classified burns

into four degrees, explained the effect of heat stroke, frostbite, and lightning injuries.^[1]

Sushruta advocated wine for the purpose of anesthesia and laid stress on antisepsis by fumigating the operating room with fumes of mustard, butter, and salt. He used about 20 sharp (e.g., knives, scissors, trocars, saws, and needles) and 101 blunt surgical instruments (e.g., forceps, specula – for inspecting body cavities and passages, tubes, levers, hooks, and probes) made of pure iron. Sutures were made from fibers of Indian hemp, horse's hair, leather strips, and cotton. He had the knowledge of about 760 medicinal plants.

The followers of Sushruta were called *Saushrutas*. The new student was expected to study for at least 6 years. Before starting his training he had to take a solemn oath, which can be compared to that of Hippocrates or Maimonides.^[2] He taught the surgical skills to his stu-

dents on various experimental modules, for instance, incision on vegetables (like gourd, watermelon, cucumber), probing on worm eaten wood, etc.

Truly, surgery in India reached admirable heights during the era of Sushruta. We should be proud of having such a genius in our surgical heritage.

REFERENCES

1. Agarwal DP. Susruta: The Great Surgeon of Yore. www.infinityfoundation.com/mandala/t_es/t_es_agraw_susruta_frameset.htm
2. Iram R. The Far East. *In*: Iram R, editor. Surgery. An illustrated history. Philadelphia: Mosby; 1993. p. 65-9.
3. Thattle RL. Still learning from Sushruta. *Plast Reconstr Surg* 1995;96:239.
4. Raju VK. Susruta of ancient India. *Indian J Ophthalmol* 2003;51:119-22.
5. Das S. Shusruta of India: pioneer in vesicolithotomy. *Urology* 1984;23:317-9.