

Medicine in Antiquity

Part 1

Prof (Col) Dr RN Basu

Introduction

- Any society at any time in their life history deals with health problems in some way
- All people in every period of history have dealt with childbirth, disease, traumatic injuries, and pain
- The history of medicine can throw light on
 - Changing patterns of health and disease as well as questions of medical practice
 - Professionalization
 - Institution
 - Educations

Paleopathology and Paleomedicine

- Scientific evidence proves that disease is older than the human race
 - Disease was not uncommon among other species
- Studies demonstrate that arthritis is widespread among a variety of medium and large sized mammals
- Modern diagnostic techniques have revealed evidence of tumour in fossilised remains
- Paleopathology provides information about health, disease, death, environment, and culture in ancient populations

Iceman

- In 1991, a remarkable discovery found a mummified body
 - This mummy emerged from a melting glacier in the Tyrolean Alps near the current boarder between Italy and Austria
- Radiocarbon dating indicated that the body was about 5100 to 5300 years old
 - The tools and weapons found with the body of the Iceman included an axe, a dagger, a bow, a quiver made of animal skins and articles for fire making

OTZI – The Iceman



Otzi – The Iceman

- At first the investigators thought that the Iceman had died of a fall, or cold
 - Closer examination of the body revealed that a flint arrow-head had lodged in his shoulder
 - The arrow shattered scapula and also probably torn through nerves and major blood vessels and paralyzed the left arm
 - Other evidences suggest that he died in a violent fight with several men

Otzi – The Iceman

- Evidence of disease and injuries among ancient humans and other animals suggest that they were present abundantly
- Researchers are interested to know when the human responses to the sufferings of disease and injuries began
 - A 36000-year old Netherland skull had suffered a blow with a sharp stone implement
 - A CT Scan revealed a degree of healing a around the wound
- The person survived at least for several months

Otzi – The Iceman

- There were presence of defensive wounds on his hands and traces of blood from several individuals on the Iceman's weapons,
 - Researchers suggest that he died in a violent fight with several men.
 - This would have required care and wound treatment by other members of the group
- These phenomenon raises a question
 - At what stage did human being began to administer care that would be recognised as a form of medicine or surgery

Paleomedicine And Surgery

- Available evidence is fragmented and incomplete
 - But whatever evidence is available can give the impression of abundance presence of injuries and disease
- One would like to establish when the human being started responding to the diseases and injuries
- A 36000-thousand year old Netherland-skull which suffered a blow with a sharp stone implement was subjected to CT scan
 - The skull wound showed some healing

Paleomedicine And Surgery

- The healing could only occur if the man had survived for a few months
- This would have needed administration of care
 - This is a form of medicine and surgery

Medicine in Ancient Civilizations

- Mesopotamia

- Sumerian civilization flourished 4-5 thousand years ago
- The Sumerian language vanished by the first century
- Writings on clay tablets could be found but these are indecipherable
- They used a form of cuneiform characters in their writings
- Experts discovered that in these writings, among other things, writing about medicine are also there
- Mesopotamian civilization have recently been revealed by satellite surveillance

Medicine in Ancient Civilizations

- The priests acted as judges, lawyers and physicians
- The cuneiform texts pertaining to medicine can be divided into three categories
 - Medical texts
 - Symptom texts
 - Miscellaneous texts
 - These provide information on diseases and medical practices
- Analysis of numerous texts revealed the medical tradition of Sumer

Medicine in Ancient Civilizations

- Egypt

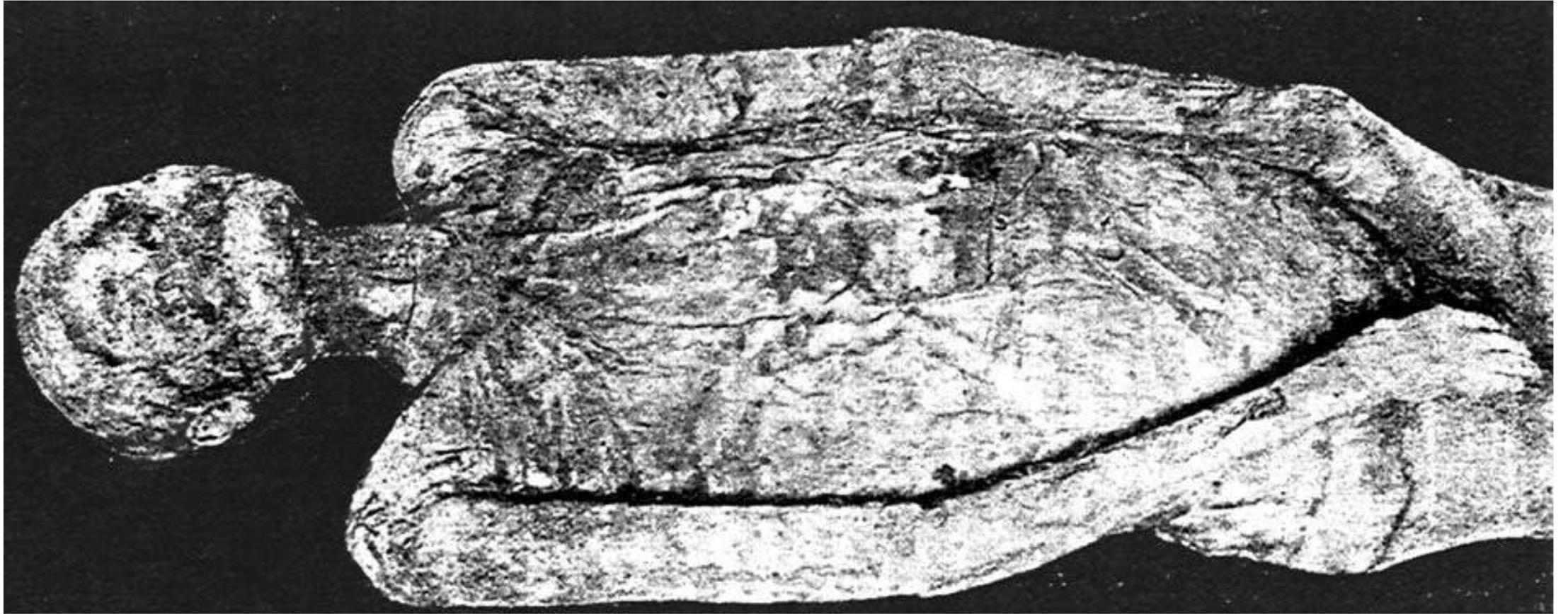
- Egyptian civilisation has fascinated travellers and scholars
- This interest was initiated when Herodotus, a Greek scholar wrote about Nile travelogues
- Ancient Greek writers from Homer to Herodotus praised the physicians of Egypt for their wisdom and skill
- For the ancient Egyptian life after death was of paramount importance
- Successes in afterlife depended on preservation of the body
 - This was for the soul to have a suitable place to dwell

Medicine in Ancient Civilizations

- There are lots of mysteries surrounding Egyptian mummification
- The basic steps were simple:
 - Removing the viscera
 - Thoroughly drying the cadaver, and
 - Wrapping the desiccated corps

Medicine in Ancient Civilizations

- Over the course of almost three thousand years, the methods and quality of workmanship varied
 - Basic methodology remained essentially the same
- These showed ancient Egyptians' understanding of human body and the science of preservation



An Egyptian Mummy

Medicine in Ancient Civilizations

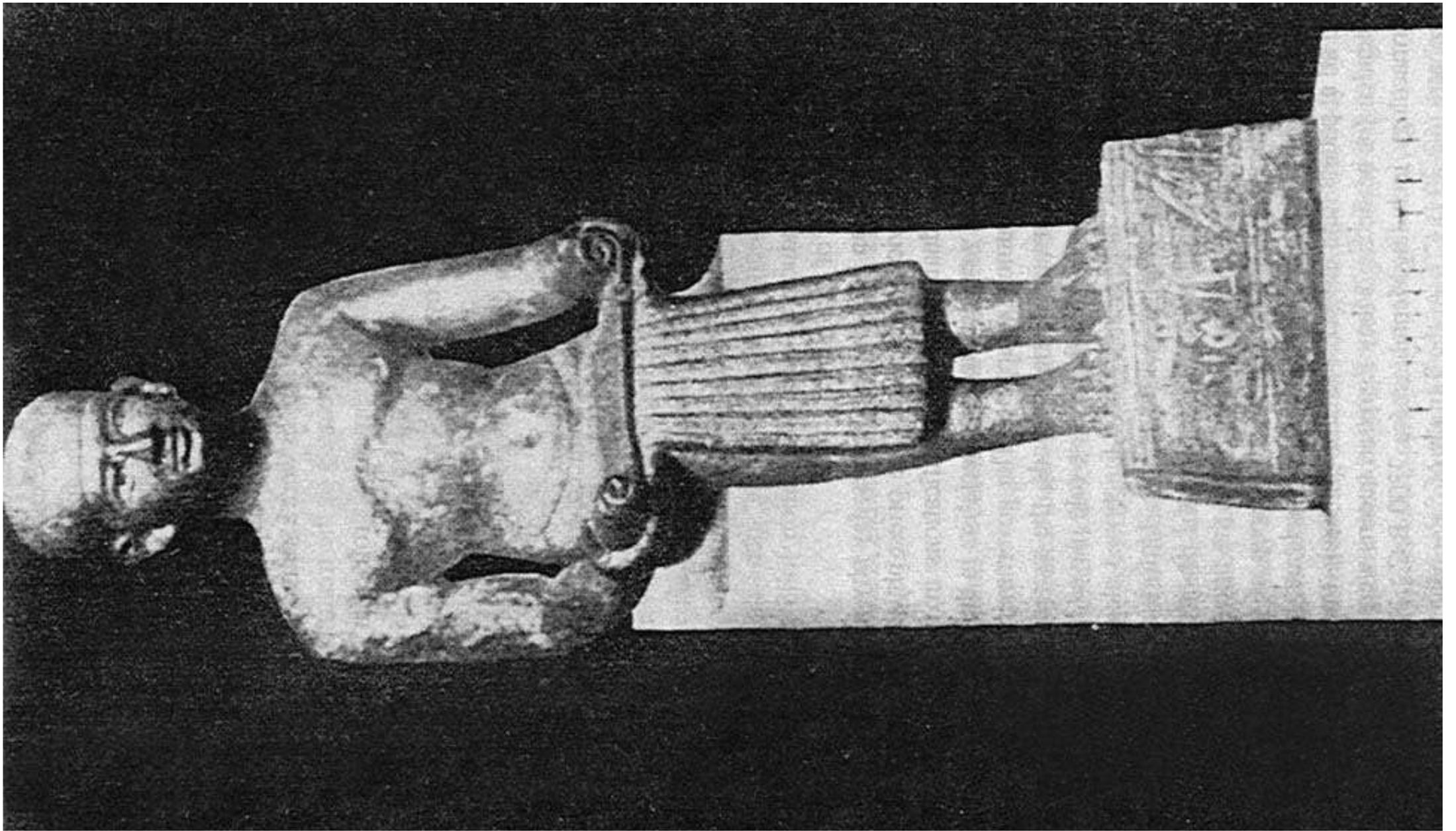
- Mummification (contd.)
 - One of the most peculiar use of Egyptian mummies was the medieval practice of grinding mummies into a powder
 - This powder was used as a remedy for wounds and bruises
 - There was abundance of diseases that flourished in Egypt
 - Because of this Herodotus's observation that the whole country swarmed with highly specialised physicians
 - They were dedicated to care of the eyes, head, teeth, stomach and obscure ailments

Medicine in Ancient Civilizations

- Ancient Egyptian Physicians (contd.)
 - Not all ancient physicians were specialists
 - There is evidence that specialists, lay physicians, priests and other magicians worked in harmony
 - They referred patients to each other as appropriate
 - High level of professional behavioral standards were expected of the physician
 - They were told: “Do not mock at the blind, do not scoff at dwarfs, do not injure the lame, do not sneer at a man who is in the hands of God (of unsound mind)”

Medicine in Ancient Civilizations

- Imhotep was regarded by Egyptians as God, like Asclepius who was regarded as Greek God of medicine
- Imhotep was a prodigy and master of all field of learning
- Imhotep's career as a healer can be divided into three phases:
 - First, as a physician in the court of Zoser; second, as a medical demigod (ca. 2600–525 B.C.E.); and third, as a major deity (ca. 525 B.C.E.–550).
- Many aspects of the evolution of medical profession in ancient Egypt remain obscure



Imhotep, the Egyptian god of medicine

Medicine in Ancient Civilizations

- Not all of the Egyptian healers were priests;
 - Lay physicians and magicians also offered their special services to the sick.
 - The priest–physician enjoyed the highest status, but some individuals acquired qualifications in two or three categories
 - Physicians and surgeons were assisted by specialists in the art of bandaging, a skill that had its origin in mummy wrapping.
- Popular accounts of Egyptian medicine have presented it as either “mere superstition” or as a mysteriously advanced science,
 - But neither extreme is correct

Medical Traditions in India and China

- European scholars generally ignored the evolution of medicine, science, and philosophy in India and China
- This is unfortunate
- Unlike the ancient medical traditions of Mesopotamia and Egypt, medical traditions in India and China are very much alive even today
- Historians have realised that scientific and medical traditions of China and India are complex, productive and different from that of the middle east countries
- They are also different from European traditions in many fundamental respects

India

- India is densely populated with a mixture of races, languages, cultures and religion
 - The Indian subcontinent is highly complex
- Much came to light about Indian history in early 1920's by the discovery of Mohenjo-daro and Harappa
 - These were the two major cities that were part of Indus Valley civilisation
 - This was a thriving civilisation from 2700 to 1500 B.C.E.
- Evidence shows that some two thousand years ago extensive trade relations existed between Egypt and India

India

- It was earlier believed that ancient maritime trade between India and Rome was product of Roman enterprise
- It is now shown that the ships for sea trade between India and Egypt was built in India
 - These were operated by Indian Crews
- The Silk Road served as a primary commercial and cultural link between Europe and China between 100 B.C.E. and fifteenth century
 - The Silk Road was the camel caravan routes
 - The maritime trade route between Egypt and India was another link with the far East

India

- Vedas

- Many of early culture was recorded in four Vedic texts
 - Rig veda, Sham veda, Yajur veda and Atharva veda
- The Hindus revere these Vedas as very sacred
- They are of Divine origin
- The learnings from Vedas are intimately associated with Hindu life and culture
- Veda means eternal divine knowledge
- Vedic texts were later explained in commentaries of Brahmanas and Upanishadas

India

- The traditional Indian healing art has been recorded in Ayurveda
- Not much is known very clearly of the early Indian history till about fourth or third centuries B.C.E.
- Indus valley was first conquered by Persians, then
 - Alexander the Great invaded India (356-323 B.C.E.)
 - Alexander stayed in India for about two years but lots of cultural exchanges took place between India and Greece
- After Alexander, Chandragupta Maurya came to prominence and could drive out rest of the Macedonians
- Most of India came under Maurya Dynasty
- The ArthaSastra that was written for Chandragupta contained many laws

India

- One such law was amputation of tongue of a person who had insulted his parents or teachers
 - The judicial mutilation that was prescribed might have given rise to the necessity of employing many surgeons
- King Ashoka was a cruel monarch
 - Later, having seen the devastation caused by him by his merciless killings, he was engulfed with extreme remorse and shun the path of violence
- He embraced Buddhism
 - Lord Buddha's teaching preached universal love, service and the peace of mind
 - These were to be achieved by the abandonment of desire

India

- Edicts of Ashoka suggest that free hospitals and dispensaries were widely distributed through out ancient India
- One Chinese traveller in 5th century described Indian hospitals
 - He recorded that mostly these hospitals were privately owned
- Ashoka also constructed many rest houses
 - In these rest houses a traveller or a poor could find the services of a physicians and medicines
- Medical aid was available in temples and schools
- During Ashoka's time Buddhism got lots of fillip
 - Monks travelled to Syria, Egypt, Greece, Tibet and China
 - Buddhism got well established in many parts of the world but in India vedic traditions reasserted itself

India

- After Ashoka, India was invaded by many nations
- There were invaders from Greece, Scythians, Muslims, Mongols and Europeans
- Indian medicine developed in a series of distinct phases
 - These were:
 - Prehistoric
 - Vedic, and
 - Ayurvedic
 - Ayurveda was intimately associated with Hindu religion and culture

India

- According to Hindu mythology, Brahma, the creator of life was the author of Ayurveda
 - Ayurveda means the The Science of Life
- This is an epic that consists of hundred thousand hymns
 - This is the source of all knowledge pertaining to drugs and medicine
- Dhanvantari was the God of healing
 - He taught Ayurveda to sages – this propagated through only hearing and remembering – the system was known as *Shruti*
 - Later it was converted to written text – only part of the original Ayurveda was done - the rest was lost

India

- Ayurvedic Medicine – the science of life
 - This is widely practiced in India today
 - The practitioner is known as Vaidya
 - Ayurveda is composed of eight branches:
 - Kayachikitsa (Internal Medicine)
 - Salakya Tantra (Surgery of Head & neck, Ophthalmology and Otolaryngology).

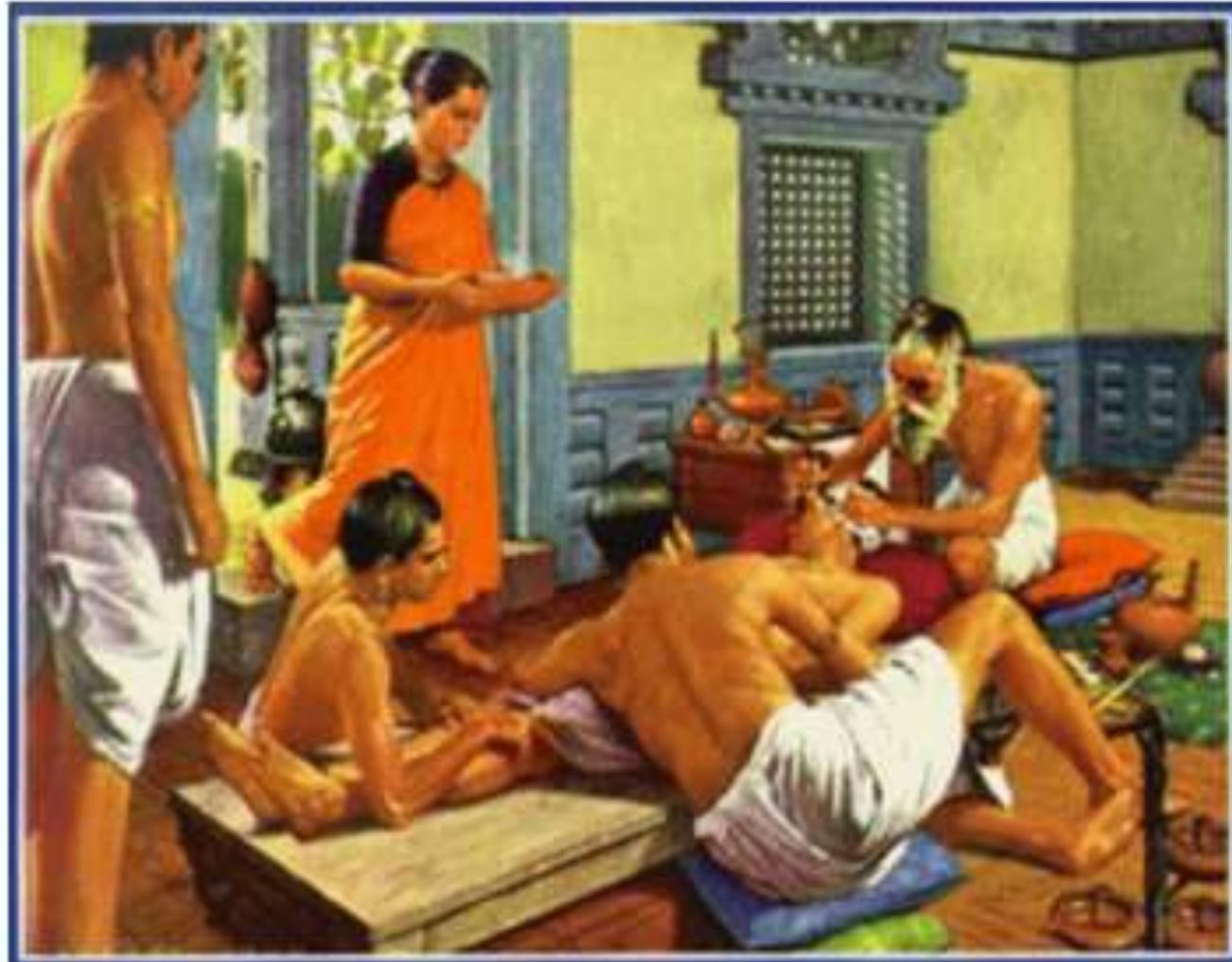
India

- Shalya Tantra (Surgery)
- Agada Tantra (Toxicology)
- Bhuta Vidya (Psychiatry)
- Kaumarabhrity (Pediatric)
- Rasayana (Anti-aging or Gerontology or Science of Rejuvenation) and
- Vajkarana (The Science of Fertility)

India

- Charaka, Susruta, and Vagbhata are the three legendary authors of the classic texts enriching the eight branches of Ayurveda
- Charaka lived sometime between 1000 and 800 B.C.E.
 - Western authors placed him in first century
 - Charaka samhita reached its present form in first century
- Susruta was practicing ayurveda sometime in 600 BCE
 - Susruta samhita emphasised on art of surgery
- Vagbata's text mentions about both Charaka and Susruta
 - Obviously, therefore, he is much more recent

Sushruta: 'The Father of Surgery' : 30
different types Operations, and 125
Surgical Instruments



End of Part 1