

ASTHI VIKARAS AND ASTHI SHARIRA: A REVIEW BASED ON AYURVEDA LITERARY

Dr. Pradeep Kumar Chouhan* and Dr. Suraj khodre

¹HOD & Associate Professor, Rachana Sharir Dept., Govt. Ashtang Ayurved College, Indore, MP, India.²Assistant Professor, Samhita-Siddhant, Govt. Ashtang Ayurved College, Indore, MP, India.***Corresponding Author: Dr. Pradeep Kumar Chouhan**

HOD & Associate Professor, Rachana Sharir Dept., Govt. Ashtang Ayurved College, Indore, MP, India.

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ABSTRACT

Ayurveda is the most ancient practicing system of Indian medical science. The Ayurveda provides various principles related to the healthy living & body constitution. As per ayurveda the internal composition of *Sharira* involve association of *Atma*, *Manas* and *Pancha Maha Bhoota* along with other factors. The basic anatomical construction of human body stays around the supportive framework of bone tissue (*Asthi*). There are various disease related to *Asthi* mentioned as; *Asthi Pradoshaja Vikaras* such as; *Adhyasthi*, *Dantabheda*, *Asthibheda*, *Asthischoola*, *Loma*, *Kunakha* and *Asthi toda*. The treatment of *Asthi Pradoshaja Vikaras* needs physiological & anatomical knowledge of *Asthi Sharira*. Considering this fact present article describe ayurveda perspective of *Asthi Sharira* along with disease related to the bony tissue.

KEYWORDS: Ayurveda, Asthi, Sharira, Anatomy, Samhita, Disease.**INTRODUCTION**

Ayurveda is one of the oldest systems of medical science belongs from India provides different therapies and treatment modalities for the management of various disease. Ayurveda encompasses principles of philosophy, medicine, surgery and diseases. The different tissue participated towards the composition of body and *Asthi* (bones) tissue is one of them. *Asthi* along with *Snayu* & *Mansa* help to make connective & movable body framework. The *Asthi Sharira* acts as frame work of body and mainly associated with *Snayu*, *Mansa*, *Dhamni* and *Sira*. This article deals with various ayurveda consideration of *Asthi Sharira* & disease associated with this system.^[1-3]

Ayurveda mentioned different types of *Asthi* depending upon shape & sizes such as; *Kapalasthi* which is flat in nature, it covers and protects the brain. *Valayasthi* which is round & hemi circle in shape. *Tarunasthi* which is soft in nature like bones of child. *Nalikasthi* is long tubes like & reed shaped. *Ruchakasthi* involve taste sensation & utilized to chew food.^[3-5]

Anatomical positioning of some Asthi

- **Kapalasthi:** *Asthi* located in *Nitamba*, *Ganda*, *Talu*, *Shankha*, *Vankshana* and *Amsa*.
- **Valayasthi:** *Asthi* located in *Pada*, *Uru*, *Parshva Pada*, *Hasta*, *Griva* and *Pani*.
- **Tarunasthi:** *Asthi* located in *Karna*, *Greeva*, *Bhoja* and *Ghrana*.

- **Nalikasthi:** *Asthi* located in *Pada Anguli*, *Pada Tala*, *Kurcha*, *Hasta Anguli* & *Jangha Asthi*.
- **Ruchakasthi:** *Danta Asthi* & *Asthi* of other stiff parts.

Number of Major Bone in Body

The number of bone in limb region is that 03 bones in each finger, 10 in planter region, 01 in the heel, 02 in calf, 01 in knee and 01 in the thigh total 30 bones found in lower extremity. 05 bones present in the pelvic region, 36 bones in each side of the thorax and 30 bones in the back. Chest comprises by 8 bones, there are 12 ribs in each side, 09 bones in the neck and 04 in the trachea. There are 02 bones in the lower jaw, 32 in teeth, 03 bones in the nose, 01 in the palate, 02 in cheek, 02 in ears, 02 in temporal region and 06 in the cranium.

Major Groups of bones

- 03 groups of bone in each ankle knee and hip.
- 01 group in pelvis and in the skull.
- 03 groups in superior extremity in the wrist, 01 in the elbow and 01 in the shoulder.

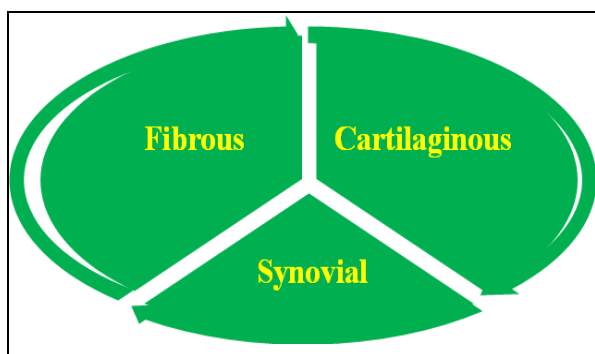


Figure 1: Types of Joints.

Table 1: Major bone of human skeleton as per modern science.

Body Part	Types of Bone
Skull bone	Cranium, Mandible and Maxilla
Shoulder girdle bone	Clavicle and scapula
Arm bone	Humerus, radius and ulna
Hand bone	Carpals, Metacarpals and Phalanges
Chest bone	Sternum and Ribs
Spine bone	Cervical area, Thoracic, Lumbar
Pelvic girdle bone	Ilium, Pubis and Ischium
Leg bone	Femur, Tibia and Fibula
Ankle bone	Talus and calcaneus
Foot bone	Tarsals, Metatarsals and Phalanges

Kandabhagna

The *Bhagna* means break in motion; fracture or trauma, this involve bending, fragmentation and cracking of different types of bone due to the injury. *Tarunasthi*, *Nalkasthi*, *Kapalasthi*, *Ruchkasthi* & *Valayasthi* may sometimes get injured and break which leads discontinuation of motion in particular body area. *Kandabhagna* associated with conditions such as; *Shvyathubahulyam* (swelling), *Sparshasahisnutvam* (tenderness), *Avapidyamane shabda*, *Vividhavedanapradurbhavah* (pain) & *Sarvasu Avasthasu Na Sharmalabha*. The modern science also describe various types of fractures (*Bhagna*) such as; phalanx fracture or dislocation, foot bone fracture, fracture of Tibia – Fibula or Femur, fractured arm, hip joint dislocation, cracked or bruised femur fracture & iliac fracture.^[6,7]

Types of Kandabhagna depending upon injury in Asthi

- **Karkataka:** The fracture which involves shape similar to crab is called *karkataka*.
- **Ashwakarana:** *Asthi* projects like the ear of horse.
- **Churnitam:** *Asthi* fractured into fragments or in powder form.
- **Pichhitam:** *Asthi* is compressed as sandwiched between two opposite forces.
- **Asthichallita:** Fracture fragment slightly elevates into one side.

- **Kanda bhagna:** Shaft of the bone is fractured associated with abnormal movement.
- **Majjanugatam:** Fracture associated with displacement of bone marrow.
- **Atipatitam:** Fracture throughout the plane of the bone.
- **Vakra:** *Asthi* become bent without breaking especially in children.
- **Chinnam:** Fracture in which continuity of the bone infringe only at one side.
- **Patitam:** Bone fractured partially and multiple cracks along with pain.
- **Sputita:** Fracture with pricking pain associated with hair line crack.

MAJJADHATU KSHAYA

The formation of *Asthi Dhatu* involves creation of spaces in bones through the *Vata*. These spaces further filled with fat known as *Majja* (Bone marrow). *Majja Dhatu* is *Asthi Dhatu* flows through the *Srotas* known as *Majja Vaha Srotas* into the *Majja Dhara Kala* and utilized by *Majjagni*. *Majja Dhatu* help to nourishes body; provide strength and boost *Shukra Dhatu*. Sometimes the equilibrium of *Doshas*, *Dhatu* and *Malas* is disturbed due to the *Pragyaparadha*, *Asatmyendriyarth Samyoga* and *Parinama* which further leads *Majja Kshaya*. *Asthipuranam* is maintained by *Majja Dhatu* therefore *Majja Kshaya* involves disturbed equilibrium of *Tridosha* & *Asthi Dhatu*. The clinical features of *Majja Kshaya* are *Asthi Daurbalya*, *Asthi Laghuta*, *Asthi Saushirya*, *Asthi Nistoda*, *Alapshukrata*, *Timir Darshnam* & *Bhrama* etc.

The aggravation of *Vata Dosha* associated with *Aharaja*, *Viharaja* and *Manasaja Nidanas* are responsible for *Majja Kshaya*. *Vata Prakopa* due to the *Dhatu Kshaya* in *Vridhdhavastha* also described as *Kalaja Nidana* of disease. *Vata Vardhaka Nidana* and *Kalaja Nidana* leads *Vata Prakopa* which further causes *Asthi-Majja Vaha Srotodushti*; these all together resulted *Atipravarti*, *Sthanasamshraya* of *Dosha* in the *Asthi-Majja* where *Kha-Vaigunya* present and *Dosha Dushya Sammurchhana* occurs in *Asthi-Majja* and *Majja Kshaya* take places. The management of disease involves pacifying *vata dosha* & good conduction of life style.^[8-10]

Osteomalacia

Osteomalacia is the pathological condition which involve softening of bones due to the impaired bone metabolism & deficiency of phosphate, calcium and vitamin D. The inadequate bone mineralization takes places due to the impairment of bone metabolism. The signs and symptoms of disease are pain, weakness & fragility of the bones. The deficiency of vitamin D due to the inadequate exposure to sunlight and diet supply mainly considered as etiological factor. The primarily treatment approach involve supply of Vitamin D and calcium supplements through nutritional diet.

Osteomalacia persist condition of pains in the lumbar and thighs region. The pain is symmetrical, non-radiating and associated with sensitivity of bones. Bones become less rigid & deformed. The other causative factors of disease are renal tubular acidosis, malnutrition during pregnancy, malabsorption syndrome, hypophosphatemia, celiac disease & cadmium poisoning.

Rickets

Rickets is similar to osteomalacia but instead of adult occurs in children. It involves defective mineralization or calcification of bones due to deficiency or impaired metabolism of vitamin D & phosphorus in children. It is also associated with bone deformity. Rickets mainly affect children in developing countries due to lack of calcium in diet associated with severe diarrhea and vomiting. Malnutrition due to the starvation in childhood & insufficient absorption of minerals are major causative factors. The major signs and symptoms of rickets are tenderness in bone, susceptibility to fractures, skeletal deformities, thinned skull bones and joint bending.

Anatomically children may possess following conditions

Bowed legs, thickened ankles and wrists, knock knees, spinal curvatures of lumbar lordosis, deformity in pelvic bones. Thickening & nodules in the costochondral joints, deformity of a chest & formation of groove, square head, curvatures of the long bone and curved back.

The primarily treatment approach involve use of vitamin D, nutritional supply & surgery for bone abnormalities. Proper supply of dietary calcium, phosphates and vitamin D along with exposure to sunlight offer beneficial effects. Use of cod liver oil, halibut-liver oil and viosterol also improve clinical symptoms.^[6-12]

CONCLUSION

Ayurveda believe that the understanding of anatomical & physiological functioning of human body is very essential to cure diseases conditions and keep healthy physical & maintain status. This article described some diseases related to *Asthi* (bone tissue) along with structural concept of *Asthi Sharira*. The knowledge of *Asthi Sharira* provides vital information related to the causes and treatment of diseases which are mainly associated with bone & skeleton system. The skeleton system is basic supportive framework of human body. There are various disorders which come under the heading of *Asthi Vikaras*, this article concluded that the physiological & anatomical knowledge of *Asthi Sharira* help greatly in the management of *Asthi Vikaras*.

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