

# Classical Review on Asthikshaya and Its Chikitsa

Dr. Chandrakala R. K.<sup>1</sup>, Dr. Prashantha A. S.<sup>2</sup>

<sup>1</sup>Assistant Professor Sharada Ayurved Medical College & Hospital, Yadgir, India

<sup>2</sup>Professor & Head Department of Kayachikitsa, Ayurveda Mahavidyalaya & Hospital, Hubli, India

**Abstract:** Ayurveda has emphasized on samata and vishamata of dhatu while mentioning the definition of health as well as disease. Here, dhatu means rasadi dhatu, vatadi dosha as well as mala. Hence, a state of equilibrium of all dhatu is health and vaishyam i. e. disturbance in this equilibrium is called disease. Vaishmya can occur in two ways- (i) Vriddhi – increase (ii) Kshaya – decrease. Asthikshaya is the condition where there is a decrease of Asthidhatu. Asthikshaya is occur due to Abhava of poshana bhava by Dhatvagimandya vypara. Asthikshaya lakshana was explained in almost all the Ayurvedic classical text book. Asthikshaya is one of the lakshana of Majjakshaya. Asthikshaya lakshana like Asthibheda, dhanta, keshha, nakha vikara and Patana etc. Acharya Charaka has explained Asthikshaya while explaining 18types of Kshaya. According to Dalhana Commentator the meaning of kshaya is “Swapramana haani”. In classical text book there is no separate Nidana panchaka mentioned for Asthikshaya. According to Ashraya and Ashrayi bhava, Vata and Asthi are inversely proportional to each other. The Bhaava which increases the vata dosha also decrease the Asthidhatu. Hence the vataprakopaka nidana may considered as Asthikshaya nidana. In Asthikshaya there will be qualitative and quantitative decrease of Asthidhatu. The Chikitsa mention for Asthikshaya is Panchakarma Tikta Ksheera Basti and Swyonidravaya.

**Keywords:** Asthikshaya, vata, soushirya, panchakarma, Tiktha dravya

## 1. Introduction

Just as the tree remains firm on the ground by their pit inside them, similarly the body remains erect by the support of the bones inside it. Though the skin and muscle get destroyed after death but bones do not get destroy after the disintegration of Shareera.<sup>1</sup>Asthikshaya is the condition where there is a decrease of Asthi dhatu is seen. The meaning of Kshaya is loss, decline, decay, diminution or waning.<sup>2</sup> Dalhana has defined Kshaya as ‘Swapramana Haani.’<sup>3</sup>

According to the Principle of Ashraya and Ashrayee Bhava by Acharya Vagbhata<sup>4</sup>, when Vata increases, Asthidhatu decreases because Vata and Asthi are inversely proportional to each other.<sup>5</sup>In starting stage Asthikshaya can be taken as Lakshana, but when it get Sthana Samraya in Asthidhatu, its progress can be taken as Vyadhi. The clinical features of Asthikshaya are Asthishula, Rukshata<sup>6</sup>, Asthitoda<sup>7</sup>, Sandhi Shaithilya, Keshaya, Loma, Nakha, Danta vikara & Paatana, Sadana and Shrama<sup>8</sup>.

Asthikshaya is a condition where there is decrease in the bone tissue and Asthi Soushirya means Porosity of bone. Hemadri has commented on the word Soushirya as ‘Sarandhratvam’ which means with pores.<sup>9</sup>

## 2. Aims and Objects

To study the Nidana Panchaka of Asthikshaya.

## 3. Material and Methods

The Asthikshaya lakshana is mentioned in almost all Brihatrya and laghutraya. The Asthikshaya lakshana studied from various classical text book, scholarly article, internet source, Google scholar.

## NIDANA (Etiological factors)

The etiological Factors of Asthikshaya are not explained separately in the classical texts. On the basis of Ayurvedic principle of Ashraya-ashrayee bhava, The increase or decrease of Asthi and Vata are inversely proportional to each other. Hence the factors aggravating Vata will cause decrease in Asthi Dhatu. Acharya Charaka had explained Samanya Nidana (general etiological factors) leading to the Kshaya of 18 types which includes mostly the Vata prakopaka Nidana.<sup>10</sup>

The factors provoking Vata are excessive exercise, intake of dry vegetables, irregular dietary habits which includes excessive fasting, dieting and limited foods, excess of food also, excess of worry, grief, fear, hunger, waking at night, letting out excess of blood, Dosha, Dhatu Mala and time factor (Adanakala and Vridhavastha).<sup>11</sup>

Majjadhatu is the next to Asthidhatu, which is present inside the Asthidhatu and closely related to each other. Hence the factors responsible for the vitiation of Asthivaha and Majjavaha srotasa are also responsible for Asthikshaya. The vitiating factors of Majjavaha srotas such as uttipeskha, Abhishyandi, virudhha ahara.<sup>12</sup> vitiates vata due to Margavodha. Vitiation of Asthivaha Srotas directly leads to aggravation of Vata, resulting in Asthikshaya.<sup>13</sup> Acharya Dalhana described the Asthidhara Kala as Purishdhara Kala.<sup>14</sup> So the causative factors responsible for vitiation of Purishvaha Srotas are also responsible for Asthikshaya. It includes suppression of urge for stool, consumption of large quantity of food, eating during indigestion, eating before digestion of previous meal, person having weak Agni and emaciation.<sup>15</sup>

### (1) SAHAJA NIDANA

(a) Beeja, Beejabhaga, Beejabhaga avayava<sup>16</sup>: Abnormal or weak beeja, beejabhaga and beejabhaga avayava related to formation of asthi dhatu if passed on to the garbha at the time of conception may lead to weak and disease prone asthi dhatu in the progeny.

**(b) Pitri bhava<sup>17</sup>**

Pitri bhava among the six bhava is responsible for formation of *asthi dhatu* during development of fetus. Hence *pitrija bhava dushti* can lead to improper *asthi dhatu* formation.

**(c) Kulaja**

Certain diseases are observed more commonly in specific race and even run in families.

**(d) Prakriti**

Women with *Vata* dominant *prakriti* are more prone to develop osteoporosis.

**(2) JATAJA NIDANA<sup>18</sup>**

Acharya Vagbhatta has explained that *vridhhi* and *kshaya* of *vata dosha* and *asthi dhatu* are inversely proportional to each other. Hence due to provoked *vata*, *asthi dhatu* is more susceptible for any pathology amongst other *dhatu*.

*Ahara* and *Vihara* leading to vitiation of *vata*, as well as *asthi posaka amsalpata* in *ahara* may lead to imbalance in *asthi dhatu* formation.

**(a) Manasika nidana**-While explaining the *manasika nidana* of *Vata prakopa* Chinta, Shoka, Bhaya and Krodha are *manasika nidana* explained. Acharya Charaka has explained about these *nidana* as follows;

**Matraya apyabhyavahrutam pathyam Ca annam na jiryate Cinta soka bhaya krodha dhukha shayya prajagarahi<sup>19</sup>**

Some explanations regarding the effect of *Manasika nidana* on *Ahara pachana* is explained by Acharya Charaka. Though one takes *pathya ahara* in *samyakmatra* these *manasika nidana* leads to the improper digestion of such *ahara*. This leads to improper nourishment of the *dhatu* and obstruction in the *Asthi dhatuposhakha rasayani*.

**Anya Nidana:** *Ashti kshaya* can be caused due to the direct *Vataprakopa* caused due to the *Abhighata* and *marmaghata*. *vishama upachara* may be considered under the heading of *vaidyakrta nidana*.

**Sa yevannaraso vrudhdhanam jaraparipakwa shariratwad aprimano bhavati.<sup>20</sup>**

Here commenting on the above *shloka Dalhana* says that, *ishat prinana* is more appropriate or *aprinana* should be understood as *ishat prinana* meaning slight nourishment. This type of nourishment cannot cause the *Vridhhi* of the *dhatu*. Instead this slight nourishment is meant to keep the person alive. Hence *Kala* is also the causative factor in the causation of *Asthi kshaya*.

**(3) SVABHAVAJA NIDANA**

The disease postmenopausal *Asthi kshaya* as mentioned earlier is unique in women. This is explained by the fact that women possess genetically low bone mass than men. References related to this are available in our classics also.

In *stri kara bhava<sup>21</sup>*, while mentioning specific characteristics of male and female gender, *Asamhanana*, *Shaithilya*, *mardava* are described as features of female. *Strikara bhava* can be considered as important causative factor for occurrence of this disease uniquely in women<sup>22</sup>.

**SAMHANANA<sup>23</sup>**

Proper distribution of *Asthi* which is examined by qualitative and quantitative wise of *Asthi dhatu*. Also, commenting on *stri kara bhava* in, *Gangadhara* in *Jalpalkalpataru* explains- '*Asamhananam sarirdrudatwa abhava*'.

*Dridhatva* is a function of *asthi dhatu*. Hence *asamhanana* is related to *asthidhatu* that is weaker in female as compared to male. *Shaithilya* is laxity of joints and other body parts and *Mardava* means softness of all body parts.

Acharya Kashyapa has described the characteristics of *danta* in male and female while explaining dentition<sup>24</sup>.

Dentition in girls is less painful as their teeth are *mridu* and *sushira* in constitution **by nature**, whereas in boys it is opposite; i.e. dentition is painful because of *Ghana* and *sthira* quality **by nature**. [*Danta* is classified under types of *asthi* (*Ruchaka asthi*)]

All the above references suggest that *asthi dhatu* is naturally weak in women as compared to men. Hence in women, especially after *rajonivritti*, where *kshaya* of all *dhatu* occurs, *asthi dhatu* is most affected because of weak disposition of *asthi* in women.

**JARA**

*Dhatukshaya* and *vata prakopa* are natural phenomena occurring in *jarawastha*. Along with *kshaya* of all *dhatu*.

**SAMPRAPTI OF ASTHI KSHAYA**

Acharya have mentioned about the *Ashraya-ashrayi bhava* which explains the relationship of various *dosha* with the *dhatu*.

As per this theory *Vata* is the *ashrayi* of *Asthi dhatu*, these are inversely proportional to each other. Hence all *vata propaka nidana* becomes the *nidana* for *Asthi Kshaya*. Keeping in mind all the *nidana* explained under *vata vyadhi* an attempt has been made here to formulate and explain the *samprapti* of *Asthi kshaya*.

**SAMANYA SAMPRAPTI**

*Dhatu kshaya* and *Margavarana* are the causative factors for *Vata prakopa<sup>25</sup>*. Owing to the *Asrayasrayi bhava* between *Asthi* and *Vata dosha*, the *prakopa* of the *vata dosha* is said to be the causative factor for the *Asthi kshaya*.

Hence the *Nidanas* explained under the heading of *vata prakopa* may be further classified into *dhatu kshaya karaka* and *Margavarana karaka nidana*.

According to *Cakrapanidhatu kshaya* is explained as *sara kshaya* and *margavarana* as *vegapatibandha*, which leads to *vata prakopa*. Over indulging in the above said *nidana* leads to the *riktata* of the *srotases* due to *dhatu kshaya* and *Margavarana*. This leads to *vata prakopa* and the *prakupita vata* fills in the *rikta dhatuvaha srotas* and vitiate them further leading to the stronger provocation of its own. Commenting on the word *rikta Cakrapani* says;

“*Riktani iti tucchyani, snehadi guna sunyani ityarthaha*”<sup>26</sup>

**Gangadhara** is also of the same opinion. This means that the empty *srotases* which are devoid of *snehadi guna* gets filled by the *prakupita vata* and produces either *Sarvanga* or *Ekanga roga*.

According to **Acarya Charaka** *Avrta marga* of *vata* causes it to become *prakupita* and causes *rasadi dhatu shoshana*<sup>27</sup>.

As a combined effect of these factors *dhatu kshaya* occurs. According to the principles of *Ashrayasrayi bhava* explained by **Vagbhata** *Asthi dhatu* among the *saptha dhatu* is most fictile to be affected since *Vata* and *Asthi* are inversely proportional. So to sum up briefly, it can be said that *Asthi kshaya* is caused due to the *dhatu kshaya karaka* and *maragavarana karaka nidana sevana* causing the *prakupita vata* to fill the *riktatata in astivahasrotases* which are barren of *snehadi guna* and cause **ASTHIKSHAYA**.

#### PURVARUPA

As we go through the classics we cannot find about the *poorvarupa* of *Asthi kshaya*. *Vata vardhaka nidana* along with the other *nidana* itself forms the *nidana* for the *Asthi kshaya* due to the *Ashraya-Ashrayi bhava* of the *Vata* and *Asthi*. So *vridhdhava* causes the disease *Asthi kshaya*. As we all know that the *poorvarupa* in *Vatavyadhi* is *Avyakta*.<sup>28</sup> **Chakrapani** in his commentary has clarified that *Avyakta* can be taken as *alpavyaktata* or as *asampoorna lakshana* or as mild *lakshana*. So the *lakshana* in their mild form can be taken as the *poorvarupa* of *Asthi kshaya* in the initial stage of the disease. *Manda vedana* (dull aching type of pain) in the *asthi*, *sandhi*, and mildness of other *lakshana* such as *kesha*, *roma*, *nakha*, *danta* and *smashru vikara* may be taken as the *purvarupa* of *Asthi kshaya*.

#### RUPA

The signs and symptoms are known by *rupa* or the *lakshana*. *Vyaktha avastha* is the fifth among the six *kriya kalais* responsible for the manifestation of the symptoms. Almost all the Ayurvedic classical text books have mentioned about the *lakshana* of *Asthi kshaya*.

According to **Charaka samhita** *Asthi kshaya lakshana* are *Asthibheda*, *Asthi shula*, *kesha-loma-nakha-samshru-danta vikara* and *patana*, *shrama*, *sandhi shaithilya* and *Majjakshaya*.<sup>29</sup>

**Susruta samhita** have mentioned *Asthi kshaya lakshana* as *Asthitoda*, *Asthi shula*, *Nakha-dhanta vikara* and *patana*, *Ruksha*, *bala kshaya*.<sup>30</sup>

**Astanga Sangraha** also have quoted that *Asthi kshaya lakshana* are *Asthibheda* *Asthi shula*, *kasha-loma-nakha-dantavikara* and *patana*, *sandhishaitilya*, *Ruksha*, *parushya*, *Asthibheda*, *mamsakshya* and *Balakshaya*.<sup>31</sup>

According to **Astanga Hridaya** *Asthibheda*, *astibheda*, falling of *Danta-Kesha-Nakha* etc, are the *Asthi kshaya lakshana*.<sup>32</sup>

**Harita Samhita** have mentioned *Asthi kshaya lakshana* as *Mand cheshta*, *manda virya*, *medha kshaya*, *visamjna*, *krushata*, *kampana*, *Angamarda*, *vamana parusha*, *shosha*, *dosha sadana*, *shotana*.<sup>33</sup>

According to **Bhavaprakasha** *Asthi shula*, *Rukshata*, *Danta kasha vikara* are the *Asthi kshaya lakshana*.<sup>34</sup>

#### Chikitsa of Asthi kshaya

The term *chikitsa* is derived from the root “*kit rogapsnayane*” *kit* is to adopt measures calculated to remove the factors of the disease. “*yaa kriya vyadhi harani sa chikitsa nigadhyate*” (*vaidyaka shabda sindhu*) the measures adopted for the removal of the disease is called as *chikitsa*. the first and foremost is “*sankepat kriya yogo nidanaparivarjana*” avoiding the cause itself is the *chikitsa*. second is “*samprapthi vighatana meva chikitsa*” breaking the *samprapthi* itself is the *chikitsa* of the disease.

The principle of treatment for *kshaya* of all *dhatu* is described as,<sup>35,36</sup> the *dravyas* (substances) which have same *mahabhuta* predominance (*svayoni*), or which are similar in properties of that particular *dhatu* are used for *vridhdhi* of that *dhatu*.

As per *samanya* theory –

- (1) *Dravya samanya*<sup>37</sup>
- (2) *Guna samanya*
- (3) *Karma samanya*

Similarity (*samanya*) is *dravya*, *guna* or *karma* can be used for *vridhdhi*.

For *Asthi dhatu*, *Asthi tarunasthi* is mentioned as *dravya samanya*. While describing management of *Asthi kshaya*, **Acharya Vagbhata** quoted that *Basti* containing *ksheera*, *ghrita* and *Tikta rasa* should be given<sup>38</sup>. **Arundatta**, while commenting on this in *Sarvangasundara* explains that the *dravyas* that will increase *asthi dhatu* will also provoke *vata*. Hence such such *dravyas* cannot be used for *Asthi vridhdhi* in *Asthi kshaya vikara*.

**Acharya Sushruta** has explained the principle of *Asthi kshaya Chikitsa* as “*Tatra Swayoni Vardhana Dravya Prayoga Pratikara*”<sup>39</sup>

**Acharya Charaka** has given the similar line of treatment for which includes *Panchakarma*, *Bhesaja* and *Tiktha Dravya*, *Ksheera* and *Sarpi Prayoga*.<sup>40</sup>

#### 4. Discussion

*Asthi* and *vata* are inversely proportional to each other. The *vata prakopaka nidana* are the *nidana* for *Asthi kshaya*. All the classical textbook mentioned the different *Asthi kshaya lakshana*. According to **Charaka samhita** the *chikitsa* mentioned for *Asthi kshaya* is *Panchakarma*, *Bhesaja* and *Tiktha ksheera basti*. *Panchakarma* is *Ardha chikitsa* among all the *chikitsa* because it eradicate the disease from its root and re-occurrence is less. *Bhesaja* can be take as *shamanushadi* i, e *sudhavarga dravya*. *Tiktha Rasa* decreases *vata dosha* and increases *Asthi dhatu*. *ksheera* is good for *Asthi dhatu* and pacifies *vata* and *basti* is best *vata shamaka chikitsa*. The *chikitsa* should increase the *asthi dhatu* and decrease the *vata dosha*.

## 5. Conclusion

The *Asthikshaya* occur may be *kalaja* or *Akalaja*. *kalaja Asthikshaya* i, e due to age factor. If it occurs due to *kalaja* and treated with *Rasayana* and *swayonidravya*. The *Akalaja Asthikshaya* occur due to *vata prakopaka nidana* and *Poshana Abhava* and treated with *Panchakarma*, *Bhesaja* & *Tiktha ksheera basti*. *Akalaja Asthisjaya* is *Suka sadhya* and *Kalaja* is *Kasta sadhya*.

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