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HUMAN ANATOMY IN THE VEDAS

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The science of the full structure of the body of a living being is called 'Anatomy'. Its knowledge is obtained by practical experimentation through the dissection of the dead body. In a way it is a branch of Biology. In the Western world, it is said that Pythagoras and Alemaeon the student of Democritus residing in Crotona dissected the dead bodies of animals in order to make a comparative study of the anatomy of human body. Hippocrates belonged to Cos (about 460 B.C.) who is believed to be the father of medicinal science, though not of anatomy. His concepts of anatomy are rather incomplete and incorrect. In the opinion of the recognized European scholars, Aristotle (about 364 B.C.) has been regarded as the founder of this science. It seems, he too formulated his tenets on the basis of the dissection of animals, but he did not himself dissect the human body. It was he who named as 'Aorta' the main vein carrying the blood. Subsequently, Erasistratus (250 B.C.) dissected the body of the criminals for the first time. Hirophilus, too, is said to have done the dissection. Celsus (63 B.C.) has written a book titled 'De Meeicina' about the anatomy.

In India, Atharv¹girasas loved to study anatomy. They are connected with the literature connected with the Atharvaveda belonging to the ṛgvedic period. Being inspired by the Vedic hymns he started the study of the human and animal bodies.

Anatomy in the ṛgveda

In the *Yak-ma-n¹ṇana* hymn¹ there is a description of the disease of tuberculosis (*yak-m¹*) that has percolated to, and is to be removed from the limbs of human body, such as eyes, head, arms, lungs, heart, and etc. We get here a glimpse of the anatomy in it. It has been said in the hymn: "From your eyes, nostrils, ears, chin, head, brain, tongue, veins of the throat, hind muscles of the neck, marrow, spine, shoulders, arms, intestines, veins of anus, belly, heart, both the kidneys, lever, thighs, knees, ankles, ribs, fingers of feet, waist, buttocks, vulva, phallus and nails.

I am removing the disease from every limb, every hair, every joint, from wherever it be, from all those places, from the entire body.'

S¹ya^a has explained some of the words used in this hymn as follows:

(1) *Cubuka*=chin; (2) *U⁻ih¹*=vertical muscle; (3) *Kikasa*=bone; (4) *Anuk*=ligament; (5) *Matasn¹*=kidneys; (6) *Yakna*=liver; (7) *Pl¹ṇiā*=lungs, spleen, etc.; (8) *P¹r⁻i*=heels; (9) *Prapad¹*=fingers of feet; (10) *Bh¹sad*=waist; (11) *Bha÷sas*=anus; (12) *Vana÷kara^a*=kidney.

In the *Yak-ma-n¹ṇana* hymns of the *Atharvaveda*,² too, different limbs of the human body are mentioned.

Anatomy in the *Yajurveda*

In the 25th Adhy¹ya of the *Yajurveda* is devoted to the anatomy of the animal body. The limbs mentioned in it are as follows:

danta = tooth (cf. RV. 8.43.3; 10.68.6) ; *danta-mØla* = gums; *barsva* = socket of a tooth; *da÷-ra* = fangs (large tooth); *agra-jihv¹* = tip of the tongue; *jihv¹* = root of tongue; *t¹lu* = palate; *hanu* = chin / jaws; *'sya* = mouth; *a^aCa* = testicles; *sma¹rØ* = beard; *bhrØ* = eyebrow; *kan^anik¹* = pupil of eye; *pak-ma* = eyelash; *n¹sik¹* = nostril; *pr¹a* = breath; *ap¹na* = out breath (through anus); *adhara* = lower lip; *saduttara-prak¹ṇa* = bright look; *anuk¹ṇa* = gloss of the lower part of body; *masti-ka* = head; *kar^a* = ear; *ṇrotra* = internal ear, *adhara-ka^a-ha* = lower neck; *ṇu-ka-ka^a-ha* = fleshless part of the neck; *tedan^a*³ = clotted blood; *many¹*⁴ = nape or back of the neck; *ṇiras* = head; *stupa⁵* = knot of tuft of hair; *keṇa* = hair; *svapas¹vaha* = active shoulder; *ṇakuni-s¹da* = quick spring; *ṇapha* = hoof; *sthØr¹*⁶ = ankles, buttock or lower part of the fetlocks of thigh; *ja¹gh¹* = thigh; *j¹mb^ala* = kneecap, knee joint; *atiruk* = horse's fetlock; *dos⁷* = forearm; *a÷sa* = shoulder; *pak-a* = right side rib; *n^apak-a* = left side rib; *dak-i^aa-p¹r¹ṇva* = right flank; *uttara-p¹r¹ṇva* = left flank. *skandha* = shoulder; *pratham¹k^akas¹* = first, second and third rib cartilage; *puccha* = tail ; *bh¹sad* = hind-quarter, buttock; *ṇro^a* = hip; *Øru* = thigh; *alg¹* = groins; *ku-h¹* = cavities of the loins; *sthura* = buttocks; *vani¹-hu⁸* = part of the entrails of an animal; *sthØla-gud¹* = large intestine ; *'ntra* = entrail ; *bast^a* = bladder; *gud¹* = guts; *a^aCa* = testicle; *v¹A^a-a^a* = scrotum; *ṇepa^a* = penis; *retas* = seed; *v^arya* = semen; *pitta* = bile; *pradara* = fissure; *p¹yu* = anus; *ṇaka-pi^aCa* = lumps of dung; *n¹bhi* = navel; *rasa* = flavour; *yØ^a-a* = broth; *vipru^a* = drops of fat; *u-ma^a* = heart; *vas¹* = marrow; *a¹ru* = tear; *dØ-ik¹* = rheum of eye; *as¹Åk* = blood; *anga* = limb; *rØpa* = beauty; *tvak* = skin; *kroCa* = chest; *p¹jasya^a* = belly, flank, sides; *jatru* = clavicles; *bhasa^a*¹⁰ = nether hind part; *pur^afat¹*¹¹ = pericardium, or some other organ near the heart; *udarya* = belly; *matasn¹* = cardiac bone; *v¹Akk¹* = kidney; *pl¹ṇiā* = duct; *pl¹h¹* = spleen; *kloma* = lungs; *glau* = lumps or part of flesh, arteries or vessel of heart; *h^ar¹* = vein; *kuk^a* = flanks; *udara* = belly; *bhasman* = ashes.

Atharva^aic Anatomy

The seer of the Atharvavedic hymn 10.2 is N¹r¹ya^a. He introduces us to the physicians of prehistoric times who were practicing as the priests as also the physicians. N¹r¹ya^a is a representative of this India tradition of physicians. He is also the seer of the famous *Puru-a-sØkta*¹² of the ṛgveda, and many references to the human anatomy are referred to in it. His name is also connected with many hymns.

The bones of human body in the Atharvaveda

The details of the human bones as given in the P¹r¹-i-sØkta¹³ are as follows:

(1) *p¹r¹-a* = heel; 2. *gulpha* = ankle bone; 3. *a¹gul* = finger; 4. *ucchla¹j¹kha* = metacarpal or metatarsal bone of hand and foot; 5. *prati-h¹* = bottom of foot; 6. *a-h^avantu* = kneecap; 7. *ja¹gh¹* = shank; 8. *j¹nu-sandhi* = knee-joint; 9. *ṇro^a* = pelvic cavity; 10. *Øru* = thigh; 11. *ura^a* = chest bone; 11. *gr^av¹* = wind pipe; 12. *stana* = breast; 14. *kaphoCa* = shoulder blade, scapula; 15. *skandha* = shoulder bone; 16. *p¹A^a* = spinal back bone; 17. *a÷sa* = collar bone; 18. *lal¹-a* = superciliary ridge at the eyebrow; 19. *kk¹-ik¹* = central facial bone; 20. *kap¹la* = cranium with temples; 21. *hanu-citya* = pile of jaw; 22. *k^aasa* = spinal column; 23. *anØkya¹⁴* = thoracic portion of spine, explained as 'belonging to the backbone'.¹⁵

The detailed information about the bones of the body testifies to the deep observation of the bodies, not only of



human ones, but also of animals by the ancient Vedic seers, who obviously knew the knowledge of dissection.

In the Atharvaveda, there is mention of 360 bones of the human body, but it is not easy to recognize them. The RV. 1.164.48 reads:

There is some variance between third and the fourth quarters. But the scholars have not been able to explain them fully. It is difficult to make out the twelve parigha, one discus, three n¹bhi, and three hundred sixty sa¹ku, or the khila. Normally, this metaphorically means 12 months, 1 year, 360 days. But, there is no indication of any reference to human body. However, there is no restraint against in interpreting it to refer to human body (*cakra*): its three main parts, viz., the head, the trunk and the feet directed towards the sky (*nabhy¹ni*); the twelve limbs, viz., eyes, ears, nose, tongue, hands, feet, anus and penis (*pradhayaā*); three hundred conical bones (*ṣa¹ka¹vaā*) and sixty peg-like bones (*khil¹ā*). Monier-Williams¹⁶ explains the word *kh¹la* to mean 'a post' in the context of the AV. 10.8.4a.

The Organs of the Human Body

The hymn (AV.2.33)¹⁷ devoted to Brahman in the Atharvaveda provides an account of the limbs of human body with comments, which includes almost all the main limbs described in the traditions of Caraka and Dhanvantara. They are as follows: *ak¹i* (eye), *n¹sik¹* (nose), *kar¹a* (ear), *chubuk¹* (chin), *ṣ¹r¹a* (head), *masti¹ka* (brain); *jihv¹* (tongue), *gr¹v¹* (neck), *u¹ih¹* (nape of neck, or medulla oblongata), *k¹as¹* (spinal column, probably cervical portion of the vertebral column), *an¹ḍky¹* (thoracic portion of the spine), *do¹ṣṭa* (superior extremities), *a¹sa* (muscles of the shoulder along with collar bones), *h¹ādaya* (heart), *kloma* (lungs), *hal¹k¹a¹* (gall bladder, fort of pancreas), *matasn¹* (gall duct), *pl¹h¹* (spleen), *yakna* (liver), *n¹tra* (intestine, entrails of groins), *gud¹* (anus), *vani¹hu* (rectum), *udara* (abdomen), *kuk¹i* (sides of abdomen), *pl¹ṣṭi* (colon), *n¹bhi* (umbilicus), *puritat* (pituitary gland), *saha¹ka¹ḥik¹* (passage for food, esophagus), *ḍr¹ḍ* (thighs), *a¹h¹vat* (knee), *prapad¹* (transverse arches of feet), *bhasadya* (glans penis), *ṣ¹ro¹i* (waist), *bh¹sad* (buttocks), *bha¹sasa* (vaginal orifice), *asthi* (bone), *majj¹* (marrow), *sn¹va¹/sn¹yu* (muscle), *dhaman¹* (artery), *p¹i* (hand), *a¹guli* (finger), *nakha* (nail), *a¹ga* (limb), *loma* (hair on the body), *parva¹a¹* (joint), *tvac* (skin), *mehanam* (urinary organ), *basti* (bladder for urine), *basti-bila* (bladder orifice).

These terms occur in the different hymns and different contexts, such as *majj¹*, *carma*, *m¹sa*, *asthi* and *loma* in AV. 4.12.3, 4, 5; and *p¹ā¹h¹*, *varjahva*, *p¹r¹va*, etc., in AV.11.8.11-5.

Similarly, the *Vajasaneyi Sa¹hit¹*¹⁸, the *B¹āhad¹ra¹yaka Upani¹ad¹*¹⁹, and the *Ātapatha Br¹hma¹a²⁰* give description of the human body. In the following verse of the Atharvaveda the human body is said to comprise the following two main parts; the *para¹g¹tra* (upper portion) and the *avara* (lower portion)-

ā¹ me parasmai g¹tr¹ya ṣam astv var¹yame /

ā¹ me caturbhyo a¹gebhaā am astu tanve 3 mama
/(1.12.4)

According to Caraka, Su¹ṣrutā and V¹gbha-a²¹, the main limbs of a human body are four, viz., arms, feet, trunk, head, skeleton, and they are divided into 56 sub-limbs.

Special Terms used by Atharva^a

The most important limbs are the brain, heart and the bladder. The Atharvaveda knew the difference between the head (AV. 10.2.6) and the brain (AV.10.2.8,26). According to Caraka,²² the '*kloma*' has been connected with the respiratory system near the heart, but is different from the lungs. Probably, it is the lung. According to Su¹ṣrutā, '*phuphphusa*' is on the left side, while the '*kloma*' is on the right side. Atharva^a, Caraka, Su¹ṣrutā and V¹gbha-a use the singular number for it. According to Atharva^a, '*hal¹k¹a¹*' is located in between the '*kloma*' and the '*matasn¹*'.²³ But, in the Yurvedic literature, it is not mentioned anywhere else. S¹ya^a, and others following him, interpret it as 'a particular mass of flesh'. Weber²⁴ explains it to mean 'liver'. S¹ya^a explains '*matasn¹*' as '*v¹āk¹*', and Caraka explains '*v¹āk¹*' as kidneys, and the two sacks near as receptacles for bile. '*Pl¹ḥ*' is a receptacle with numerous holes meant for excreta. '*Karu¹kar¹i*' (AV. 11.9.8) are the bones of hands and feet. The terms '*varjahve*' (= c¹ḍukau, AV.10.10.14), '*p¹jasyam*' (= m¹ṣṭaya AV.9.12.5), '*puritat*' (AV. 9.7.11) (caphgranthi); kapho¹au (shoulder blades/scapula) AV.9.5.15,16,17; 9.12.11) are used in the later works, too; only a few terms are dropped.

Similarly, the Atharva^a-mantra (AV. 10.2.31), which is called a source of the Tantric mysticism, provides a wonderful description of the human body in a metaphorical style:

Ā¹ a¹ cakra¹ nava¹ dv¹r¹ dev¹n¹ p¹ḍr¹ ayodhy¹ /
Tasy¹ hira¹yayaā ko¹ṣṭā svargo jyoti¹v¹ātaā //

Here, the human body is compared to an invincible city, and the brain is a golden treasure. The eight wheels are: (1) m¹ḍ¹dh¹ra, (2) sv¹dhi¹-h¹na, (3) ma¹ipura, (4) an¹hata, (5) vi¹uddha, (6) lalan¹, (7) jñ¹, (8) sahas¹ra. The nine doors are: two eyes, two ears, two nostrils, mouth, anus, and penis. The gods meant are: earth, water, light, air and sky. The golden treasure is the heart, with three qualities, viz., *sattva*, *rajas* and *tamas*.

Circulatory System - Veins and Arteries

Bolling²⁵ says that Atharva^a has no knowledge of the difference between the veins and arteries; it is not right, because it has been mentioned clearly in the AV.1.17.3. In the common sense of internal canals, it refers to the intestines, vagina, etc.

There is a formulae (AV.1.17.1) for stopping the bleeding from the wounded limb or of menstruation, in which the term '*hir¹*' means vein, and it has been explained by S¹ya^a as the channels for the flow of the menstrual discharge. In reality, '*hir¹*' refers to the nerves, which are the sensors covering the veins. The term '*hata-varcas*' refers to the flow of blood, and it is meant to be stopped by a sort of an anesthetic. According to S¹ya^a, in this prayer to the veins, they are shown to be located in the upper, lower and middle parts, and as big and small.

The number of the veins and arteries has been mentioned clearly. Veins are 100, and its sub-veins are 1000, as attested by the Ka¹-hopani¹-ad²⁶ and the Pra¹ṇopani¹-ad²⁷.

The Atharvavedic hymn 7.35 is about stopping the embryo of the inimical woman. Here, too, is a mention of 100 *hir¹*s and 1000 *dhaman¹*s. S¹ya^a interprets '*hir¹*' to mean the five veins inside the uterus²⁸ and the *dhaman¹* the big veins enveloping it.²⁹ Although the context is different, he inter-



prets them identically. Although the numbers shown in the Av. 1.17.3 and Av. 7.35.2 are different, but it is clear that *dhaman* refers to the bigger channel flowing the blood with palpitations, the *hir*¹ or *hir*¹ is thin and linked with the nervous system. The term '*n¹©*'³⁰ is a common term both the types of channels for blood.

Na©, a General Term

In '*ye te n¹©yau deva-kÂte yayos ti--hati vÂ--yam*'³¹ the channels of the testicles carrying the semen are described. V. S. Apte³² and Monier-Williams³³ explain the word to mean 'a tubular organ', derived from '*na*©' is 'a species of reed', and Atharva^a calls it a limb of speech, i.e., the air pipe.³⁴ The term is used thus in the *ṛgveda*.³⁵ In the hymn 7.90.2 the body of the persons suffering from the disease of belly and arthritis of the joints is said to be enveloped by 100 *dhaman*s, which is a synonym for the term '*n¹©*'. In AV.18.4.33,³⁶ the word '*dhenu*' is used to denote a vein. In AV. 1.17.4 the two veins called '*sikatvat*' and '*gav³⁷nik*' are the ones on the either sides of the urinary channel, S'ya^a³⁸ explains it as the fallopian tubes.

The tendons (*sn¹vaâ*) are mentioned with the veins.³⁹ S'ya^a explains them as very thin veins, and they differ from a one another in thinness or thickness.⁴⁰ This testifies to the fact that Atharva^a knew not only the difference between the veins and the arteries, but also their different functions.

Basic Elements

Rasa (chyle), *rakta* (blood), *m¹÷sa* (flesh), *meda* (fat), *asthi* (bone), *majj¹* (marrow), and *ukra* (sperm) are called the '*dh¹tu*' (basic elements) created from food. Caraka⁴¹ and Su¹ruta⁴² give a detailed description. These basic elements are described in all the *ṛthava*'ic hymns connected with the disease and its cure. The description of *rohi*^a, a medicinal herb for healing wound, shows the mutual relation of all the *dh¹tus*.⁴³ Here, it is noteworthy that the description of *majj¹*, *m¹÷sa*, *asthi*, and *ukra*, is depicted along with the knowledge regarding their internal relation. The term '*asÂk*' possibly denotes the bone-marrow.

From these basic elements the '*ukra*' or '*retas*' are regarded as the basis of the body. Su¹ruta says that the loss of virility gradually destroys the other elements, also.⁴⁴ Moreover, the fact that the semen is life generative has been put as a question by Atharva^a: '*Ko âsmin reto nyadadh¹t tantur¹t¹yat¹m iti* /, i.e., Who has put the life-generative semen in this?⁴⁵ Here, the semen has been called the life-generative motto. The term '*tantur¹*' possibly refers to the chromosomes. The semen and the female seed in the embryo, or the egg are like the threads. In the context of generation, the continuity of life through the semen is also mentioned in the *ṛgveda*.⁴⁶

Ojas is the essence of these seven basic elements. The Atharvaveda describes it in the context of the body⁴⁷, and puts it in many places with '*bala*' (strength). Thus, *ojas* is the eighth basic element according to Caraka and Su¹ruta, and the best aspect of all the seven *dh¹tus*, and is said to be oily, white, cool, and soft.⁴⁸ S'ya^a also calls the *ojas* the eighth basic element, and quotes a reference of an unknown Acharya, viz., '*K-etrâjñasya tad ojas tu keval¹traya i-yate / Yath¹ snehaâ prad¹pasya yath¹ bhram a¹ñani-tvi-aâ //*'

Nervous System

The '*manas*' and the '*citta*' have been regarded as different from each other by Atharva^a in '*prai¹nnude manas¹pra cittenota brahma¹*'⁴⁹, which testifies to his knowledge of them as such being an ancient as the Atharvaveda. S'ya^a considers '*manas*' as an internal organ, and the '*citta*' as its particular condition. The Atharva^a hymn 3.25 supports S'ya^a's interpretation. '*Citta*' is the will power of the brain. the acceptance of this interpretation only can clarify the mantra: '*yath¹ mama Ât¹vaso mama cittam upay¹si / Athain¹m akratu÷ kÂtu¹ mamaiva kÂ¹uta÷ va¹le //* (AV. 3.25).

'Kratu' = intention'' '*sajkalpa*' = thought; '*manyu*' = decision, determination, etc., are various phases of the mental tendency. It has been connected with the heart, too.⁵⁰ Caraka and Su¹ruta also explain it similarly. The intimate connection between the brain and the heart is mentioned in '*MØrdh¹nam asya sa÷s÷vy¹tharu¹ hÂdaya÷ ca yat*' (AV. 10.2.26), because the heart is called the seat of consciousness. The seven basic elements are authenticated in the '*Kaâ sapta kh¹ni vi tadarda *ur-a¹i kar¹v imau n¹sike cak-a¹*' mukham' (AV. 10.2.6).*

Dissection and Care

Dissection is important in the study of anatomy. The Atharvaveda calls one to be careful for clean and healthy dissection. Hear the context is of dissecting a goat. Here the instructions that one should first take out the skin, then separate the limbs from the joints, not to cut unnecessarily, etc., prove that the Atharva^as had the experience of dissection, and that they had developed this branch also.

On the strength of all these references, it can be concluded that the Atharva^as possessed the knowledge of human anatomy, and probably it was acquired through the practical dissection of the dead bodies. The comparison of each of the limbs of the human body with the year and a divine city testify to the special interest and ability of explanation on the part of the Atharva^as. This is not possible without a deep study.

It would be more beneficial to update this knowledge in consonance with our age, instead of branding, or despising, it as an obsolete myth. All the scientific discoveries are the heritage of the entire human society. But, according to the ancient dictum of '*yad de¹asya yo jantus tasyaiva tasyau-adham*', I feel that if our ancient knowledge is coordinated and modified in the context of the current age and the modern discoveries and developments in the various branches of knowledge and science, it would be useful for the entire human world.

¹ RV. 10. 163. 1-6.

² AV. 2.33; 20. 16.

³ Br. 1.9.2.35; 13.5.3.8.

⁴ AV. 6.25.1.

⁵ Br. 1.3.3.5; 12.4.10; 3.5.3.4.

⁶ RV. 4.21.4; 6.19.10; 6.29.2; 8.9.34; 4.19; 21.1; 24.29; 54.8; 10.156.3; G Br. Br. 8.3.4.4; 4.3.10.

⁸ RV. 10.163.3; AV. 2.33.4; 9.12.12; 10.9.17; 20.96.2.

⁹ AV. 4.14.8; 9.12.5; 10.10.20; Br. 10.6.4.1.



- ¹⁰ RV. 10.86.6; AV. 4.14.8.
¹¹ AV. 9.7.11; 10.9.15; ~ Br. 8.5.4.6; 14.5.1.21;
¹² RV. 10.90; AV. 19.6.
¹³ AV. 10.2.1-8.
¹⁴ AV. 2.33.2.
¹⁵ Suryakant: A Practical Vedic Dictionary, p.44.
¹⁶ Sir Monier Monier-Williams, A Sanskrit-English Dictionary, p.340.
¹⁷ Cf. AV. 2.33; RV. 10.163.
¹⁸ VS. 19.89-93; 20.5-9; 25.1-9; 31.10-13; 39.8-10.
¹⁹ Brh. Up. 2.8.11.
²⁰ ~ Br. 12.9.1-3.
²¹ Caraka 4.7; Suṣṭrūta 3.4; A-~, HĀ. 2.3 (p.184).
²² HĀdaya+ kloma ka^a-ha+ ca t^lluka+ casam¹rit¹ /
 MĀdv¹ s¹ k^udra-hikketi nĀ^a+ s¹dhy¹ prak¹rtit¹ //
²³ AV. 2.33.4.
²⁴ A.A. Macdonnell and A.B. Keith: Vedic Index of Names and Subjects, Vol. II, p.500.
²⁵ Bolling: Encyclopaedia of Religion and Ethics. Vedic Medicine – IV, pp.762 ff.
²⁶ Ka-h. Up., 2.6.
²⁷ Prañna Up. 3.6.
²⁸ Garbha-dh¹ra^antham antar-avasthit¹ā sṶk¹m¹ y¹ n¹yaā /
²⁹ Garbh¹ayasya ava¹-ambhik¹ bahav¹ sthṶl¹ y¹ n¹yaā /
³⁰ Sikat¹vab¹ (AV. 1.17.4) may be a N¹ on which strangury depended.
³¹ AV. 6.138.4.
³² Apte, V. M. – A Sanskrit-Hindi Dictionary, p. 526.
³³ Sir Monier Monier-Williams : A Sanskrit-English Dictionary, p. 526.
³⁴ AV. 5.18.8.
³⁵ RV. 2. 11.8.
³⁶ Nigha^a-u, 1,11.
³⁷ AV. 1.3.6; 10.25.10-13.
³⁸ Gav¹nikē yoneā p¹va-vartinyau vinirgamana-pratibandhake n¹yaū / S¹ya^a on AV.1.11.5.
³⁹ AV. 11.8.11-12; 7.50.9; 12.5.69; 2.33.7.
⁴⁰ Caraka, 5.5.6-8.
⁴¹ ibid., 1.28.4.
⁴² Suṣṭrūta, 1.14.10-11.
⁴³ AV. 4.12.2-5.
⁴⁴ Suṣṭrūta, 1.41.10-17.
⁴⁵ AV. 10.12.17.
⁴⁶ RV. 10.129.5.
⁴⁷ AV. 1.12.1; 2.17.1.

⁴⁸ Suṣṭrūta, 1.15.21-22.

⁴⁹ AV. 3.6.8.

⁵⁰ AV. 3.25.6.

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