



EXTRACTION OF FOREIGN BODIES (SHALYA APANAYANEEYA) – A REVIEW ARTICLE

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ABSTRACT

Shalya is a main threat that disturb the comfort (*sukha*) of a person that eventually leads to various diseases or death. *Pranashtashalya* comprises of two words *pranashta* and *shalya*. *Pranashtashalya* in the sense denotes non procurable foreign particles lost in body. Acharya Susruta mentioned about extraction of *prnashta shalya* in twenty seventh chapter of *Susrutha Samhita sootra stana* which is considered as one of the pillar stones of *shalya tantra*. Acharya Susruta managed to trace out, remove or manage the foreign particles lost in the body from signs and symptoms exhibited by the subject and also using the diagnostic techniques designed by him. Some of the techniques that were used those days are now also practiced.

KEYWORDS: *Pranashtashalya, Acharya Susruta, Shalya apanayaneeya.*

INTRODUCTION

Shalya tantra is considered one among the eight branches (*ASHTANGAS*) of *Ayurveda*.^[1] It deals with removal of *shalya* (foreign bodies), the descriptions of *yantra, shastra, kshara, agni*, description of *vrana* (wound) and its management.^[2] Acharya Susruta has considered *shalya* as a main threat that disturb the comfort (*sukha*) of a person that eventually leads to various diseases or death.^[3] *Pranashtashalya* comprises of two words *pranshta* and *shalya*. *Pranashta* in the sense denotes non procurable. *Shalya* is anything that cause discomfort to complete body. Acharya Susruta succeeded in identifying, extracting or handling the foreign particles lost in the body from the signs and symptoms shown by the subject and also using the diagnostic techniques that he developed. Some of the techniques used during those days are now being practiced, too.

TWO FOLD CLASSIFICATION OF SHALYA ON THE BASIS OF FIXITY IN BODY.^[4]

There are two kinds of *Shalyas*.

1. *Anavabadha Shalya* - Foreign particles are loosely fixed to its seat within the body.
2. *Avabadha Shalya* - Foreign particles firmly fixed to its seat within the body.

METHODS OF REMOVAL OF LOOSELY FIXED FOREIGN PARTICLES^[5]

Methods of removal of foreign body which are loosely fixed to body (*Anavabadha Shalya*) are fifteen in brief.

No	Methods	General description
1.	<i>Svabhava</i>	Extraction by natural expulsive functions of the body.
2.	<i>Pachana</i>	Suppuration or putrefaction
3.	<i>Bhedana</i>	Excising
4.	<i>Darana</i>	Bursting
5.	<i>Pidana</i>	Pressing
6.	<i>Pramarjana</i>	Rubbing
7.	<i>Nirdhmapana</i>	Blowing with the mouth of medicinal powders into the affected part
8.	<i>Vamana</i>	Administration of emetics
9.	<i>Virechana</i>	Administration of purgatives
10.	<i>Prakshalana</i>	Washing
11.	<i>Pratimarsa</i>	Friction with the fingers
12.	<i>Pravahana</i>	Straining as at the time of defecation
13.	<i>Achushana</i>	Sucking
14.	<i>Ayaskantha</i>	Applying a magnet
15.	<i>Harsha</i>	Exhilarating

1. *Svabhava*- Body will react itself by inducing lachrymation, sneezing, eructation, coughing, micturition, defaecation, and the emission of flatus.

2. *Pachana*- Foreign matter, which has penetrated deeper flesh tissues, should be removed by creating suppuration in the affected locality. The putrid flesh would release the fixity of *Shalya* and the weight of the secreted pus and blood would cause it to fall down.
3. *Bhedana*- the locality of a fixed *Shalyam* should be opened by an incision in the event of its not being ejected even after the establishment of the local suppuration.
4. *Darana*- If the *Shalyam* fails to come out even after the incision, the affected part should be pressed with the fingers, or medicines.
5. *Pidana*- exerting pressure, should be applied over its surface
6. *Pramarjana*-A particle of any fine matter, accidentally dropped into the eye, should be removed with sprays of cold water, or by blowing into it with the mouth, or by rubbing it with hair or the fingers.
7. *Nirdhmapana*-A residue of digested food or mucous, a residue of any foodstuff (*Aharashesha*) misdirected through the nostrils, or some tiny splinter loosely pricking it (*Anu-shalyam*), should be removed by breathing hard, or by coughing up through the nostrils (*Utkasha*), or blowing through the nose.
8. *Vamana*- A bite of food that acts as an obstructive *Shalyam* in the stomach cavity (*Amashaya*) should be expelled by rubbing (*Pratimarsha*) the fingers against the throat lining, or against the epiglottis area leading to induction of vomiting reflex.
9. *Virechana*- Purgation (*Virechanam*) should be used to remove the foreign particles carried down into the intestines.
10. *Prakshalana*- The pus or any other morbid matter found inside an ulcer cavity should be removed by washing it,
11. *Pratimarsa- AngulyaGharshana* with inserting fingers if shalya is in throat.
12. *Pravahana*- Incarcerated flatus, or obstructed scybala or retained urine, or obstructed foetus, should be borne down and expelled by means of straining.
13. *Achushana*- Any deranged *Vayu* or watery secretion trapped in any part of the body, as well as tainted blood or vitiated breast-milk, should be sucked off with the mouth, or with a horn.
14. *Ayaskantha*- A loose, unbarbed arrow, stuck in a large mouth wound and lying along the direction of hairs (*Anuloma*), should be extracted by adding a magnet to its end.-
15. *Harsha*- By exhilaration and merry-making, a shaft of sorrow, guided into the heart by one of the other multiple emotional causes, should be extracted.

SHALYA AAHARANA MAARGA (ROUTE OF EXTRACTION OF SHALYA)^[6]

Foreign particles (*Shalyam*), whether large or small, may be withdrawn from its place in either of the two ways

known as the *Anuloma* and *Pratiloma*. The *Anuloma* consists in withdrawing a *Shalyam* through a way other than that of its penetration, while the contrary is called the *Pratiloma*.

A *Shalyam* that is lodged in a position near the point of its penetration (*Arvacheenam*) should be removed by the way it entered (*Pratiloma*). On the other hand, a shaft or *Shalyam*, penetrating deep into some part of the body but not coming out from the other side (*Paracheenam*), should be drawn.

GENERAL PRINCIPLES TO BE FOLLOWED DURING EXTRACTION OF AVABADHA SHALYA^[7]

Foreign bodies, piercing deep into any part of the body so as to reach the other side of the wounded limb or part, (but not cutting out clean through it owing to the diminution of its original momentum), and remaining protruded in the heaved up flesh, should be extracted through a channel other than that by which it has originally penetrated (*Anuloma*), and by stirring or striking it with the hand or a hammer. The heaved up flesh should be opened with an incision, when found possible of being so opened, and the embedded *Shalyam* should be drawn out by stirring or striking it with the hand as laid down before.

Foreign bodies lodged in any soft part of the abdomen, chest, arm-pits, inguinal regions or ribs, should not be cut open or struck with hammer, but should be tried to be removed with the hands through the way of its penetration (*Pratiloma*), in failure whereof the *Shalyam* should be extracted with surgical appliances (*Shastra*) or any other surgical instruments (*Yantras*).

A patient, fainting away (during such surgery), should be encouraged by dashing over his face with cold water. A lot of optimistic and happy words should be used to solace him, and he should be given a nourishing diet such as, milk, etc., and his vital parts should be protected.

Then having extracted the *Shalya*, the incidental wound or ulcer, the blood having been wiped off, should be fomented with heat or by applying warm clarified butter to its surface in the event of it being found fit to be so treated i.e., devoid of pain and unattended with further bleeding. Cauterisation should be resorted to where the condition of the wound would indicate such a measure. After that, the wound should be plastered (*Pradeha*) with honey and clarified butter, and bandaged with a piece of clean linen; and directions as to the diet and nursing of the patient should be given.

SPECIAL CONSIDERATIONS WHILE REMOVING SHALYAS ACCORDING TO LOCATION^[8]

When the face of the foreign body is seen protruding out, then it should be shaken, then cut with cutting materials and pulled out. In places such as abdomen, chest, axilla,

groin, and spaces in between two ribs, the foreign body if seen protruding out and if possible to hold by the hand, attempt should be made to pull out by hand itself, in the same route. If it is not possible to pull it out by and, then it should be cut with a sharp instrument and pulled out using blunt instruments.

- **Shalya in Sira and Snayu:** Foreign body when stuck up in veins and ligaments should be freed by using metal rods etc. and then pulled out; if the handle is embedded in the swelling; then it should be pulled out by squeezing the swelling; if the handle is weak it should be tied to kusa etc. and pulled out.
- **Shalya near Hridaya:** When the foreign body is near the heart, then it should be pulled out in the same direction of its entry; comforting the patient who is agitated by the use of cold water; that which is at other places should be pulled out by cutting it.
- **Asthivivaragata Shalya Aharanopaya:** When the foreign body has entered into the cavity of the bone or stuck up tightly in the bone, then the physician should hold the patient by the legs and pull out the arrow using a blunt instruments If by this method it is not possible to remove it, then the patient should be held tightly by strong persons, the handle of the arrow should be bent with help of an instrument, and then fastened with five tailed bandage to the string of a bow at one end and the reins of the horse at the other end, then the horse should be whipped so that it lifts its head suddenly with force, resulting in pulling the arrow out or a strong branch of a tree bent down and the arrow pulled out as before and released, the resulting force pulls out the arrow.
- Foreign body if stuck up in a wrong place and seen protruding out, it should be stroked by a stone hammer or any such thing, made loose and then pulled out in the same way of its entry. Foreign body having ears which not troublesome and seen protruding out, then it earlike attachments should be bent and the arrow pulled out from the front only.
- **Kanta Shalya^[9]** - When a foreign body made of shell lac is found stuck up in the throat, then hollow tube should be introduced first and a heated metal rod inserted through it till it touches the foreign body, When the foreign body adheres to the heated rod it should be bathed with cold water and after it becomes stable it should be pulled out. Foreign body which is not made of shell lac should be pulled out by using a rod smeared with lac or bees waxing the same manner as described earlier. A piece of bone or any similar foreign body, if found stuck up in the throat horizontally, then the patient is made to swallow a ball of hairs, fastened to a strong and lengthy thread, along with liquid food, followed by consuming more liquid food, till his stomach

becomes full, then he is made to vomit. During vomiting, after determining that the foreign body has stuck to the ball of hair, the thread should be pulled suddenly or a soft tooth brush may be used. If by these acts, if it does not come out, then it should be pushed deep inside. Any injury to the throat happening by this act, then the patient should be given a mixture of honey and ghee or powder of *triphal* added with honey and sugar, to lick.

- **Annagrasa shalya^[10]**
When a bolus of food is present in the throat acting as a foreign body, then the person should be made to bend and given a hard hit with the fist over his neck without his knowledge or he may be made to drink fats, wine or water.
- **Kanta rodha^[11]**
When the throat is held tight by the arms, rope or creepers, then *vata* gets aggravated along with *slesma* and blocks the passage and brings about flow of saliva, froth in the mouth and loss of consciousness. Such as person should be anointed with oil, given sudation, administered strong purgative therapy to the head and given soup of meat mitigating *Vata*.

CHECKLIST FOR CONFIRMING THE COMPLETE REMOVAL OF FOREIGN BODY.^[12]

Physician should declare such a place as free of foreign body.

- Area of impact which has mild troubles
- No swelling
- No pain
- No complications
- Clean
- Soft all around
- Static
- Not elevated
- Searchable thoroughly by probing in all sides through the passage of entry.
- Not having any difficulty for extension and contraction.

DISCUSSION

The intelligent physician after carefully observing the shape of the foreign body, the place of its lodging and deciding the particular instruments to be used, should pull out the foreign body; those which have ears attached and which are difficult to pull out should be removed with appropriate methods, if necessary with the help of other instruments using them with his intelligence; if not pulled out, these are going to produce swelling, ulceration, severe pain, deformities and even death, hence these should be removed by all efforts.

Nirharanopaya mentioned by *Acharya* are followed now-a-days also like *Vrana Prakshalana* and *Pramarjana, Kanta Shalya & AnnaGrasa Shalya*

Nirharana etc. Acharya mentioned *Svabhava Nirharana as Kaasa, Kshavathu* etc can be understood as removal of inhaled foreign body by forceful cough and sneezing. *Ayaskanta* mentioned for removal of Loha can be seen used now as removal of intra ocular foreign body by magnet. In *Kanta Shalya Nirharana Acharya* mentioned after inserting *Naadi Yantra* (scope) through that insert *Shalaka* (probe) to remove Shalya, Same is used now-a-days as an overtube to endoscopy for the extraction of sharp foreign body from esophagus. In *Anna Grasa Shalya Acharya* mentioned *Skandhe Mushtina Abhikhanya*, Same is followed for food bolus impaction in children and also he stated if food not removed by above method then ask the patient to drink *Madya* or *Sneha*, same followed as intake of fizzy drinks which dislodge foreign body down.

CONCLUSION

An intelligent physician should extract a foreign body with due consideration of the form, position and adaptability of the different types of surgical instruments to the case under care. A surgeon should exercise his own discretion in removing feathered shafts (*Shalyas*) from their lodgement seats, as well as those that are difficult to remove.

A physician is free to exercise his own skill and knowledge, and to devise his own original means of extracting a foreign particle with the aid of any-surgical instruments when the steps referred to above will prove abortive. A foreign particle, which is not removed from the body and left in its place of lodging, causes swelling, suppuration, mortification of the affected portion, and a sort of appalling pain, and may eventually lead to death. Therefore a surgeon should spare no pain in extracting a foreign particles from its lodging seat.

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