

## A CONCEPTUAL STUDY ON BANDAGING AND ITS UTILITY IN AYURVEDA

<sup>1</sup>Dr.Samtha S <sup>2</sup>Dr.Aiyanna P P <sup>3</sup>Dr.Siddayya Aradhyamath  
<sup>1</sup>PG Scholar <sup>2</sup>Assistant Professor <sup>3</sup>HOD, Department of PG Studies in Shalyatantra J S S  
Ayurveda Medical College, Mysore, Karnataka-India

### ABSTRACT

*Bandana* or bandaging is the concept of using muslin, cloth, gauze etc to hold the dressings in position. The different types of *bandha* and bandage has been described elaborately in *Susrutha Samhitha*, *Ashtangahrdaya* and *Charaka Samhitha*. The types and turns of bandage differ from the area of the body. There are almost 15 types of bandage in *Ayurveda*, the position of tying the knot and re dressing intervals according to the *rtus* has been mentioned. In this article, an attempt is made to review on concepts of bandana and try to understand the relevance of it in practice of *Shalyatantra*. Wound dressing is not the only area where bandage is done, it is also done in gynaecological disorders, prolapse of rectum, fractures etc. So this article is just to throw light on the various utilities of *bandha* in medical field.

**KEYWORDS:** *Bandha*, Bandage, *Vrma*, *Sandhi*

### INTRODUCTION

*Bandha* plays an important role in healing of the wound and keeps the structures like *asthi* and *sandhi* in place. *Bandha* causes *sodhana* and *ropana* of the *vrana*. In the treatment of *vrana* the first step is *aalepa* after that *bandana* should be done<sup>1</sup>. *Acharya Susrutha*<sup>1</sup> and *Acharya Vaghbata*<sup>2</sup> has elaborately mentioned about *bandana*. *Acharya Charaka* said about *Bandhana* as one among 36 therapeutic measures for the treatment of ulcer<sup>3</sup>. *Acharya Susrutha*<sup>1</sup> and *Acharya Vaghbata*<sup>2</sup> has mentioned about the types, materials used, indicated and contraindicated areas of bandaging rules to be followed while bandaging and its benefits.








### DIFFERENT TYPES OF BANDAGES ACCORDING TO ACHARYAS








According to *Acharya Susrutha* the *bandanas* are 14 in number<sup>4</sup> and according to *Acharya Vaghbata* it is 15 in number<sup>5</sup> whereas *Acharya Charaka* mentions only two types of *bandana* that is according to the direction clockwise or anti clockwise<sup>6</sup>. All the fourteen types of bandage described in the book of surgery are covered under the two categories described above<sup>7</sup>.







### DIFFERENT TYPES OF BANDAGES ACCORDING TO ACHARYAS IN AYURVEDA AND MODERN MEDICINE





**TABLE 1**

Sl.N o.	<i>Susrutha Samhitha</i> <sup>8</sup>	<i>Ashtanga Hrdaya</i> <sup>9</sup>	Modern Term And The Area Of	Place of Bandaging According
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			Usage in Contemporary Medicine <sup>10</sup>	To Ayurveda
1.	<p><i>Kosa</i></p>  <p>Image 1</p>	<i>Kosa</i>	<p>Finger bandage Adhesive wound dressing specially designed to fit the contours of <b>finger tip</b>. Image 2</p> 	Around minor joints of fingers
2.	<p><i>Dama</i></p>  <p>Image 3</p>	<i>Dama</i>	<p>Crepe bandage Image 4</p>  <p>Image 4</p> <p>A crepe bandage provides pressure to a <b>limb or joint</b>. It is used to reduce swelling, relieve pain.</p>	Around narrow or constricted areas of the body
3.	<p><i>Swasthika</i></p>  <p>Image 5</p>	<i>Swastika</i>	<p>Cross or Spica bandage Image 6</p>  <p>Image 6 Used for joints.</p>	Around the joints, tendons, sore, palm, eyebrows, area between breast and ear.
4.	<p><i>Anuvellitha</i></p>	<i>Anuvellitha</i>	<p>Spiral bandage</p> 	Limbs

	 <p>Image 7</p>		<p>Image 8 Spiral bandage is turned spirally upwards or downwards according to the circumstances mostly used in case of limbs.</p>	
<p>5.</p>	<p><i>Muttoli</i></p>  <p>Image 9</p>	<p><i>Muttoli</i></p>	<p>Winding bandage</p>  <p>Image 10</p>	<p>Neck, Penis</p>
<p>6.</p>	<p><i>Mandala</i></p>  <p>Image 11</p>	<p><i>Mandala</i></p>	<p>Circular bandage</p>	<p>Abdomen, Chest Arm(Around circular parts of body)</p>
<p>7.</p>	<p><i>Sthagika</i></p>  <p>Image 12</p>	<p><i>Sthagika</i></p>	<p>Stump Bandage</p>  <p>Image 13 The purpose for bandaging a stump is to shrink and shape the stump</p>	<p>Tip of Thumb, Fingers, Penis</p>
<p>8.</p>	<p><i>Yamaka</i></p>  <p>Image 14</p>	<p><i>Yamaka</i></p>	<p>Twin, Double</p>	<p>Conjoined Ulcer</p>

9.	<i>Khatva</i>  Image 15	<i>Khatva</i>	Four tailed Bandage In this type of bandage the two ends are split longitudinally to make four tails. The four ends are tied together behind the head.	Mandible, Temple, Neck
10.	<i>Cina</i>  Image 16	<i>Cina</i>	Eye bandage  Image 17	Eye and L. Canthus
11.	<i>Vibandha</i>  Image 18	<i>Vibandha</i>	Many tailed bandage	Back, Chest Abdomen,
12.	<i>Vitana</i>  Image 19	<i>Vitana</i>	Capeline Bandage  Image 20 A cap like bandage covering the head.	Head
13.	<i>Gophana</i>	<i>Gophana</i>	T Bandage A bandage shaped like the letter T and used for the female perineum and, in certain cases, the head.	Chin, Nose, Lips, Shoulder, Bladder

				
	Image 21			
14.	<i>Pancangi</i> 	<i>Pancangi</i>	Five tailed bandage	Areas above Sternum
	Image 22			
15.		<i>Utsangi</i> 	Arm Sling 	Arm
		Image 23	Image 24	

**BANDAGE MATERIALS ACCRDING TO DIFFERENT ACHARYAS<sup>11,12</sup>**

According to *Susrutha Samhitha* and *Ashtanga hrudaya* the materials used are

**Table 2**

Sl.No	Materials	<i>SushruthaSamhitha</i>	<i>Ashtanga hridaya</i>
1	<i>Ksauma</i>	✓	✓
2.	<i>Karpasa</i>	✓	✓
3.	<i>Avika</i>	✓	✓
4.	<i>Dukulu</i>	✓	✗
5.	<i>Kauseya</i>	✓	✓
6.	<i>Patrorna</i>	✓	✗
7.	<i>Cinapatta</i>	✓	✗
8.	<i>Antarvalkala</i>	✓	✗
9.	<i>Carma</i>	✓	✗

10.	AlabuSalaka	✓	✗
11.	LataVidala	✓	✗
12.	Rajju	✓	✗
13.	Santhanika	✓	✓
14.	Tulaphala	✓	✓
15.	Loha	✓	✗
16.	Snayu	✗	✓
17.	Valkala	✗	✓

These accessories should be used in considerations of the emergencies of each case, time or season of the year.

### YANTRANAS (METHOD OF FIXING OF BANDAGE)<sup>13</sup>

1. Urdhwa
2. Tiryak
3. Adha

The *Kavalika* should be placed firmly (on the seat of the wound) and then the surgeon having pressed it with his left hand should place a piece of straight, soft, untwisted and unfolded linen over it, and then firmly tie up the bandage in a manner so as not to leave any knot over the seat of the wound as it causes discomfort to the patient.

### THREE TYPES OF BANDAGING<sup>14</sup>

Depending upon the location of the wound, Bandaging is of three kinds.

- a) *Gadha*
- b) *Sama*
- c) *Sidhila*.

*Gada*- Though a firm bandage does not cause pain.

It should be tied around *Uru*, *Sphik*, *kaksha*, *Vankshana*, *Murdha*.

*Sama*: Bandage which is neither too loose nor tight.

Bandage should be of moderate firmness over *Sakha*, *Vadana*, *Karna*, *Urah*., *Prstha*, *Parswa*, *Gala*, *Udara*.

*Sithila*: This type of bandage which allows movements of air from inside is done around *Mehana*, *Mushka*, and *Netrasandhi*.

### BANDAGING ACCORDING TO DOSHA CONDITION<sup>15</sup>

Table 3

VATA KAPHA CONDITION	
<i>Sithilabandha</i>	<i>Samam</i>
<i>Sama</i>	<i>Ghada</i>
<i>Ghada</i>	<i>Sama</i>

Table 4

PITTAJA AND RAKTAJA CONDITION	
<i>Gadhabandha</i>	<i>Samabandha</i> used
<i>Samabandha</i>	<i>Gadhabandha</i> is used
<i>Gadhabandha</i>	Should be tied more tightly than usual

### BANDHANAKALA<sup>16</sup>

In diseases of *pitta* and *raktha* origin, bandaging should be done twice in a day for *sarat* (September-November) and *Greeshma* (May-July) *rtus* whereas in diseases of *vata* and *kapha* origin, the bandage should be done in *Hemantha* (November-January) and *Vasantha* (March-May) *rtu* should be once in three days. Here *Acharya Susruta* also leaves the opinion to the *Vaidya* saying that he can decide it using his own intelligence.

### BANDHANAABHAVA<sup>17</sup>

If the *bandhana* is not done, the wound can be affected by the bite of flies, assault of grass, sticks, stone pebbles, and sand, many kinds of pain due to constant exposure to heat or cold. The wound can develop into



non-healing ulcer and applied *Alepa* will be dried, encrusted and can speedily fall off.

### **BENEFITS OF BANDAGING**<sup>18</sup>

If bandana is not done then *vrana* will be troubled especially by *masakadamsa*, *trina*, *kashta*, *pamsu*, *sitavata*, *aatapa* etc., *vididha vedana* and complications develop, the wound becomes vitiated and poultices etc gets dried up quickly. When the bandage is applied in proper manner there will be relief of pain, purification of blood and softness of the wound. Crushed and lacerated wounds, fractures, dislocation of joints, bone hanging, cutting or tearing of bones, tendons, veins etc heal quickly by bandaging. The wounded person will be able to sit, walk and stand easily finds comfort in lying and sitting and the wound heals quickly.

### **CONTRAINDICATION OF BANDAGE**<sup>19</sup>

According to *Acharya Sushruta* Bandaging is contraindicated in wounds due to vitiated *raktha*, *pitta*, trauma and poison when associated with symptoms like *sopha*, *daha*, *paka*, *toda*, *vedana* as well as those which is an outcome of therapies like the application of *Kshara*, *Agni* and *Dagdhavrana*, *prakupita prasirnamamsa* due to *paaka*.

Wound due to conditions like *Kushta* or wound due to *madhumeha*, condylomata due to a bite from a rat or any other poisonous wound and in inflammation in connective tissue or severe inflammation.

According to *Acharya Vaghbata* bandaging is contra indicated for ulcers which are due to *Kushta*, *Agnidagdha*, *Madhumehapidaka*, *Karnika* of rat bite, *Ksharadagdha*, those caused by poisons, *mamsapaka*, *darunagudapaka*, ulcers with pain as well as

burning sensation with swelling and those associated with *visarpa*.<sup>20</sup>

There also *Acharya Susruta* has given the authority to *Vaidya* to decide whether to apply the bandage or not after considering the nature of habitat, *dosas* and seasons.

### **BANDAGE**

Bandana is similar to bandage used by any layman in day to day life. Bandage is a strip of material used mainly to support and immobilize a part of the body.

### **USES**<sup>21</sup>

- 1.To reduce the swelling like in lymphodema.
- 2.To keep dressings in position.
- 3.To support splints.
- 4.To stop bleeding/oozing.

### **DYSMERGIA**<sup>21</sup>

The technique of bandaging is called dysmergia.

### **MATERIALS OF BANDAGE**<sup>22</sup>

- 1.Cotton bandage
- 2.Linen
- 3.Flannel
- 4.Domette
- 5.Muslin Bandage
- 6.Adhesive zinc oxide plaster
- 7.Impregnated bandages

### **TYPES OF BANDAGES**<sup>23</sup>

#### **A)ROLLER BANDAGE**



Image 25

Continuous roll of material, which is rolled over the part to cover the area. Used in

**limbs** and available in different length and width of 1 inch,2 inch,4 inch or 6 inches.

Used in different ways of

- i) Circular turns
- ii) Spiral turns
- iii) Reverse spiral turns
- iv) Figure eight turn
- v) Recurrent turn
- vi) Spica bandage.

Also known as turns of bandaging.

**i) CIRCULAR TURN**



Image 26

Continuous roll placed over the same place

**ii) SPIRAL TURNS**



Image 27

After the initial turn of the bandage it ascends proximally overlapping the 2/3 rd of the previous turn.

**iii) REVERSE SPIRAL TURN**

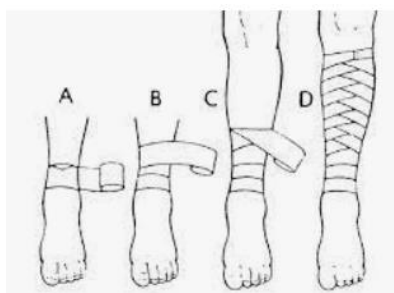


Image 28

Here each spiral turn is reversed in opposite direction to attain uniform pressure. Used in **limbs** and areas end as cones.

**iv) FIGURE OF EIGHT**

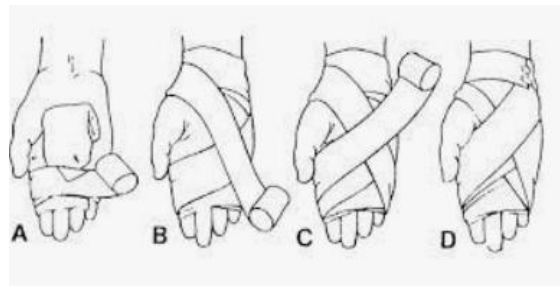


Image 29

Used for joint to keep it in extension. Bandaged turned around the limb spirally outward and downward in the manner of figure of eight continued above and below by circular turns. Used in **knee, elbow, wrist, ankle and for clavicle.**

**v) RECURRENT TURN**



Image 30

It is used in **head, amputation stump.** Here initially circular rolls are made and over that half turns are made to cover other parts of the area required.

**vi) SPICA BANDAGE**

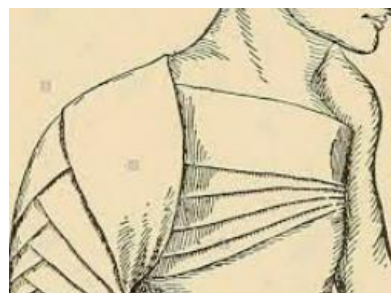


Image 31



Spica means eye of a bean. Used for **joints** has got ascending and descending turns with each turn overlap and cross each other. It is used in **hip, groin, shoulder, breast or thumb.**

#### vii) DIVERGENT SPICA



Image 32

Used to **cover a flexed joint.**

#### viii) SPECIAL TURNS

Special type of bandages used in certain parts of the body, ego capeline bandage for the head, supporting bandage for the breast etc. The above can also be considered as turns of bandaging.

#### B)T BANDAGE



Image 33

Consist of a horizontal limb and vertical limb attached to the middle of the horizontal limb. This looks like T. It is mainly used in operations of **perineum and anal canal.**

#### C) TAILED BANDAGE



Image 34

May be four tailed or many tailed bandage. It is used to **support dressings** on a wide area like in **burns dressings, over abdomen or chest wall.**

#### FOUR TAILED BANDAGES

Two ends of this bandage are longitudinally split to make four tails.

#### MANY TAILED BANDAGE

A square piece of flannel is stitched to five long strips sewn at right angles to the piece of flannel in such a way that these strips overlap one another for 2/3 rd of their width.

#### D) TUBULAR BANDAGE



Image 35

These are stockings which are unrolled over the limb to give pressure effects. It is used in **lymphoedema, varicose vein, and in post operative period following surgeries of the limb.**

#### E) TRIANGULAR BANDAGE



Image 36

This is a diagonally folded piece of cotton cloth. It is used for **supporting elbow or forearm**. A wide gauze is used to cover the arm, forearm and elbow which again winds around the neck.

#### F) CRAVAT BANDAGE

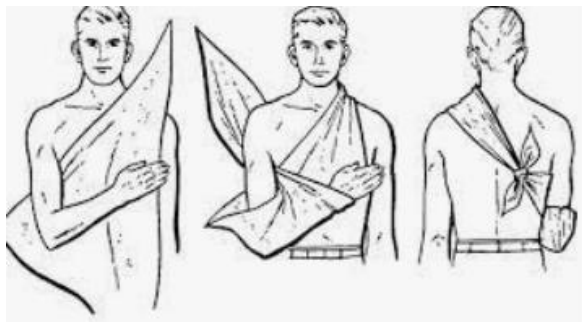


Image 37

It is a folded type of triangular bandage, which is used as a **sling around the neck, when elbow requires to be rested.**

#### PRINCIPLES OF BANDAGING



Image 38

**Position:** Proper positioning of the limb is a must before bandaging.

**Direction:** Bandage applied from distal to proximal end, unrolled outwards.

**Initial bandaging:** After a few initial circular turns, the required type of bandaging is then done. During bandage, latter turn should overlap 2/3 rd of earlier turn.

**Pressure:** Firm adequate pressure should be used during bandaging.

**Completion:** After completion of procedure knot should not lie over the area or over the bony points or over the back.

#### Precautions

1. Bandage should not cause venous or arterial compression.
2. Digits should be left open and circulation in the digits should be observed for.

#### DISCUSSION

*Bandana* is an inevitable part in the daily practice of every doctor. The bandana is done not only according to the condition of the disease, it is done according to the climatic conditions and the doshas involved in the diseases. As per the contemporary system of medicine the bandaging is done according to the site of wounds, dislocations or fractures but they have not mentioned about re-bandaging within one day or once in three days according to the disease condition or the climate. But *Ayurveda* which was present thousands of years back itself has given personal importance to patients, which may vary from person to person and season to season. But in contemporary system of medicine all patients have the same treatment irrespective of *rtu* and *dosha*. Apart from the usage in wounds, dislocations, fractures bandage is also used in management of rectal prolapse in *Ayurveda*. In *Gudabhransa gophanabandha* is indicated. These are all contributions of Ayurveda to the entire medical fraternity, which needs more exploration, validation and also creating awareness among practitioners for the better benefit of the patients.

#### CONCLUSION

Bandage is essential in holding the dressings in position and also to hold the dislocated and fractured parts without movement. The

concept of bandage and instructions which has to be followed for bandage has been elaborately described in the Ayurvedic and contemporary systems of medicines. The turns taken, type of bandage in each part of the body, precautions to be followed has been well defined. The dressings are fixed to the place by bandages. Bandages are inevitable in the practical life of surgeons. It is required in the post operative *arsa*, *bhagandara*, *bhagna* cases of patients. It helps the patient to lie comfortably and accelerates wound healing. In diabetic wound ulcers, venous ulcers, dislocations of joints, rectal prolapse, bandages can be used to hold the dressings and organs in place. So having a sound knowledge of bandaging is an essential tool for any medical professional and this article is a revisit to the past vedic era and the knowledge our acharyas had regarding the bandha and its utility in treatments.

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#### CORRESPONDING AUTHOR

Dr. Samtha S

PG Scholar, Department of PG Studies in Shalyatantra, JSS Ayurveda Medical College, Mysore, Karnataka-India

Email: samtha.s@gmail.com

Source of support: Nil

Conflict of interest: None Declared

#### Cite this article as

Dr. Samtha S : A Conceptual Study on Bandaging and its Utility in Ayurveda VI(5): 1893-1904