



Research Article

**INNOVATION OF KSHARAPLOTA (MEDICATED GAUZE) IN THE MANAGEMENT OF VRANA (ULCER)**

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**ABSTRACT**

Indians have paid enough attention to discover the therapeutically effects of plants and herbs as medicinal agents in many diseases. Plants contain Alkaloids and various other chemical substances which form the base for many medical preparations. Most of the drugs used are derived from the natural world through the experiments of earlier civilization. *Ksharaplota* (medicated gauze) is an innovative concept used for management of infected and chronic wounds and ulcers. This *Ksharaplota* (medicated gauze) was prepared with the help of *Snuhikshira* (latex of *Euphorbia neriifolia* Linn.), *Apamargakshara* (ash of *Achyranthes aspera* L.) and *Haridra* (*Curcuma longa* L.). Single coating of the above drugs are given to the *Plota* (gauze). It can be used to heal wounds and ulcers. This *Ksharaplota* is prepared similarly with basic concept of *Ksharasutra* preparation.

There are number of dressing materials given by *Sushruta* e.g. *Pichu* (cloth), *Kawalika*, *Plota* (gauze) and *Vikeshika* or *Varti* (wick). Among that we selected *Plota* as a dressing material which can be used as for deep and broader wounds and ulcers. In the present study preparation of *Ksharaplota*, advantages, indications, disadvantages, sterilization, storage, standardization were observed for simple and safest parasurgical practice.

**KEY WORDS :** *Ksharaplota*, Medicated gauze, *Snuhikshira*, *Haridra*, Gauze, Wound, Ulcer.

**INTRODUCTION**

*Ayurveda* has been showing the model way of living, which assures a disease free, healthy long life. The *Ayurvedic* is a Knowledge consisting of many pioneering concepts in concised form. *Sushruta* has given number of dressing materials Eg. *Pichu*, *Plota*, *Kawalika* and *Vikeshika*. Among these *Pichu* is used only to clean the *Vrana* as well as to absorb the *Vranastrava* (oozing) while *Kawalika* is used as dressing pad or just as to cover the wound [1].

*Plota* [2] can be used to clean the *Vrana* (ulcers) as well as to cover the *Vrana*. It can also be used as *Varti* in those wounds or ulcers, which are very deep to clean easily. In such wounds or ulcers, *Plotavarti* (gauze wick) removes all the debris hidden inside the wounds or ulcers.

*Acharya Sushruta* has mentioned *Kshara* (alkali)[3] as in *Anu-shastra* (subsidiary instrument used in place of a regular surgical instrument), *Upayantra* (a minor or secondary instrument), *Agropaharaniya* and one of the *Upakram* of *Vrana*. *Acharya Sushruta* emphasizes on the fact that, when the *Kshara* administered by an ignorant physician can harm the body like *Agni*, *Shastra* and *Vajra* or death itself [4]. While the same *Kshara* administered by an intelligent

and well skilled physician it can prove potent enough and subside all serious and most troublesome disease speedily in which it is indicated. Thus, *Kshara karma* has been consider as a wealth and weapon in *Ayurvedic* Pharmacopeia.

*Acharya Sushruta* defines the *Kshara*; the substance possessing *Ksharana* (melting away) and *Kshanan* (destroying the lesion) properties[5]. *Ksharana* means one which mobilizes and removes the deformed skin, flesh etc. or which removes the vitiated *Doshas*. Although as *Dalhana* mentioned a few authorities considered the reference as *Ksharana* means *Shodhan* (cleansing). Probably these two groups of authorities intended to narrate the meanings of *Ksharana* and *Kshapana* as about *Pratisaraniya* and *Paniya Kshara* respectively. *Kshanan* means which destructs the deformed Skin, Flesh etc. *Acharya Charaka* defines *Kshara* as one, which scraps the abnormal tissue from the locating viscera and drags it down after dissolving because of its corrosive nature [6].

During the preparation of *Ksharaplota*, it is coated with *Snuhikshira*, *Apamargakshara* and *Haridra*. All these drugs are *Shodhana* and *Ropana*[7] in property.

For the reason *Ksharaplota* is used for debridement or to remove unhealthy tissue and enhances formation of healthy granulation tissue so that normal epithelization occurs earlier.

#### AIMS AND OBJECTIVES

1. To prepare the *Ksharaplota* with *Snuhikshira*, *Apamargakshara* and *Haridra* powder.
2. To sterilized the *Ksharplota*.
3. To established standard *Ksharplota* as dressing material for chronic wounds and ulcers.

#### MATERIAL AND METHODS

Preparation of *Ksharplota* was carried out at S.V.N.H.T'S Ayurved Mahavidya, Dept. of Shalya Tantra, Rahuri, Ahmednagar, Maharashtra, India.

Material required for preparation of *Ksharaplota* as mentioned below.

1. *Snuhikshira*
2. *Apamarg Kshar*
3. *Haridra* powder
4. Single layer Gauze piece
5. Wooden Ring
6. Cabinet

##### 1. *Snuhikshira*

It is collected by incising the stem of *Snuhi* (*Euphorbia neriifolia* Linn.) plant. The secretary milk so obtained from incision should be stored in a pot. As the *Kshira* (thickened milk) has tendency to coagulate early, one requires fresh *Kshira* every time. The best season for collection of *Snuhikshira* is *Sharad Ritu* (Autumn season)<sup>[8]</sup>.

##### 2. *Apamarga Kshara*

Whole plant of *Apamarga* (*Achyranthes aspera* L.) is to be collected and cut in pieces, after drying the plant in shade. It should be burned in fire. Ash is collected and dissolved in 6 times of water, the solution, so formed is filtered with the help of percolator. Residual ash gained is dissolved in 4 times of water and the same procedure is repeated at least twice in order to take away all the alkaline material from ash. Ultimately, the ash remains as a neutral residue, which should be thrown, the fluid is filtered several times and finally<sup>[9]</sup>, the *Kshara* is obtained by evaporating the filtered solution.

##### 3. *Haridra*

Dry rhizomes of *Haridra* (*Curcuma longa* L.). Plant are cut into pieces and powdered, then sieves the powder through a fine clothe, the fine powder should be kept in jar for use.

#### 4. Gauze Piece

According to *Sushruta* it is similar to *plota* (gauze). It is a piece of woven surgical wool. A single layer gauze piece is used, having diameter 23cm. to the size of circular ring for coating, for the preparation of *Ksharaplota*.

#### 5. Wooden ring

A structure of double ring is used to hold the gauze piece, with the help of this ring, gauze piece can be hold tightly so that coating of *Snuhikshira*, *Apamargakshara* and *Haridra* should be made very easy and effective.

#### 6. Cabinet

It is used for drying the *Ksharaplota*, which are placed in wooden rings specially designed for this preparation. The prepared *Ksharplota* with wooden rings kept in an air tight cabinet for drying, sterilization & storage purpose<sup>[10]</sup>.

#### Method of *Ksharaplota* Preparation

The gauze piece of size used is 23cm in diameter, which is fixed in the doubled layered circular wooden ring. Gauze piece is made so tight that the coating is made uniformly. Initially on 1<sup>st</sup> day *Snuhikshira* was applied over the gauze on its whole circumference with the help of small cotton swab, hands should be gloved before smearing. The wet coated gauze with rings should be placed inside cabinet and it is dried for a day. On the 2<sup>nd</sup> day, dried gauze was again smeared with *Snuhikshira* followed by *Apamargakshara* with cotton swab; let it dried in a cabinet for a day. On the 3<sup>rd</sup> day, dried gauze was smeared with *Snuhikshira* followed by *Haridra* powder; let it dry for a day in cabinet.

In this way a single coating of each *Snuhikshira*, *Apamargakshara* and *Haridra* powder are completed and sealed in polythene packs. *Ksharaplota* should be placed in cabinet for safety storage as well as for sterilization.

#### Advantages

1. It can be preserved for long time.
2. Good binding action.
3. Good tolerance by the patient.
4. *Kshara* acts as *Chedana* (excision), *Bhedana* (incision), *Lekhana* (scraping) simultaneously.
5. It acts as *Shodhana* (cleansing) and *Ropana* (healing) combine.
6. It is easy to apply.
7. It is less irritant.
8. It is used as dressing material in the treatment of wound & ulcer.
9. It is useful to remove slough, devitalized tissues and pus pockets.

10.No other additional local dressing material required.

#### Indications

- 1) Any open wound /ulcer.
- 2) Recurrent wound /ulcer.
- 3) Deep wound /ulcer.
- 4) Superficial wound /ulcer.
- 5) Infected wound / ulcer.
- 6) It is useful in Diabetic wound to remove slough.

#### Disadvantages

- 1) Some allergic reactions may occur due to alkaline properties.
- 2) It cannot be used near eye, face, genital parts and breast, because of delicate and smooth skin.
- 3) In preparation of *Ksharaplota* a skill hand is very important as it requires uniform & equal thickness of *Ksharaplota* for clinical application.
- 4) It cannot be used in sutured wound.

#### Analysis of *Ksharaplota*

It was done in the Dept. of Pharmacognosy and Pharmaceutical at College of B.Pharmacy, Rahuri, Ahmednagar. (Table 1)

**Table 1: Analysis of *Ksharaplota***

S. No.	Name of the test	<i>Ksharaplota</i>
1.	Initial weight of Plain Gauze	0.932gm
2.	Total Weight of coated Gauze	20.134gm
3.	Weight of coated material	19.202 gm
4.	Color	Brownish
5.	Thickness of coated Gauze	8mm.
6.	Shape	Circular
7.	Size	23 cm.
8.	pH	9.13
9.	Moisture Content	20.64 %
10.	Total Ash Value	31%

#### CONCLUSION

The newer concept of *Ksharaplota* preparation and its clinical application will open new research path to promote wound healing with *Ayurvedic* remedies in a modern surgical practice. For more concrete clinical evaluation of *Ksharaplota* on various wounds and ulcers, large dimensional study is essential.

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**Photographs**  
**Preparation of *Ksharaplota***



**Figure 1. Snuhikshira**



**Figure 2. Apamargakshara**



**Figure 3. Haridra**



**Figure 4. Circular Ring**



**Figure 5. Open Circular Ring Figure**



**Figure 6. Plota ( Gauze)**



**Figure 7. Cabinet**



**Figure 8. Coating of Snuhikshira**



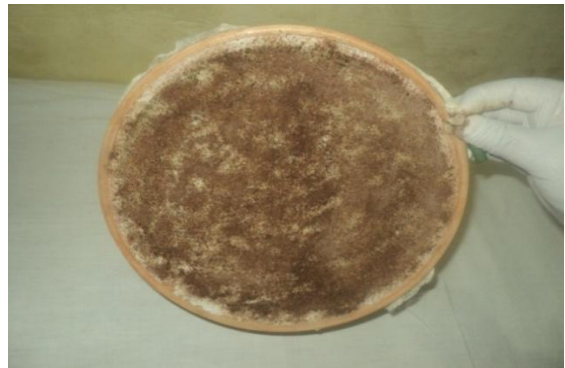
**Figure 9. 1<sup>st</sup>Complete Coating of Figure Snuhikishira**



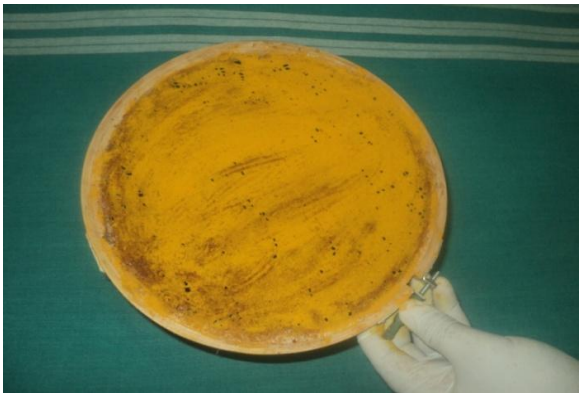
**10. Drying of Plota in Cabinet**



**Figure 11. Coating of Apamargakshara**



**Figure 12. 1<sup>st</sup> Complete Coating of Apamargakshara**



**Figure 13. 1<sup>st</sup> Complete Coating of Haridra**



**Figure 14. Storage of Prepared Ksharaplota In Cabinet**



**Figure 15. Sterilization of Prepared Ksharaplota in Cabinet**



**Figure 16. Infected Electrical Burn wound**



**Figure 17. Application of Ksharaplota**



**Figure 18. Application of Ksharaplota in Wound**



**Figure 19. Bandaging**



**Figure 20. Next Day Apperance of Wound**



**Figure 21. Complete Apperance of Wound After Ksharaplota Dressing**



**Figure 22. Complete Apperance of Wound After Ksharaplota Dressing**



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