1. INTRODUCTION

Wounds, ulcers and their management are the basics of surgical practice. Acharya Sushruta, 'The father of surgery', has explained Vrana (wounds and ulcers) and their management in detail, in his text Sushruta Samhita. For management of Vrana he explained 'Shashti Upakrama' i.e. Sixty measures. Vranadhoopan is one of them. To carry out Vranadhoopan karma, he explained Vranadhoopan Yantra in details. While conducting Vranadhoopan Karm at our institute we found earthen Vranadhoopan Yantra, explained by Sushruta, was very heavy, neither handy nor durable in day to day practice. As it was not available in market, we had order it to a potter. It was too costly. It was not good looking. So, we decided to modify Vranadhoopan Yantra to make it light weight, handy, durable, inexpensive and smart to fit modern clinical setups. We replaced earthen Vranadhoopan Yantra with metallic Vranadhoopan Yantra which was durable, light weight, can be manufactured at very least price. Also, we used electric cooking heater to provide calibrated heat to the Vranadhoopan Dravyas and produced pure Vranadhoop.

Keywords – Vrandhoopan, Vranadhoopan Yantra, Shashti Upakrama, Vrana Netra.
fixed to the Dhoopan Yantra at the hole in the base of upper saucer.

1.3. Preparation of Dhoopa

The Dhoopan Yantra along with Vrana-Netra was given heat. Ultimately the Dhoopan Drayvas in Dhoopan Yantra were heated enough to liberate volatile components. These evaporated volatile components form Dhoopa (fumes). The Vrana to be treated was exposed to the Dhoopa.

1.4. Need of modification of Vranadhoopan Yantra

- Now a day life is faster. It is very obvious that, the Vranadhoopan Yantra, as described by Sushruta is heavy, tedious to assemble, carry here and there, dismantle and clean. Manufacturing of such big earthen saucers is time consuming and costly. Also, the chances of breaking of earthen material are very high.

- The use of such Vranadhoopan Yantra might be applicable in the era of Sushruta due to routine use of earthen pots, easily and cheaply available man power but in present era it is not so applicable.

- Vranadhoopan is a time-tested technique widely used in practice. Many researchers have proven its efficacy successfully.

- Hence, to make Vranadhoopan procedures easier, safe, inexpensive and popular we decided to modify Vranadhoopan Yantra.

2. MATERIALS AND METHODS

The Vrana under treatment is exposed to the Dhoopa during the procedure of Vranadhoopan. Dhoopa (fumes) should be pure i.e. it should not be mixed with Dhooma (smoke) produced due to burning of Dhoopan Dravya. Hence controlled heating of Dhoopan Drayvas is expected so that only Dhoopa (fumes) are produced.

2.1. Modified Vranadhoopan Yantra (Wound Fumigation Apparatus) (Figure No. 1.)

To modify Vranadhoopan Yantra, we used thick iron plate to replace lower earthen saucer. To replace upper saucer and Vrana-Netra, we prepared a specialized funnel shaped instrument with the help of a blacksmith. The 8 inches (Ashtangula) long nozzle of funnel was prepared in such a way that its maximum outer circumference was 25mm (as that of average circumference of Kalay/ white pea [Lathirus sativum]

2.2 Production of Dhoopa and Vranadhoopan with the help of Modified Vranadhoopan Yantra (Figure No. 4.)

For production of pure Dhoopa, controlled heating of Dhoopan Dravyas was expected. To produce controlled heat, we used electric cooking heater with heat controlling knob. The Dhoopan Drayvas were placed in the lower plate of Modified Vranadhoopan Yantra. The Yantra then placed on the electric cooking heater. The knob was set to minimum and the electric cooking heater was supplied with electricity. The heat was conducted to the Dhoopan Dravyas through the thick metal plate. As the Dhoopan Drayvas became warmer and warmer, more and more fumes were produced. The inverted conical shape directed the fumes towards the nozzle (Vrana-Netra) so that uninterrupted and concentrated flow of fumes was maintained.

Now, the body part having Vrana was placed approximately half to 1 foot above the Vrana-Netra in such a way that the Vrana can easily be exposed to the Dhoopa. In every case, initially Vranadhoopan was carried twice a day for 10 to 15 minutes each time. The duration of Vranadhoopan was decided as per site, size, and severity of pain, amount of debris, amount and nature of the discharge, foul smell present in the Vrana. The frequency of Vranadhoopan was reduced to once per day, then once per alternate day as Vrana became clean, tidy with reduction in severity of pain, size, depth, discharge and foul smell. The exposure time was also reduced gradually up to 5 minutes. Every time wound was wiped with sterile gauze piece soaked in sterile water and sterile dressings applied.

3. OBSERVATION AND RESULTS

The key ingredients in Vranadhoopa are volatile tars, resins and oils present in Dhoopan Dravyas. Acharya Sushruta expected only the liberation of these active ingredients while performing Vranadhoopan. These ingredients readily evaporate out just by gentle heating/warming Dhoopan Dravyas. So Sushruta advised thick earthen saucers as
container of Dhoopa Dravyas. The thickness of lower saucer allowed less heat to reach up to Dhoopa Dravyas placed in Vranadhoopan Yantra. This ensured only warming of Dhoopa Dravya and avoided burning of them leading to production of smoke which is not expected. The same purpose is served in modified Vranadhoopan Yantra as controlled heat is provided to the thick iron plate containing Vranadhoopan Dravyas.

As only pure fumes are produced with the help of Modified Vranadhoopan Yantra, fast wound healing is observed. We treated infected wounds and chronic Non-Healing ulcers secondary to Diabetes Mellitus, tuberculosis, varicose ulcers, etc. with the help of modern Vranadhoopan Yantra. We got very satisfactory results. The non-healing Ulcers secondary to other diseases were given appropriate oral treatment of underlying disease along with Vranadhoopan locally.

We also observed that conduction of Vranadhoopan was very easy with the help of Modified Vranadhoopan Yantra. All the drawbacks of classical Vranadhoopan Yantra (described by Sushruta) are bypassed due to this modified Yantra. This modified Vranadhoopan Yantra is very handy as it is lightweight, easy to dismantle-clean-reassemble. It is breakage free and reusable as all the components are made up of metals. It is inexpensive one-time investment. It is pollution free (environment friendly) due to the use of electric cooking heater. Last but not least it is attractive and presentable. It is very suitable for modern clinical and hospital set ups due to all these advantages.

4. DISCUSSION

Ayurveda is the eternal science of health developed, flourished and written thousands of years ago when man was very near to nature. With great time lapse and modernized, corporatized today’s culture man is far away from nature. We leave in modern era where presentation is the key to success. Also, quick, easy, low cost and result oriented treatments without any adverse effects are in demand. This forms the basis for modification of techniques and instruments described in Ayurveda without changing the basic principles behind them. We dealt with many troubles while conducting Vranadhoopan with the help of classical Vranadhoopan Yantra described by Sushruta. So, we developed Modified Vranadhoopan Yantra to match modern clinical practice demands without interfering with the basic principles.

In the procedure of Vranadhoopan, Vrana is expected to be exposed to Dhoopa (fumes produced by gentle heating/warming Dhoopa Dravyas) and not to Dhooma (the smoke produced by burning of these Dravyas). Due to controlled heat produced with the help of electric cooking heater, the Vranadhoopan Dravyas in modified Vranadhoopan Yantra only get heat to liberate volatile active ingredients in them to produce pure Dhoopa (fumes). As Dhoopa Dravyas remain unburnt, no Dhooma (smoke) is produced. The pure fumes thus produced are expected to concentrate and come out through Vrana-Netra. The conical shape of upper compartment and tapering nozzle serve this purpose perfectly. We have maintained the dimensions of Vrana-Netra as described in Sushruta Samhita while preparing the nozzle. The pure fumes thus produced when perfectly concentrate towards Vrana, give the fruitful results. Sushruta explained the best criteria for developing an ideal instrument.7

An adequately sized instrument should be prepared so that it is suitable to perform the desired work. It should have smooth or rough openings as per requirement. It should be prepared in such a way that it remains easy to hold, strong enough (unbreakable) and good looking. The Modified Vranadhoopan Yantra satisfies all these criteria. Really it balances both the technology and the basic principles.

5. CONCLUSION

This article is an attempt to put forward the information about Modified Vranadhoopan Yantra which will overcome the limitations of Classical Vranadhoopan Yantra. There are many limitations to the use of Classical Vranadhoopan Yantra. As it is made up of earthen material it remains neither handy nor durable. Also, it is too costly and time consuming to get it manufactured. Moreover, chances of production of impure fumes (mixed with smoke) due to burning of Vranadhoopan Dravyas in the presence of uncontrolled heat are high. To overcome all these limitations, I modified the Vranadhoopan Yantra, Vrana-Netra and the heat source. No basic principles were challenged during the process. The electric cooking heater used is economic and eco-friendly. The controlled heat produced by adjusting the heat controlling knob to min-
imum (60-80°C) avoids overheating and burning of Dhoopan Dravyas and helps the production of pure fumes (containing active ingredients required for Vranadhoopan purpose). The components of Modified Vranadhoopan Yantra are made from iron hence unbreakable and reusable (one-time investment, hence inexpensive). Also, these components are easy to set up, dismantle and clean hence handy. Vrana-Netra follows dimensions as per Sushruta. Hence the Modified Vranadhoopan Yantra is user friendly, eco-friendly, economical, time conserving, presentable, result oriented and perfect for modern clinical set ups.

6. REFERENCES

3. Ibidem 1, Chikitsasthana; Dwivraniya Chikitsit Adhyay: Chapter 1, Verse 80,81. p. 10.

7. FIGURES

Figure No. 1. Modified Vranadhoopan Yantra
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