

**EFFECTIVE AYURVEDIC MANAGEMENT OF NON HEALING POST OPERATIVE
ABDOMINAL SURGICAL WOUND- A CASE STUDY*****Dr. Sarita Pradip Gaikwad, M.D., Ph.D. (Kayachikitsa)**

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ABSTRACT

Introduction: Non-healing of post operative surgical wound is commonly encountered problem in surgical practice. Super added Nosocomial infection complicates the healing process in hospital setting. Increasing resistance to higher antibiotics by the microbes is a major challenge in healing of post operative wounds. However Ayurved has definite answers to this alarming issue. Ayurved has strong wound healing herbal agents which can replace modern antibiotics. Ayurvedic *Shashtic* (60) procedures can heal any infected wound of any magnitude. **Case study:** One 62 year old diabetic female patient was operated in a tertiary health care facility for removing Hydatid cyst in liver. The wound failed to heal despite all the modern line of management for nearly one month. The case was complicated by liver abscess. There was possibility of case landing in to Septicaemia. To save her life, the case was finally urgently transferred to Ayurved Research Department, Sassoon General Hospital, Pune. Active Ayurvedic management following *Shashtic upakram* as mentioned by Sushrutacharya, effectively completely healed the complicated wound and saved her life. **Conclusion:** This case study highlighted the strength of Ayurved in treating such hopeless surgical wounds where Modern science has limitations.

KEYWORDS: Non healing surgical wound, Abdominal surgical wound, Dustavran, Ayurvedic management, *Shashtic upakram*.

INTRODUCTION

Non-healing of post operative surgical wound is commonly encountered problem in surgical practice. When a wound that does not heal within 5-8 weeks despite following all possible care as per guidelines, may be termed as Non healing wound.^[1] Nosocomial Infection National Surveillance System (NINSS), in 2002, reported that the incidence of hospital acquired infection (HAI) related to surgical wounds is as high as 10%.^[2] Further, the report states that, rate of wound infection in case of abdominal surgery may be much higher, an incidence of 15%–25% depending on the level of contamination. Surgical Site Infection is the third most commonly reported Nosocomial infection. Any infection that occurs within 30 days of surgery at the site of surgery is termed as Surgical Site Infection.^[3] These infections prolong the healing/recovery process, increase the period of hospitalization, adding discomfort and financial loss to the patient.^[4] It may endanger life of the patient due to septicaemia. It has been estimated that each patient with a surgical site infection will require an additional 6.5 days in hospital, which results in the doubling of hospital costs associated with that patient. The mortality in such cases is reported to be 2.1%.^[5] Diabetics are more prone to die due to septicaemia. It is

well established fact that mortality rates among post operative surgical wounds in diabetics is higher than non diabetics.

CASE STUDY

This 62 year old obese Muslim female diabetic patient was admitted on 30.8.2016 in Female Medicine ward of Sassoon General hospital (teaching hospital of B.J.Medical College), Pune with complaints of Anorexia, fever and multiple joint pains. It was revealed in CT scan abdomen that there was Hepatomegaly associated with well defined cystic lesion of size 2 inch diameter in Liver with a probability of Hydatid cyst, which was confirmed later. Chest X ray showed Right sided Pleural effusion. She was transferred to female Surgical ward of Sassoon hospital, Pune. Patient was diabetic and hypertensive for 20 years. An elective surgery was planned and the hydatid cyst was excised on 14.9.2016. The recovery was uneventful and patient was discharged on 21.9.2016.

Patient had severe pain in abdomen with pus discharge from the site of surgery and reported to Medicine OPD on 26.9.2016. She was diagnosed as having Abdominal wall cellulitis; was admitted and transferred to Female surgical ward for debridement. USG abdomen showed

one cystic lesion of size 8.5 x 7.5 x 8.7 cm; another cyst of size 2.8 x 2.5 cm size was also detected; apart from that many small cystic lesions with mobile internal echoes and air foci noted within VII/VIII segment of liver. On 28.9.2016 debridement was done under Local anaesthesia with sedatives. Necrotic skin and slough was debrided. Wound was washed with Hydrogen peroxide and Betadine. Secondary sutures were taken on 4.10.2016. The wound failed to heal and there was large wound gap noticed. (Fig.No.1) During this period patient was treated with I/V Inj Monocef 1 gm BD; S/C Insulin 15--0--10 units along with oral antidiabetic agents, anti-hypertensives were continued as before. Inj Tramadol 50 mg in 100 ml Normal saline was given I/V for relieving pain in abdomen. Her Hemoglobin level dropped to 3.5 g/dL and was given 4 units (one unit=350 ml) of Packed Cell Volume by slow I/V drip. There was discharge of pus 60 ml/day from the drain. There was risk of patient going in to Septicaemia, in view of that patient was urgently transferred to Ayurved Research Department of Sassoon General hospital, Pune for further management on 20.10.2016.

On admission to Ayurved Research Department, detailed history was taken.

Patient C/o Severe pain in abdomen and discharge of pus from surgical site- *Udar-pradesh shool*, Anorexia (*Agnimandya*),

Insomnia (*Nidranash*),

Liquid stools (*Drav-mal pravrutti*)

Increased salivation from mouth (*Mukha-pak*)

Pain at anus on passing stool (*Gud-pradesi shool*)

H/o Diabetes and Hypertension for 20 years and taking Inj Insulin with Anti-diabetic and Anti hypertensive drugs regularly.

H/o Diabetes to brother (Swakul)

Past operative history- H/o Hysterectomy 25 years back under spinal anaesthesia.

Personal history: Strictly Non vegetarian;

Appetite-Low,

Sleep- Insomnia,

Addicted to tobacco for several years

H/o Pet dog in family

On general examination: Pulse-88/min; Temperature-100 °F; B.P.-120/80 mm Hg

She was obese with weight 110 Kg.

Oral cavity-inflamed; stomatitis +

Systemic exam: RS- Basal crepts+, CVS Normal

P/A- Tenderness at surgical site++++, Liver 2 finger palpable. Spleen- not palpable

Abdominal girth-107 cm

Local examination: Wound size- 20 x 10 x 2.5 cm, purulent discharge++; unhealthy granulation tissue, Blackish Slough++ Dushta-vran + (Fig No.2)

Investigations; Hb- 7.8 g/dL, WBC-15000/ccm, Platelets 4.34 Lacs/ccm, Serum Creatinine-0.7 mg/dL, SGOT-26 units/dL, SGPT-15 units/dL, Na-135 meq; K-3.8 meq;

ECG showed T wave inversion in II,III, AVF and V₂₋₆.

Table No. 1: Treatment chart.

	From	To	Details of treatment
Shaman chikitsa	20.10.16	6.12.2016	Tab Gandhak Rasayan 500 mg BD with gap of one week after 10 days Tab Sookshma Triphala 500 mg BD Guduchi+ Musta+Gokshur + Amalki 1 gm each BD Gargles with Yastimadhu+Triphala quath BD Tiktaghrit 1 TSF on empty stomach Shunthi + Haridra siddha milk 100 ml BD Sitopaladi + Avipattikar churna Half TSF each + Kutajarishta 3 TSF in one cup of warm water before meals twice daily for 10 days, followed by Sitopaladi + Avipattikar churna Half TSF each BD in warm water before food Pippalasav 3 TSF BD
	7.12.2016	27.2.17	Tab Sookshma Triphala 500 mg BD Guduchi+ Musta+Gokshur + Amalki 1 gm each BD Gargles with Yastimadhu+Triphala quath BD Tiktaghrit 1 TSF on empty stomach Shunthi + Haridra siddha milk 100 ml BD Sitopaladi + Avipattikar churna Half TSF each in one cup of warm water before meals twice daily Tab Haemoplus 1 BD; Gargles by Abolipatra swaras
	28.2.2017	15.3.2017	add Pippali 500 mg along with Guduchi+ Musta+Gokshur + Amalki 500 gm each BD Add Tab Gandhak Rasayan 2 BD Tab Gokshuradi guggul 1 BD Tab Laxmivilas 1 BD Arogya vardhini 1 BD
Local treatment/Vran-karma	20.10.2016	1.11.2016	Dhupan; Wash wound with Panch-vaikal quath daily; Apply Vran-shodhan oil and close it by sterile dressing
	2.11.2016	11.11.2016	Wash wound with Panch-vaikal quath daily; Apply Vran-ropan oil close it by sterile dressing
	12.11.2016	04.3.2017	Omit Vran ropan oil and use Jatyadi tail for wound healing.
Agnikarm	5.3.2017	----	

Patient initially responded well to Ayurvedic treatment but later recovery was slow as liver abscess complicated healing. It is likely that the bigger cyst which remained after surgery might have been ruptured causing liver abscess.^[6] There was H/o Patient becoming dyspnoeic and was timely & promptly attended by physician from Medicine department. Further the case was complicated

due to Ischemic Heart Disease, Anemia, Obesity and Diabetes. Therefore, opinion of Physician and Surgeon was taken time to time during her long period of hospitalization. Finally, complete healing of wound was achieved (Fig. No.4) and patient was discharged home on 15.3.2017.



Figure 1: Secondary sutures failed.



Figure 2: During treatment.



Figure 3: During treatment wound almost healed.



Figure 4: Follow up after 2 months.

Fig.No. 5 Before

Complete healing after
Ayu. treatment

DISCUSSION

Abdominal surgeries are prone for Surgical Site Infection to the tune of 15-25%, as mentioned earlier. Further Diabetes, Hypertension, old age, Obesity, large incision, concomitant heart disease are the known risk factors for delayed wound healing.^[7]

Vagbhat mentioned that *Vran* on abdomen & Umbilical region (*Nabhi*) were difficult to heal (*Kastasadhya*).^[8] (Sarth Vagbhat Uttar Sthan 25/15). Modern science also believes that abdominal surgeries are vulnerable for getting infected. Sushrutacharya had outlined principles of wound management in following shloka:

***Shanmulo Ashtaparagrahi Panchalakshan lakshitah I
Shashtya vidhananai nirdishte: Chaturbhi: sadhyate
Vranah II Su. Chi. 1/133***

Six aetiological factors, eight vulnerable sites, Five *Lakshnas* (Cardinal clinical features) and *Shashtic upakram*/ 60 types of procedures were mentioned by Sushrutacharya for *Vran*/ wound management, (to which modern science is not yet fully aware) and last but not the least, 4 crucial factors namely Vaidya (well experienced treating doctor), Atur/ Cooperative patient. Paricharak/ Assistant taking care of the patient and Aushadhi (appropriate medicines) are the vital factors for the successful recovery.^[9] We used appropriate treatment principles for treating this challenging case. We used Decoction of Ayurvedic herbs for washing the wound, Use of Ghrith/medicated ghee orally, application of medicated oil on the wound for shodhan (Cleansing) and thereafter for Ropan (Healing), Dhupan (medicated smoke for disinfection of wound), and Agnikarm/Cauterization.

Granthkaras have mentioned description of *Panchvalkal* namely *Vata* (*Ficus bengalensis*), *Udumbar* (*Ficus racemosa*), *Ashwatth* (*Ficus religiosa*), *Pluksh* (*Ficus virance*), *Pippalbhed* /*Hibinuxvs* (*Thepasia populnea*). These trees are *Kshiri vriksha*, have *Deerghjeevi* (long life). Their properties are *Grahi*, *Sheetal*, *Vran- Shoth- Visarp nashak*. The author had successfully used *Quath* made from the bark of *Vat* (*Ficus indicus/ bengalensis*), *Udumbar* (*Ficus racemosa*), *Ashwatth* (*Ficus religiosa*) for treating non healing/ trophic ulcers in Leprosy patients.^[10] On admission wound was highly infected. Decoction of 3 *Valkalas* was used to wash the wound. The wound was dressed with *Vran shodhan oil* which contained *Haridra* (*Curcuma longa*), *Manjistha* (*Rubia cordifolia*), *Nimba* (*Azadirachta indica*), *Madhuyasti* (*Glycyrrhiza glabra*), *Darvi* (*Berberis aristata*), *Trivarta* (*Merremia turpethum*), seed of *Tila* (*Sesamum orientale*) & *Saindhav* (*Rock salt*). All of these *dravyas* have anti-bacterial, anti- slough properties & the combined effect of all of them facilitated wound healing.

On appearance of healthy granulation tissue, the wound was dressed with *Vran ropaka oil*, which contained extracts of *Vata* (*Ficus bengalensis*), *Udumbara* (*Ficus racemosa*), *Ashwattha* (*Ficus religiosa*), *Plaksha* (*Ficus microcarpa*), *Karvira* (*Nerium oleander*), *Kadamba* (*Neolamarekia cadamba*), *Arka* (*Calotropis gigantea*), *Veta* (*Calamus rotang*), *Kutaja* (*Holarrhena pubescens*).

Gandhak Rasayan is broad spectrum Ayurvedic antibiotic, having anti viral, anti microbial, anti inflammatory properties & is blood purifier. It purifies *Uttarottar Mauns*, *Meda*, *Asthi*, *Majja Shukra dhatu* & nourishes body. *Sookshma triphala* is routinely used post operatively to prevent infection. Along with *Gandhak rasayan* it acts as best antibacterial *dravya*. *Gandhak*

rasayan may cause hepatotoxicity when used for longer period, due to inclusion of ingredient of Sulphur, though its toxicity is reduced when it is blended with medicated Ghrit (Ghee) as made in the preparation of Gandhak rasayan. Hence we used it for 15 days followed by a gap of 8 days & repeated it again with the gap. Tikta ghrit has special role in healing of infected wound; further it helps to balance *Pitta*. Triphala guggul is *Jantughna*/ anti bacterial, anti inflammatory, *Vatshamak* having *Shool-har* (analgesic) properties. Guduchi (*Tinospora cordifolia*) + Musta (*Cyperus rotundus*) + Gokshur (*Tribulus terrestris*) + Amalki (*Embllica officianalis*) + Pippali (*Piper longum*) have rejuvenating/Rasayan effect for faster healing, therefore they were used in combination. Guduchi has deepaniya effect, it was especially useful to strengthen heart circulation as the patient was having IHD. Patient had liquid stools; Kutajarishtha was given to her having Antidiarrhoeal properties which controlled the diarrhoea/ *Drav-mal*. Patient had stomatitis and increased salivation, for treating it we advised Gargles with Yastimadhu+Triphala quath twice daily and that was subsided.

It is wondered why surgery was preferred rather than conservatively treating hydatid cyst in liver. Hydatid cyst in liver is more amenable to conservative treatment. It is still not clear that even during surgery how a large cyst measuring 8.5 x 7.5 x 8.7 cm and another cyst of size 2.8 x 2.5 cm size was missed which was detected postoperatively on USG dated 27.9.2016 and question remains why these cysts were not removed during surgery. There is no mention about these cysts in post operative notes. It is likely that after few days of surgery, the bigger cyst might have been ruptured causing liver abscess.

Wound was washed with Hydrogen peroxide and Betadine postoperatively and thereafter; which is against the modern principles of wound washing AHCPR guidelines which discouraged use of Hydrogen peroxide and Betadine which are Cytotoxic to healthy cells and granulation tissue; it causes more harm than good and inhibits the proliferation of fibroblast activity causing impediment in wound healing. Therefore in such situations, Normal saline is increasingly preferred.^[11,12]

Patient had a pet dog at home for number of years. Dog is the known definitive host of hydatid disease; sexual cycle is completed in dog and eggs are passed through faeces; intermediate hosts are represented by series of mammals including man.^[13] Man gets infected by handling a dog. About 70% of hydatid cysts develop in to liver, trapped by Hepatic sinusoids which act as the first filter for ova.^[14] Thus it was not surprising that this patient developed hydatid cyst in the liver.

For the poor female patient it proved to be a disaster which extended her stay of hospitalization to nearly 6 months causing her great suffering. She being a senior

citizen and from low income group, all cost of treatment extended to her, was borne by the State Government causing them a great financial burden; but there is no cost measurable to agony and sufferings of patient, which was preventable. Now there are modern conservative techniques available like **PAIR (Percutaneous Aspiration Infusion of scolicial agents and Reaspiration)** which is equivalent to surgery with less peri-operative morbidity and shorter period of hospitalization.^[15] Had such technique was adopted, the need for surgery and its consequences could have been avoided.

As mentioned above the case was very much complicated and **not only healing of wound was a challenge but saving the life of patient from Septicaemia was a major challenge. Successful management by Ayurvedic line of treatment made it possible to achieve both the objectives.**

Follow up:- It is worth mentioning that till date there is no Keloid or hypertrophic scar developed which is commonly seen in Modern therapy; further, the scar has also reduced in size. (Fig.No.4 and 5).

CONCLUSION

This case study highlighted the strength of Ayurvedic treatment principles that could be applied to heal most of such types of infected wounds.

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REFERENCES

1. Non healing wound. MaineHealth. Available and accessed on: 05 Feb 2021. <https://www.mainehealth.org/Services/Wound-Care-Ostomy-Care/Non-Healing-wounds#:~:text=What%20is%20a%20non%2Dhealing,the%20loss%20of%20a%20limb>.
2. Non healing Surgical Wound. Main Line Health. Available and accessed on: 05 Feb 2021. <https://www.mainlinehealth.org/conditions-and-treatments/conditions/non-healing-surgical-wound>
3. Azoury SC, Farrow NE, Hu QL, Soares KC et al. Post operative abdominal wound infection-epidemiology and risk factors, identification and management. Dovepress, 2015; 2: 137-148. Available from: <https://www.dovepress.com/postoperative->

abdominalwound- infection-ndash-epidemiology-
risk-factor-peer-r

4. Mark Collier. Recognition and management of wound infections. *World Wide Wounds*. Jan 2004. Available and accessed on 18.1.2021; <http://www.worldwidewounds.com/2004/january/Collier/Management-of-Wound-infections.html>
5. L Bröte, J Gillquist, A Tärnvik. Wound infections in general surgery. Wound contamination, rates of infection and some consequences. *Acta Chir Scand*, 1976; 142(2): 99-106.
6. Carlos Manterola, Manuel Barroso, Manuel Vial, Luis Bustos, et al. Liver abscess of Hydatid origin: clinical features and results of aggressive treatment. *ANZ J Surg*, 2003 Apr; 73(4): 220-4. doi:10.1046/j.1445-2197.2003.02354.x
7. K. Rajgopal Shenoy and Anitha Shenoy. Acute Infections, Sinus Fistula and Surgical Site Infection. Chapter No.2 in *Manipal Manual of Surgery*. 4th Edition. CBS Publishers and Distributors Pvt. Ltd., 2014: 27-28.
8. Commentary by Late Dr. Garde Ganesh Krishna.'Sarth Vagbhat' Uttarsthan Chapter 25/15. *Chaukhamba Surbharati Prakashan, Varanasi-221001*. (2015): 429.
9. Commentary by Dr. Anantram Sharma on Sushruta Sanhita part II. Chapter 1 of Chikitsa sthan verse 133. *Chaukhamba Surbharati Prakashan, Varanasi-221001*; 2015: 172.
10. Sarita Gaikwad and Pradip Gaikwad: Effect of Ayurvedic treatment on trophic ulcers of Leprosy- A comparative clinical trial. *Aryavaidyan*, Feb-Apr. 2010; XXIII(3): 139-143.
11. K. Rajgopal Shenoy, Anitha Shenoy (Nileshwar). Differential diagnosis of Leg ulcer and Pressure sore. Chapter 6 in *Manipal Manual of Surgery*. 4th Edition. CBS Publishers and Distributors Pvt. Ltd. New Delhi. (2014): 67-74.
12. Wound cleansing. Available and accessed on 23.1.2021 on https://www.lvhn.org/sites/default/files/uploads/research_education/EmergencyMedicineMedStudents/WoundCleansing.pdf
13. Sundarlal, Adarsh, Pankaj. Hydatid disease in Chapter No. 12 'Epidemiology of Communicable Diseases and Related National Health Programmes', in *Textbook of Community Medicine*. 3rd Edition. CBS publishers & Distributors, New Delhi-110 002 (2011): 510-511.
14. Harsh Mohan. Hydatid disease (Echinococcosis) in Chapter No. 19 ' The Liver, Biliary Tract and Endocrine Pancreas in *Textbook of Pathology*. 7th Edition,. Jaypee Brothers Medical Publishers, New Delhi-110 002 (2015): 601.
15. A. Clinton White, Jr., Peter F. Weller. Cestode infections. Chapter no. 260 in *Harrison's Principles of Internal Medicine*, Vol-2. 19th edition. McGraw Hill Education, (2015): 1430-1435.