



Ayurvedic management of Extensive Post operative Infected wound- A case study

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ABSTRACT Healing of post operative wounds, diabetic ulcers, bedsores & other types of wounds is a major challenge in surgical practice. Many a times such wounds fail to heal despite use of all types of antibiotics. The microbes rapidly acquire resistance. In such circumstances there is a risk to the life of patient due to septicemia or gas gangrene. Here is a case study presented where-in Modern science expressed inability to heal such extensive infected wound & referred the case to Ayurved. The post operative wound healed completely by Ayurvedic line of treatment. This case study focuses on the strength of Ayurvedic treatment principles that could be applied to heal most of such infected wounds.

KEYWORDS : Ayurvedic, Post operative, Infected wound, management,

INTRODUCTION:- The 2002 survey report by the Nosocomial Infection National Surveillance Service (NINSS), indicated that the incidence of hospital acquired infection (HAI) related to surgical wounds is as high as 10%.^[1] However, the rate of wound infection in case of abdominal surgery may be much higher, with several prospective studies reporting an incidence of 15%–25% depending on the level of contamination.^[2] According to Centers for Disease Control and Prevention (CDC) these infections typically occur within 30 days of an operation at the site or part of the body where the surgery took place.^[3] Necrotizing deep soft tissue infections often require extensive surgical debridement, multiple reoperations, and may even be life-threatening.^[2] These infections complicate illness, cause anxiety, increase the hospitalization period, increase patient discomfort and may lead to death^[4].

CASE STUDY:- This 22 yr old 2nd gravida undergone LSCS in Sassoon hospital, Pune due to breech presentation on 27.11.2014. During post operative period, she c/o severe pain in abdomen. The USG abdomen done on 1.12.2014 showed following remarks- "extensive subcutaneous oedema noted in lower abdomen. However, no focal collection was noted. No Hepatosplenomegaly." She was discharged on 4.12.2014 along with her male baby having birth weight of 3 Kg. After 4 days at home she developed fever with papular eruption with ecchymosis over abdomen around umbilicus. She was again admitted in Gynaecology & Obstetric unit on 10.12.2014. She was referred to Dermatologist, for expert advice on the same day, who advised to use higher antibiotics. USG abdomen report on 11.12.2014 revealed "1. Skin subcutaneous & underlying muscles appear thickened and grossly oedematous involving almost entire abdominal wall except in hepatic region. Findings likely s/o infective etiology of abdominal wall involving musculature. No obvious tappable collection noted. 2. Hepatosplenomegaly". She developed ulcerated wound over abdomen, went on increasing in size. She developed maggots in the wound with pus formation. She was transferred to Surgery Department, Sassoon hospital on 12.12.2014 for further management. Debridement of the wound was carried out in surgical O.T. under Spinal anesthesia for 7 times within a span of < 20 days. Every time of debridement she was transfused 1-2 units of blood. She was referred to Plastic surgeon on 29.12.2014 who asked to refer the case when pink granulation tissue develops and Hb > 10 gm%, (that was 8.5 gm at that time). She was not responding to most of the antibiotics. Her wound had become fulminant. Finally this hopeless case was referred to Ayurvedic research ward for the management of the wound on 2nd Jan 2015.

On admission the abdominal wound size was of 20 cm x 15 cm x 2-3 cm deep. It was with pale granulation tissue with seropurulent discharge. The wound healed completely on active Ayurvedic management in over 4 months. The wound healed completely within 5 months without need for plastic surgery with minimal scar formation. Patient was discharged on 25.5.2015. The details of treatment are mentioned in discussion.



Fig. No. 1: Infected wound on admission to Ayu. ward



Fig. No.2: Healing on 17th day of admission



Fig. No.3: Healing of wound on 25th day



Fig. No.4: Healing of wound on 49th day



Fig. No. 5: Healing of wound on 88th day



Fig. No. 6 Complete healing of wound on 144th day

Table No.1: Chronology of Treatment Protocol

Type of treatment	From-- to	Intervention
Local	2.1.2015 to 10.1.2015	Decoction made up of one part each of barks of Vat (Ficus indicus), Udumbar (Ficus racemosa), Ashwath (Ficus religiosa) and Daru haridra (Berberis aristata) quath to wash wound.
Local	10.1.2015 to 24.5.2015	Decoction made up of one part each of barks of Vat (Ficus indicus), Udumbar (Ficus racemosa), Ashwath (Ficus religiosa) to wash wound.
	2.1.2015 to 10.1.2015	Applied Vran shodhan oil over wound (Sandu)

	11.1.2015 to 24.5.2015	Applied Vran ropan (Ayurved Rasashala) /Jatyadi oil (Baidyanath, Nagpur) over wound
Systemic treatment	2.1. 2015 to 16.1.2015	20 ml decoction made up of barks of Vat (Ficus indicus), Udumbar (Ficus racemosa), Ashwath (Ficus religiosa) & Daru Haridra (Berberis aristata) for 15 days
	17.1.2015 to 24.5.2015	15 ml (1:16 water boiled till 1:4 remained) decoction made up of barks of Vat (Ficus indicus), Udumbar (Ficus racemosa), Ashwath (Ficus religiosa) orally.
	2.1.2015 to 16.1.2015, 25.1.2015 to 8.2.2015, 16.2.2015 to 3.3.2015	Tab Gandhak Rasayan 500 mg 2 BD (Sandu) -----do----- -----do-----
	2.1.2015 to 2.3.2015	Gokshuradi guggul 500 mg 2 BD (Sandu)
	2.1.2015 to 2.4.2015	Tab Sukshma Triphala 500 mg 2 BD (Sandu)
	2.1.2015 to 2.2.2015	Triphala guggul 250 mg BD (Sandu)
	2.1.2015 to 2.4.2015	Amrutadi guggul 500 mg 2 BD (Sandu)
	2.1.2015 to 6.1.2015	Syrup Amrutarishta 3 TSF BD (Sandu) with warm water
	2.1.2015 to 24.5.2015	Sitopaladi choorna ½ TSF+ Avipatkar choorna½ TSF (Ayurved Rasa -shala)
	2.1.2015 to 24.5.2015	Tiktaghrit 1 TSF on empty stomach everyday (Arya vaidya sala)
	2.1.2015 to 24.5.2015	Triphala choorna 1 TSF at bed time with warm water (Ayurved Rasa -shala)
Matra basti	20.1.2015 to 7.3.2015	Narayan oil 40 ml (Sandu) after meal for 45 days

Vran karma/ Local treatment:-The wound was washed with the decoction made up of barks of Vat (Ficus indicus), Udumbar (Ficus racemosa), Ashwath (Ficus religiosa) daily. The barks of these plants contain anti inflammatory, anti bacterial & healing properties due to the presence of Tannin, Silica & phosphoric acid. Daru haridra (*Berberis aristata*) quath was also used initially first 7 days for washing the wound. After washing the wound by aseptic technique, Vran- shodhan oil was applied over it. Healthy granulation tissue was formed within one week. Then instead of Vran shodhan oil, Jatyadi/ Vran ropan oil was applied. Washing of the wound was continued with decoction made up of barks of the three valkalas as mentioned above.

Systemic treatment:-This patient was given orally following drugs:-

- Decoction made up of barks of 3 valkalas namely Vat (*Ficus indicus*), Udumbar (*Ficus racemosa*), Ashwath (*Ficus religiosa*) & Daru Haridra (*Berberis aristata*) 20 ml for 15 days owing to its anti inflammatory, anti bacterial & healing properties. Decoction of 3 Valkalas -15 ml daily was continued till Patient was discharged.
- Tab Gandhak Rasayan 500 mg 2 BD for 15 days with 8 days gap, repeated twice.
- Tab Sukshma Triphala 500 mg 2 BD for 3 months
- Gokshuradi guggul 500 mg 2 BD for 2 months
- Triphala guggul 250 mg BD for 1 month
- Amrutadi guggul 500 mg 2 BD for 3 months
- Tikta ghrit 1 TSF on empty stomach in early morning daily till discharged.
- Syrup Amrutarishta 2 TSF BD, SOS when fever appeared.
- Sitopaladi choorna ½ TSF + Avipatkar choorna½ TSF was given daily till discharged.
- Triphala choorna 250 mg 1 TSF along with warm water at bed time till discharged
- Matra basti by Narayan oil 40 ml (after meal) was administered for 45 days.
- Overnight soaked 2 Dried dates, baked bengal gram (Chana) 15-20 gm & 1 boiled egg as a source of protein, was advised.

DISCUSSION:-It is pertaining to note that the patient was c/o severe pain in abdomen after caesarian section & USG abdomen done on 1.12.2014 also revealed extensive subcutaneous oedema noted in

lower abdomen. But it seemed that due cognizance was not taken by Gyn & Obst. department & case was discharged on 4.12.2014. The infection flared up after 3-4 days & patient reported to Gyn & Obst. department on 10.12.2014. The USG report of 11.12.2014 substantiated '1. Skin subcutaneous & underlying muscles appeared thickened and grossly oedematous involving almost entire abdominal wall except in hepatic region.2. Hepatosplenomegaly. Findings likely suggest infective etiology of abdominal wall involving musculature.' There was hepatosplenomegaly noted which wasn't there earlier, that indicate systemic infective origin which was preventable. Case was transferred to Surgery department on 12.12.2014, where debridement of wound was done under spinal anaesthesia 7 times within less than 20 days. The patient was referred to Ayurved Department where she was actively managed avoiding further complications like septicemia-endangering life.

Vagbhat mentioned that Vran on abdomen & Umbilical (*Nabhi*) were *Kastasadhya*.^[5] (Sa.Vag. Utt. Sth. 25/15). Modern science also believes that abdominal surgeries are vulnerable for getting infected. Granthkaras have mentioned description of Panchvalkal namely Vata (*Ficus bengalensis*), Udumbar (*Ficus racemosa*), Ashwath (*Ficus religiosa*), Pluksh (*Ficus virace*), Pippalbhed /Hibinuxvs (*Thepasia populnea*). The bark of these valkalas & skin of human being has much similarity as per Samane samane vriddhesham principles of Ayurved. Further, these trees are *Kshiri vriksha*. *Kashay rasatmak* hence it it promotes healing: have *Deerghjeevi* (long life) therefore healing is permanent/ non recurrent. Their properties are *Grahi*, *Sheetal*, *Vran*, *Shoth*, *Visarp nashak*. Out of these Panchvalkal, first 3 are easily available. The author had successfully used Quath made from the bark of Vat (*Ficus indicus/ bengalensis*), Udumbar (*Ficus racemosa*), Ashwath (*Ficus religiosa*) for treating non healing/ trophic ulcers in Leprosy patients.^[6] On admission wound was highly infected. Therefore Daru Haridra (*Berberis aristata*) was used along with decoction of 3 Valkalas to wash the wound. Daru Haridra is known to be Rakta prasadak, Rakta sthambhak, anti purulent dravya. Decoction-20 ml, made from 3 valkalas + Daru Haridra was given orally for first 15 days. Daru Haridra improves function of Liver & Spleen, which corrected Hepatosplenomegaly. It was followed by decoction made of 3 Valkalas 15 ml daily till Patient was discharged home. The wound was dressed with Vran shodhan oil which contained Haridra (*Curcuma longa*), Manjista (*Rubia cordifolia*), Nimba (*Azadirachta indica*), Madhuyasto (*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*), Ashwath (*Ficus religiosa*), Plaksha (*Ficus microcarpa*). Karvira (*Nerium oleander*), Kadamba (*Neolamarekia cadamba*), Arka (*Calotropis gigantea*), Veta (*Calamus rotang*), Kutaja (*Holarthena pubescens*).

Role of Matra basti:- Pt. had undergone caesarian section, that created *Vata prakop*. Basti is half chikitsa & for vat shaman, tail is the best remedy. PS Varier contemplated that Matra basti is resorted for appeasing excited Vata & for regularizing bowel movements.^[7] Narayan tail has anti-inflammatory & anti ulcerogenic properties and when administered through Matra basti it helped to nourish Mamsa dhatu for its healing.

Gandhak Rasayan is broad spectrum Ayurvedic antibiotic, anti viral, anti microbial, anti inflammatory & is blood purifier. It purifies Uttarottar Mauns, Meda, Asthi, Majja Shukra dhatu & nourishes body. Sookshma triphala is specially used post operatively routinely to prevent infection. Along with Gandhak rasayan it acts as best antibacterial dravya. Gandhak rasayan has known hepatotoxicity, therefore it cannot be given for longer period. Hence we used it for 15 days followed by a gap of 8 days & repeated it twice with the gap. Tikta ghrit has special role in healing of infected wound; further it helps to balance Pitta. Triphala guggul is *Jantughnal* anti bacterial, anti inflammatory, *Vatshamak* having *Shool-har*(analgesic) properties.

As the size of the wound was very large & deep, it was really a challenge to heal. When the 10% healing remained, the patient asked for discharge but she was convinced to stay till the wound was completely healed. Meanwhile plastic surgery department requested to refer the patient for skin grafting but patient did not agree for that &

preferred to stay back till the wound was completely healed as per its natural course. The scar was minimal in view of the size of the wound. Finally patient was discharged on 25.5.2015 with complete healing of wound. Thus such a challenging case was successfully managed by Ayurvedic line of treatment.

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.

Advantages of Ayurvedic treatment of infected wounds:-

- I. Use of Antibiotics no longer required; that will reduce the menace of bacterial resistance.
- II. No need to carry out swab culture for bacterial sensitivity, saving the cost of investigations & time.
- III. No need to use Iodine or Silver compounds for wound dressing which is commonly used in modern surgical practice.
- IV. Risk of Keloid is minimized.
- V. Saves cost & prevent side effects of using Antibiotics.

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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