

Integrative management of Post-operative Osteomyelitis wound in diabetes mellitus patient: A Case Report¹ Foram Joshi, ² Tukaram Sambhaji Dudhamal

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Abstract

Chronic osteomyelitis with diabetes is notorious condition for traumatologists and diabetologist to manage it successfully. Higher antibiotics and careful antiseptic dressing are the only options documented till the date for correction of such conditions. In this case report a case of post-operative osteomyelitis was and it's satisfactory managed through integrative approach of Ayurveda. A 70 years female patient of diabetes mellitus developed post-operative osteomyelitis non healing ulcer and reported to OPD with pain and restricted movement of hand since one and half month. . The case was managed with Triphala Kwath for wound cleansing, dressing with *Apamarga Kshara Taila Varti* (Seton Dressing) locally along with oral hypoglycaemic treatment and antibiotics on and off. Patient was also advised to follow Ayurvedic diet regimen during complete course of treatment. Case was resolved in 63 days duration with complete wound healing, controlled blood sugar level and painless limb movements.

Key Words: *Apamarga Kshara Taila*, Chronic osteomyelitis, Debridement, Diabetic wound, Vrana, wound

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Introduction:

In Ayurveda Osteomyelitis can be correlated with Asthi vidradhi which is said to be Asadhya (Incurable) [1]. For the management of wounds 60 measures were mentioned by Sushruta [2]. In this case report the necessary measures (*Shodhana, Ropana and Ahara Upakrama*) were applied to manage the case. *Triphala Kwatha, Apamarga Kshara Taila* and other adjuvant medicaments were applied to manage the case.

Diabetes has been being correlated with *Madhumeha* in *Ayurveda* and Non healing Ulcers can be considered as *Dushtavrana* here. *Acharya Sushruta* has mentioned poor prognostic values of *Dushtavrana* which are under influence of *Madhumeha*. [3] Endogenous ulcers are considered as difficult to cure in *Ayurveda*. [4]

Post traumatic bony injury and their surgical management are the source origin for post operative bone infections and osteomyelitis. Injury with higher intensity to the soft tissues and bones requires more aggressive treatment to open and close fractures. Diabetes mellitus acts as a media for infective organism to float in haversian system (a circulatory pathway for skeletal system and long bones especially). Such case requires first cessation of infected blood to the uniting bone. Also removal of collected waste is required along with cessation in relying micro-organisms.

Case Report:

A 70 years female known case of Type 2 Diabetes Mellitus since last 3 years presented to OPD with complain of non

healing ulcer in left lower arm posterior surface since 3 months along with localised pain and seropurulent discharge. [Fig-1]. Patient revealed history of sharp trauma and fracture of lower part of left humerus in a road traffic accident before 6 months. For that she has undergone for surgical management by internal fixation of surgical implant (stainless steel plate implantation) before 6 months and immobilization with sling bandage and other supportive management. Patient also revealed history of irregular bowel habit, decreased appetite and heaviness of body with same duration of time.

On clinical examination there were two different openings in the skin of lower 1/3rd of posterior part of arm along with seropurulent discharge. Inflamed wound margin and undermined edges were observed along with deep seated muscular base and infected wound floor due to slough. There was foul odour from wound and tenderness (++) was also noted in peripheral wound margin. Initial wound measurement was noted: 2.76 cmx0.92 cmx5.67 cm. (14.39cm³)

On investigation, Total Leucocytes count was 6200/cmm. DLC was P/L/E/M/B was 63/ 30/5/2/-. FBS and PPBS were noted 144 and 260 mg/dl respectively. Urine and serology reports were reported negative. Her Hb% was 10.4%, ESR was 48 mm/hr and BT CT were reported within normal limits. Radiogram before treatment revealed presence of plate in situ and soft tissue inflammation shadow. Swab culture report on day first showed presence of *Pseudomonas aeruginosa* and *E.coli* in

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wound exudates. Same report on day 6th revealed presence of E.coli and absence of Pseudomonas aeruginosa in wound exudates. Serology reports for S. HIV, S. HBsAg and S. VDRL were reported negative.

Case Management:

Case was managed with *Triphala Kwatha* for wound cleansing flush by syringe once per day prior to wound dressing. *Apamarga Kshara Taila Varti* dressing in both the open wound up to the deeper most extension of wound sinus. In oral medication, *Pippali Churna* 3gm with Honey empty stomach twice a day for initial 30 days and *Haritaki Churna* 6gm at bed time with luke warm water for 60 days, *Sanjivani Vati* 1 tab (125 mg each) in 1 four times a day for initial 30 days were prescribed.

Conventional oral medications, Cap. lincomycin 500mg twice a day and Cap.

linozolid 600mg twice a day were continued for initial 11 days. Antidiabetic management of the patient was kept continue as it was with Cap. Metformine 500mg twice a day. Patient was advised to take *Mudga Ahara* (Green Gram food varieties) and *Shaali* (Rice) during complete course of treatment. She was allowed for *Dadima* (pomegranate), *Draksha* (Grapes) in fruits.

During complete course of treatment, patient was advised to avoid day time sleep, late night sleeps and skipping of meals. All the bakery products including milk and its varieties, flour products and fermented food items were restricted. Patient was advised to avoid long time standing, sitting, continuous walking, sexual intercourse, excessive anger, fear, tension, alcohol and indigestion with a view to follow regimen described by Acharya Sushruta.^[5]



Figure 1: Before Treatment: Non healing osteomyelitic ulcer (Day 1)



Figure 2: After Treatment: Complete healed ulcer (Day 63)

Results and Discussion:

Wound healing in this patient was achieved within 63 days [Fig.2]. Unit healing time for this patient was measured 4.378 days/mm³. Painful and restricted movements converted to pain less movements with reduction of tissue inflammation. Patient started feeling appetite and bowel movement were also regularized within 7 days of treatment. Infected exudates discharge from wound was subsided in 7 days just after starting the treatment. With minor physical exercise, patient initiated limb and joint movement. Pippali Churna (Powder of fruit of *Piper longum* linn.) along with Honey posses anti-oxidant properties [6], [7]. That may have helped in tissue rejuvenation and promoted in physiological repair of cellular injury. *Pachana* properties may have augmented functions of Jatharagni and *Dhatvagni* and may have corrected Rasadhatu production and its proper function.

Anuloman effect of *Haritaki* (*Terminalia chebula* Linn.) releases accumulated mala *Sanchaya* from *Shakha* and *Koshtha*. Antioxidant properties of tannins reduce oxidative tissue mechanism in vascular channels by reducing concentration of deoxygenated blood in vessels and may have

augmented oxygenated blood flow towards the wound^[8].

Mudga Yusha and *Shaali* are the *Pathya Kalpanas* which improve qualities of *Rasa Dhatu* function by reducing load of *Kleda* generated by irregular dietary habits and *Pishtanna Sevana*. Thus it improves *Rasa Rakta Samvahana* (blood circulation) which augments oxygenated blood flow to the wound area.

Sushrutacharya has narrated applicability of *Kshara* for wound debridement in the management of *Dushtavrana* [9]. *Apamarga Kshara Taila* prepared by using *Kshara* as *Kalka Dravya* and *Kshara Jala* are having favourable physico-chemical parameters including pH (7.5), least acid values (0.3559), high saponification value (226.84)^[10]. Application of alkaline preparation like *Apamarga Kshara Taila* has provided the autolytic debridement of wound.

Conclusion:

Case report concluded that with the help of multifactorial treatment the case was resolved in 63 days duration with complete osteomyelitic wound healing, controlled blood sugar level and painless limb movements.

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