

Management of Fourniers Gangrene with *Chedana* and *Sandhana Karma*: A Case Study

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Abstract

Fournier's Gangrene is one of the rare, but life-threatening disease. It is a fulminant form of necrotizing fasciitis of the perineal, genital or perianal regions with infective etiology caused by a mixture of aerobic and anaerobic microorganisms. In the present paper the effect of *Chedana Karma* and *Sandhana Karma* in a case of Fournier's gangrene is documented. The study was conducted on a 42 years old male patient who was admitted to Dhanwantri Ayurved Medical College and Hospital, Udgir. In Shalya Tantra IPD, with the complaints of pain and swelling around scrotum, pain in lower abdomen, fever and pus discharge from scrotum for 12 days. The condition was diagnosed as *Kotha* (Fournier's gangrene). *Chedana Karma* (Early and exhaustive debridement) of the scrotal gangrenous tissues was done followed by *Shodhana karma* (Daily cleaning and dressing) with *Panchvalkala* and *Triphala kwatha*. Scrotoplasty was done after 3 weeks of *Shodhana karma* when *Shudha Vrana* features were found. Oral medications *Panchatiktaghrita guggulu*, *Gandhaka rasayana* and *Amlaki churna* were given. Significant improvement was observed in the patient in subjective parameters. The patient resumed his routine work and there was no discomfort, side effect or complication or recurrence after treatment and in follow up period.

Keywords: Fournier's gangrene; *Kotha*; *Chhedana*; *Shodhana*; *Sandhana karma*

Introduction

Fournier's gangrene is one of the rare but life-threatening diseases [1,2]. It is a fulminant form of infective necrotizing fasciitis of the perineal, genital or perianal regions with occasional cranial extension to the abdominal wall which commonly affects men but can also occur in women and children. It is characterized thrombotic occlusion of small subcutaneous vessels and development of gangrene. It is a true urological emergency due to the high mortality rate but fortunately the condition is rare. As Fournier's gangrene is idiopathic gangrene of the scrotum, it can be correlated with *Kotha* described in *Sushruta Samhita*.

कुथ्यतेपुतत्विंगम्यतेअनेन। कुथ पुतत्वि करणे घञ्॥ [3] कोथः पुतीभावः॥ [4]

Means death and pus formation or gangrenous changes of tissues is called *kotha*. Synonyms of the disease are Periurethral phlegmon, Streptococcal scrotal gangrene, Synergistic necrotizing cellulitis. It is a polymicrobial synergistic infection caused the aerobic, anaerobic, gram-positive and negative bacteria, yeast and sometimes mycobacteria. Pathogens involved are *Coliforms*, *Klebsiella*, *Streptococci*, *Staphylococci*, *Clostridia*, *Bacteroids*, and *Corynebacteria*. On average, at least three organisms are cultured from each diagnosed patient. The disease has a fulminant spread from scrotum up to the abdomen and thorax. *Chedana Karma* has been described in *Sushruta Samhita* for *Kotha*.

छेद्याभग्नदराग्रंथीः... सनायुमांससरिकोथो... अधमिंसकः॥ [5]
सनायुकोथादधितथाच्छेदनं प्राप्तमुच्यते॥ [6]

The spread of infection is along the facial planes and is usually limited by the attachment of the Colles' fascia in the perineum. Infection can spread to involve the scrotum, penis and can spread up the anterior abdominal wall, up to the clavicle [7]. The testes are usually spared as their blood supply originates intra-abdominally. The involvement of the testis suggests retroperitoneal origin or spread of infection [8]. After debridement reconstruction techniques such as Primary closure of the skin, local skin flap coverage, split-thickness skin grafts, muscular flaps, which are used to fill a cavity, should be done.

Incidence

The true incidence of the disease is unknown. However, the incidence appears to be rising. In a retrospective study of cases reported in the English literature from 1950-1999, 1726 cases were documented. A continuing study on Fournier's gangrene, yet to be published, revealed 1571 cases from 2000 to 2007.

Case Report

A 42-year-old male patient presented to Dhanwantri Ayurved Medical College and Hospital, Udgir. In Shalya Tantra OPD, with the complaints of pain and swelling around scrotum, pain in lower abdomen and fever for 12 days with H/O pus discharge from scrotum 7 days back. There was no H/O any trauma/aspiration/anorexia/weight loss. The patient was not a k/c/o DM/HTN/TB. There was no H/O any surgical intervention. The patient had consulted regional private clinic and antibiotic injections were administered for 3 days (According to patient, no records were available). The patient was thoroughly examined and vitals were taken. On local examination, inflamed scrotum with necrotic patches of tissue and slough covering almost whole scrotum was found. Local temperature was raised, tender scrotum along with indurate skin and subcutaneous tissue of scrotum. Tenderness was also present in the groin with palpable B/L inguinal lymph nodes and crepitation were found in the scrotum. The condition was diagnosed as *Kotha* (Fournier's gangrene) and the patient was admitted in male *Shalya Tantra* ward. The patient was fully conscious, well oriented to

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Table I: Complete blood count.

Description	Observation	Normal
HGB	11.2 g/dl	12-18 g/dl
HCT	41.7	34-38
RBC	440000/ul	35-5300000/ul
RDW	10.6	11.6-14.5
PLT	210000/ul	120-380000/ul
WBC	18600/u	4-11000/u
MO	11.4	0-9

time, place and person. Blood pressure-100/70 mmHg, Pulse rate-82/Min. No abnormality was detected in CVS and Respiratory systems.

Investigations

Routine investigations viz. Hb g% TLC, DLC, ESR, RBS, HIV, HBsAg, HCV, VDRL, LFT, RFT, ECG CXR-PA View, Urine-R/M were done. All investigations were within normal limits (Table I).

Treatment plan

Chedana Karma (Surgical Debridement under S.A) was planned.

Procedure

Treatment of the patient was done in a step by step procedures. As *Chedana Karma* is indicated for *Kotha*, in first step *Chedana Karma* (Early and exhaustive debridement) of the scrotal gangrenous tissues was performed under S.A after tetanus prophylaxis. All the scrotal skin along with dartos muscles were sloughed off and removed, testicular coverings also removed leaving both the testes exposed [9]. Cleaning was done with hydrogen peroxide, normal saline, and metronidazole solution. The excised tissues were sent for histopathological examination and culture and sensitivity test. The histopathological examination confirmed the tissue to be of Fournier's gangrene. Antibiotics were started as per the culture and sensitivity report along with analgesics and anti-inflammatory drugs.

पंचमंशोधनं कुर्यात् षष्ठं रोपणमभ्यस्यते॥ [10]

Before wound healing the wound should be clean (*Shudha Vrana*). *Shodhana Karma* (Daily antiseptic dressing) with *Panchvalkala kwatha*, *Trifla Kwatha* and normal saline and packing with *Jatyadi Taila* daily was continued for 3 weeks.

सप्तमं वैकृतापहम् [11] वैकृतापहमतिस्वर्णकरणरोमसंजननादि [12]

Means return of wound to normal skin texture. After healing of the wound, if epithelialization is difficult to achieve reconstruction is done. In 2nd step *Sandhana Karma* (Reconstruction-by Scrotoplasty) was done after 3 weeks of *Shodhana karma* when *shudha vrana* features were observed [13].

त्रभिदिदोषैरनाक्रान्तः शवौष्ठः पडिकीसमः। अवेदनोनरिस्रावोव्रणः शुध्द इहोच्यते॥ [14]

The wound which is free from the symptoms of vitiated dosha, has bluish margins, granulation tissue at the level of the skin surface and has no pain or discharge is said to be clean one [14]. For scrotoplasty, testes were separated from adhesion to the adjacent structures by undermining method. The skin on both sides was approximated and primary closure was done. Daily ASD was performed. Oral medications *Panchatikta Ghritha Guggulu* 2 tab thrice daily, *Gandhaka rasayana* 2 tab, twice daily, *Amlaki churana* 3 g twice daily, for one month were given after 2 weeks of 1st step procedure.

Follow Up

After treatment period of 6 weeks patient was discharged and

regular follow up was advised. Follow up was done weekly for 1 month. Improvement was noticed on each visit to the hospital and any side effects or fresh complaints were asked. No fresh complaints or side effects were observed. There was a day to day improvement in the condition of the operated site and general condition of the patient was noticed on each visit.

Results

Significant improvement was observed in the patient in subjective parameters-Pain, Discharge, and fever. The patient returned to his routine work and there was no discomfort after treatment. There was no recurrence of symptoms in follow up period. No any side effect or complication was complained during treatment and follow up period.

Discussion

Fournier's gangrene is a fulminant disease. It should be treated as early as possible. Step by step treatment process helped in the recovery of the patient. First *Chedana karma* caused the removal of necrotic tissues and slough in the scrotal tissue which prevented the spread of the disease upwards. After extensive debridement the role of *Shodhana* is important. After proper *Shodhana*, ropana can be achieved. For *Shodhana karma*, *Panchvalkala kwatha* and *Trifhala kwatha* was taken. *Panchavalkala kwatha* phytochemically dominant in phenolic group components like tannins, flavonoids which are mainly responsible for its excellent activities antiseptic, anti-inflammatory, immunomodulatory, antioxidant, antibacterial, antimicrobial and wound purifying as well as healing, astringent properties [15].

Panchavalkala has activities like *Vranaprakshalana*, *Varnropana*, *Shothahara*, *Upadanshahara* and *Visarpahara* [16] and *Triphala* possess anti-inflammatory, analgesic, anti-arthritis, hypoglycemic and anti-aging properties [17]. *Jatyadi taila* was used for wound dressing which has potent wound healing property, which helped in quick wound healing [18]. *Panchatiktaghritha guggulu* [19] possesses antibiotic property preventing the secondary infection. *Amlaki churana* [20] boosts immunity and restores body's vitality, acted as an immune modulator and antioxidant which exerted effect on wound healing causing better wound healing. *Rasayana* therapy which has the property of boosting the immune system will help much more in controlling the predisposing factor and helps in treatment and eradication of infections. For this purpose *Rasayana* drugs having *kushthagna*, *kandughnsa*, *krimighna*, and *vishagna guna* can work as *Twachya Rasayana*, hence *Gandhaka rasayana* was used.

Conclusion

Though Fournier's gangrene is a life-threatening condition, prompt diagnosis and extensive debridement along with oral Ayurvedic formulations can cure the condition with comparatively better outcomes. The use of oral ayurvedic formulations after surgical debridement helped in early granulation tissue and epithelialization. It did not necessitate the use of skin grafting, which is usually needed in the treatment of Fournier's gangrene. The treatment principle described in *Sushruta Samhita* proved to be very scientific. Stepwise procedures consisting of *Chedana* and *Sandhana* along with supportive care with *Gandhak rasayana* and *Panchatiktaghritha guggulu*, *Amlaki churana* and local use of medicated oil (*Jatyadi taila*) is very much useful in the management of Fournier's gangrene. Proactive management of the diabetic and immune-suppressed patients with perineal infections is of extreme importance to prevent the development of the condition in the first instance as this condition in the presence of such co-morbidities is associated with high mortality.

Conflict of Interest

We declare that there is no conflict of interest regarding the publication of this paper.

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