INTEGRATED APPROACH FOR THE MANAGEMENT OF FOURNIER'S GANGRENE (KOTHA) - A CASE REPORT

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Abstract:

Fournier's gangrene is a rare but life threatening surgical emergency seen all over the world. It is defined as a poly microbial necrotizing fasciitis of the perineal, perianal or genital area. With the newer advancement of surgical techniques and critical care medicine the mortality, morbidity of this disease has come down significantly over a period of time.

This case report discusses the successful management with integrated approach for the management of fournier's gangrene with Ayurveda and allopathic system of medicine.

A case of 45 year-old male patient reported to the Sri Dharmasthala Manjunatheswara College of Ayurveda and Hospital, Hassan with complaints of painful swelling of the scrotum since 3 days with past history of minor injury over the scrotum 6 days back for which he had not taken any treatment. The condition was diagnosed as Kotha (Fournier's gangrene).

Chedana Karma (early and aggressive surgical debridement) of the scrotal gangrenous tissues followed by Shodhana Karma (daily cleaning and dressing) with Panchvalkala Kwatha and application of Jatyadi Taila for Ropana Karma (wound healing) and on the basis of pus culture and sensitivity broad-spectrum antibiotic coverage was done.

Patient belongs from poor family and was not affordable for long time hospitalization and reconstructive surgery. The reason made to think for integrated approach.

The use of Ayurvedic formulations after surgical debridement helped in early granulation, epithelialization of tissue and wound healed without reconstructive surgery. Patient resumed his routine work and there was no discomfort, side effect or complication or recurrence after treatment and in follow up period.

***Index Terms*:- Fournier's gangrene, Kotha, Chedana, Shodhana, Ropana.**

INTRODUCTION:

Fournier's gangrene is a fulminant form of infective necrotizing fasciitis of the perineal, genital or perianal regions, which commonly affects men but can also occur in women and children.[1] It is a true urological emergency due to the high mortality rate but fortunately the condition is rare[2]. Fournier's gangrene is named eponymously credited to the Parisian venerologist Jean-Alfred Fournier, who described it as a fulminant gangrene of the penis and scrotum in young men.[3] Baurienne in 1764 and Avicenna in 1877 had described the same disease earlier.[4] Since years, many terms have been used to describe this clinical condition including idiopathic gangrene of the Scrotum, Periurethral Phelgmon, Streptococcal Scrotal Gangrene, Phagedena, and Synergistic Necrotising Cellulitis. As Fourniers gangrene is an idiopathic gangrene of the scrotum it can be correlated with *Kotha* described in *Sushruta Samhita*.[5] Kotha means death and pus formation or gangrenous changes of tissues. Cultures from the wounds commonly show polymicrobial infections by aerobes and anaerobes, which include Coliforms, Klebsiella, Streptococci, Staphylococci, Clostridia, Bacteroids, and Corynbacteria. On an average, at least three organisms are cultured from each diagnosed patient.[6] Most of these are normal commensals in the perineum and genitalia, which because of the impaired host cellular immunity, become virulent and act synergistically to invade tissue and cause extensive damage.[7] The disease has a fulminant spread from scrotum up to the pelvis, abdomen and thorax. *Chedana Karma* has been described in *Sushruta Samhita* for *Kotha.*

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[8]. The testis are usually spared as their blood supply originates intra-abdominally.

INCIDENCE:[9]

The overall incidence rate was 1.6 Fournier's gangrene cases per 100,000 males per year. Fournier's gangrene was rare in pediatric patients but the incidence increased with increasing age. The incidence peaked and remained steady after age 50 years at 3.3 cases per 100,000 males, reported till Mar 14, 2009.

CASE REPORT:

45 year-old male patient reported to the Dept. Of Shalya Tantra with complaints of painful swelling of the scrotum since 3 days with past history of minor injury over the scrotum 6 days back, for which he had not taken any treatment. No history of diabetes mellitus. Patient was alcoholic since 20 years.

On local examination revealed that his scrotum was grossly oedematous with multiple discharging gangrenous patches all over. Scrotum was tender with palpable crepitations. Local temperature was raised, tender scrotum with induration of skin & subcutaneous tissue of scrotum. Tenderness was also present in the groin with palpable B/L inguinal lymph nodes. Patient was thoroughly examined and vitals were recorded. Patient was fully conscious, well oriented to time, place & person. B.P: 110/70 mmHg, P.R- 82/min. No abnormality was detected in cardiovascuar & respiratory systems. The features were suggestive Kotha (Fournier's gangrene).

INVESTIGATIONS:

Routine investigations viz. Hb% 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 except rise in TLC (14000 Cells/CMM).

TREATMENT PLAN:

Chedana Karma[10,11] (Surgical Debridement under Spinal Anaesthesia) was planned.

Procedure: Treatment of the patient was done in step by step procedures. As *Chedana Karma* is indicated for *Kotha*, in first step *Chedana Karma* (Early and extensive debridement) of the scrotal gangrenous tissues was performed under Spinal Anaesthesia after tetanus prophylaxis. All the scrotal skin along with dartos muscles were sloughed off and removed, leaving the both the testis exposed. Cleaning was done with hydrogen peroxide & normal saline. The excised tissues were sent for histopathological examination and culture & sensitivity test. The histopathological examination confirmed the tissue to be of Fournier's gangrene. Antibiotics were started as per culture & sensitivity report along with analgesics and anti-inflammatory drugs.

Shodhana Karma[12] (Daily dressing) with *Panchvalkala Kwatha*[13] and packing with *Jatyadi Taila*[14] daily in IPD basis for 21 days and was discharged as healthy granulations had appeared with proper Shuddha Vrana Lakshana.[15] Patient was advised for proper follow up and patient had come to OPD for regular follow up till 63rd day (6th follow up) and wound was completely healed.

Oral medications- *Panchatikta Guggulu Ghrita*[16] 2 tsf twice daily, *Gandhaka Rasayana*[17] 2 tab. twice daily, *Amalaki churna*[18] 3g twice daily for one month.

Panchvalkala Kwatha Prakshalana and application of Jatyadi Taila twice daily and regular follow up was advised once in a week for 2 months. 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 day to day improvement in the condition of the operated site and general condition of the patient was noticed on each visit.

RESULT:

Significant improvement was observed in the patient in subjective parameters- Pain, discharge & fever. 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:

As per the severity of the disease Fournier's gangrene, it needs to be treated as early as possible. Step by step treatment process helped in the recovery of the patient. First, *Chedana Karma* followed by *Shodhana* is important. After proper *Shodhana*, *Ropana* was achieved. For *Shodhana Karma Panchvalkala Kwatha* was taken. *Panchavalkala Kwatha* phytochemically dominant in phenolic group components like tannins, flavonoids which are mainly responsible for its excellent activities like antiseptic, anti-inflammatory, immunomodulatory, antioxidant, antibacterial, antimicrobial and wound purifying as well as healing, astringent properties. *Jatyadi Taila* was used for wound dressing which has potent wound healing property, which helped in quick wound healing. *Panchatiktaghrita Guggulu* possess antibiotic property preventing the secondary infection. *Amalaki Churna* boosts immunity and restore 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 *Twachya Rasayana* property, hence *Gandhaka Rasayana* was used.

CONCLUSION:

The disease is a life threatening condition, prompt diagnosis and extensive debridement along with IV antibiotics and oral *Ayurvedic* formulations can cure the condition with comparatively better outcome. The use of local/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.

Treatment principle described in Sushruta Samhita proved to be very scientific. Stepwise procedures consisting of *Chedana* and *Shodhana-Ropana* along with supportive care with *Gandhaka Rasayana* & *Panchatiktaghrita Guggulu*, *Amalaki churna* 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.

The purpose of study was to compare the effect of conventional dressings like saline, polyhexanide, potassium permanganate or povidone iodine with the effect of Shodhana Karma (daily cleaning and dressing) with Panchvalkala Kwatha and application of Jatyadi Taila for Shodhana and Ropana Karma (Wound healing) which showed faster clearing of slough as well as appearance of healthy granulation tissue and wound healed without reconstructive surgery, reduced hospitalization, cheap, cost-effective for low income group patients.

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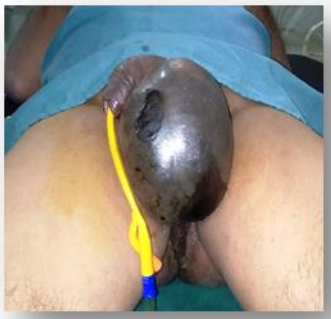
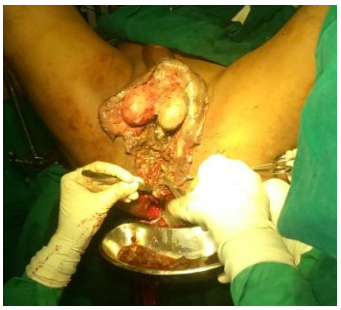
PICTURES OF THE CASE AND PROCEDURE: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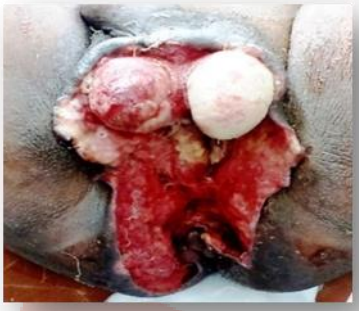
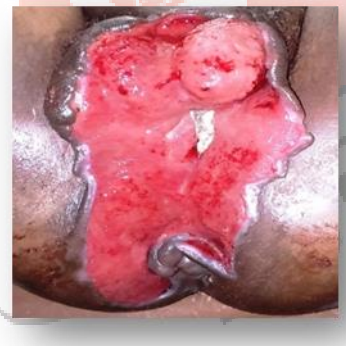
	
POST OP DAY 2	POST OP DAY 10
	
POST OP DAY 21	POST OP DAY 28
	
POST OP DAY 35	POST OP DAY 42

	
POST OP DAY 49	POST OP DAY 56
	
POST OP DAY 63 (COMPLETE HEALING OF THE WOUND)	