

**Original Research Article****Successful Ayurvedic Management of Life Threatening Fournier's Gangrene: A Case Study**

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**Abstract**

*Fournier's gangrene is acute necrotizing fasciitis of scrotum, penis, perineum and may be extended to abdominal wall and legs. It is a rapidly progressive, life threatening emergency. If not properly managed by timely surgical intervention, and active medical management, the outcome is very grave with high mortality. Active management of such a case in Ayurved is rarely reported. Case study: A 60 year old male developed Fournier's gangrene and was admitted and treated by surgery department of B.J. Medical College, Pune. Two surgical debridements were actively carried out but the wound failed to heal and there was a likelihood of the case going in to shock due to septicaemia. Such a case with Fournier's gangrene having Severity Index (FGSI) 9.2; was referred by surgery department to Ayurved department of Sassoon hospital, Pune (the teaching hospital of B.J. Medical College, Pune) and was successfully managed by active Ayurvedic line of treatment. This case study highlights that Modern science has limitations but when both Modern science and Ayurved treat a complicated case in an integrated manner, the outcome is always better.*

**Keywords:** *Fournier's gangrene, Necrotizing fasciitis, Ayurvedic management, Dushtavran, Kotha.*

**Introduction**

Fournier's gangrene is a massive swelling of scrotum and penis that may be extended to perineum or abdominal wall and legs.<sup>1</sup> Fournier's gangrene is a urological life threatening emergency characterized by progressive necrotizing fasciitis of the external genitalia or perineum. Necrotizing fasciitis is a serious condition that quickly damages soft tissues, muscles nerves and blood vessels. That leads to gangrene of skin of scrotum, perineum and

subcutaneous tissues. If not properly managed by timely surgical intervention, and active medical management, the outcome is very grave with high mortality. Septicaemia and multi-organ failure is the cause of death in most of the cases. Most studies reported a mortality rate of 20% to 40% with few studies showing a mortality rate of as high as 88%<sup>2</sup>.

In U.S., the incidence is 1.6/100,000 males per year. The age group most commonly affected is 40-50 years. Fournier's gangrene is extremely rare

in females. In one study in a tertiary care hospital in Southern India, the male: female ratio was reported to be 33:1<sup>3</sup>. Children may be afflicted rarely.

As per one State Inpatient data base from U.S., most of the hospitals (66%) did not report a single case in one year. Hospitals treating >5 cases in one year were only 1%. The hospital admission rate was < 0.02%<sup>2</sup>.

In 1883, Jean Alfred Fournier a French venereologist described the fulminant perineal gangrene as idiopathic, of sudden presentation and rapidly developing in previously healthy, 5 young males<sup>4</sup>. Since then, this condition is known by his name as Fournier's gangrene. Portal of entry of Fournier's gangrene is through breach in integrity of mucous membrane of G.I. tract or Genito-urinary tract that allows bacteria, viruses, or fungi to get deeper into the body e.g. anorectal abscesses, surgical incisions, penetrating trauma, rectal malignancy, diverticulitis, haemorrhoid, anal fissure or urethral tear<sup>1,5</sup>. In few cases no obvious cause is found and may be termed as idiopathic.

Risk factors: Diabetes is reported to be one of the major risk factors; alcohol abuse, H.I.V. infection, obesity were other associated risk factors<sup>1,5</sup>. The severity of Fournier's gangrene is evaluated by a scale developed by Laor et al taking in to consideration Temperature, Heart rate, Respiration rate, Serum sodium, Serum potassium, Serum creatinine, Packed cell volume, Whole blood cell count and Serum bicarbonate. This scale has prognostic value. With a score of over 9, they found a 75% probability of death and score of less than 9 was associated with 78% probability of survival<sup>6</sup>. Score over 10.5 indicated 96% probability of death.

### Case Report

This 60 year old labourer from Gulbarga district of Karnataka, came to Pune for manual job. He was a chronic alcohol addict and chronic bidi smoker. Earlier 2 years back, patient had

developed intestinal obstruction resulting in to gangrene of intestine, that was timely intervened at Surgery department of Sassoon Hospital, Pune and recovery was uneventful. Thereafter patient developed Thrombo-Angiitis Obliterans (Buerger's disease) affecting Lt. little toe. That was amputated four month back. Two days ago patient had fever followed by a painful bluish bulla/blister over his scrotum. Very soon there was massive, painful swelling on his scrotum, testes and perineum with sero-purulent discharge. He was immediately referred by a private doctor to Sassoon hospital, Pune for further management. He was admitted in Surgery ward on 6th Aug 2015.

No H/o Burns, No H/oTrauma, No H/o Hypertension and Diabetes

O/E:-Febrile-Temperature-100<sup>0</sup>F, Pulse-94/min, R.R.-22/min, B.P. 100/60 mm of Hg

Systemic examination- RS, CVS, CNS-Normal

Abdomen- Liver, Spleen not palpable; Lower abdomen tenderness +

X ray chest was normal. ECG-Normal.

Local USG Scrotum: Rt Testes-3.7 x 1.5 x 3.2 cm, bulky vascularity. Multiple hypoechoic areas noted. Spermatic cord- Small pocket of collection noted along post lateral aspect of Rt. Testes

Lt. Testes-3.8 x 1.5 x 2.6 cm. Multiple hypoechoic areas noted.

S/O Infective etiology

He was diagnosed as a case of Fournier's gangrene with perianal extension.

He was catheterised by Foley's catheter.

Patient was operated on the same day under Spinal anesthesia, the dead skin and slough was removed. Sigmoid loop Colostomy was done on 9.8.2015 with perianal debridement to prevent faecal contamination of the operated site. The operating surgeon thought to perform bilateral orchidectomy but spared it in view of thought of transferring the case to Ayurved department. Two units of matched blood were transfused. Fournier's Gangrene Severity Index (FGSI) was 9.2. The operated scrotal-perianal wound failed to heal. There was extremely foul smell from the wound

detectable from a long distance. The condition of patient was deteriorating. Patient left hope for his survival and expressed willingness for death i.e. **Euthanasia**. In such a hopeless condition, he was referred to Ayurved research ward of Sassoon hospital on 12<sup>th</sup> Aug 2015 for further management. He was admitted and successfully treated by the author with Ayurvedic line of treatment as mentioned in the treatment chart (Table No.1).

On admission:-

Patient c/o Fever

Inability to walk,

Loss of appetite

Extreme depression with drive for willingness to live was lost.

On admission to Ayurved research ward, condition of patient was critical;

No H/o Diabetes.and Hypertension

Personal history:- Chronic alcoholic and bidi smoker, Appetite-Low, Sleep- Insomnia

O/E:- Temperature-101<sup>0</sup> F, Pulse-98/min, Respiration-24/min; B.P. 140/90 mm Hg.

Patient was conscious, responding to external stimuli. Foul smell +++ unbearable- detectable from 4 meter distance.

Systemic exam-RS-Tachypnoea, air entry equal on both sides

C.V.S.- NAD; P/A- Liver, Spleen not palpable.

Tenderness on hypogastrium +

C.N.S- Confused, not well oriented

**Local examination:** On admission his wound size was of 14 cm x 12 cm x 1.5 cm deep. There was pale granulation tissue with extremely foul smelling sero-purulent discharge as visible from the Fig No.1. The healing process may be viewed from the photographs Fig 2, 3, and 4.

Investigations:- Hb-7.1 g/dL, RBC-2.3 million/cmm, WBC-19350/cmm, DC-Neutophils-80%, Lymphocytes-15%, Monocytes-2%, Eosiniphils-1%, Basophils-2%, Platelets-261000/cmm HCT-20.8%; S. Creatinine- 1.0 mg/dL, Blood urea- 18 mg/dL ;

Total Proteins-5.6 g, Albumin-1.9 g, Globulin 3.7 g; Alkaline phosphatase-111 units;

Na 129.7 meq/L, K-3.9 meq/L; Serum Bicarbonate- 21.4 meq/L; Ca-7.7 mg/dL

Urine examination: Albumin-Trace, Pus cells-15-20/HPF, Occasional RBC

**Response to treatment:** General health and wellbeing of the patient improved within a week. He was able to walk few steps within 8 days. His appetite was improved and slept well. Life became meaningful to him, for which he had lost hope few days back.

His indwelling catheter was removed after 10 weeks of treatment. He was referred back to Surgery department for closure of colostomy after 18 weeks of treatment; hence last photograph of complete healing was missing.

### Discussion

It is contemplated that patient was a Chronic alcoholic as well as a chronic smoker which are strong risk factors of Fournier's gangrene. Earlier 2 years back patient had intestinal gangrene that was timely operated and had an episode of T.A.O. for which a toe was amputated 4 months back. Thus it was obvious that his circulation was not adequate enough to remain him healthy and that might be a risk factor of developing Fournier's gangrene.

Healing of Fournier's gangrene is a major challenge in surgical practice. It is commonly observed that, such condition many a times fails to heal despite latest modern procedures, wound care including timely surgical debridement & use of all types of antibiotics. Unless treated promptly there is very high risk to the life of patient due to septicemia, gas gangrene or multi-organ failure<sup>7</sup>.

In Ayurved, this condition is labelled as 'Kotha'. Sushrutacharya mentioned the conditions to be excised and mentioned Kotha - a form of gangrene in following shloka,".....Snayu Mauns Shira **Kotho** Valmikam Shatponakah II 4 II<sup>8</sup> Sushruta Samhita Sutra sthan Chapter 25/3-4

Sushrutacharya mentioned that wound on median perineal raphe i.e. *Sevani* as *Duschikitsya* (Very difficult to treat). ".....**Dushchikitsah**; .....**Romanto Upanakh Marma Jangha Asthi**

*Sanshritashcha, Bhagandaram api cha Antarmookham Sevani Kutaka-asthi Sanshritam II* Sushruta Samhita Sutra sthan Chapter 23/6<sup>9</sup>  
Thousands of years back Sushrutacharya stated 6 aetiologlcal factors causing wound, 8 most commonly occurring sites of wound, 5 cardinal clinical features of wound and 60 types of procedures for wound management as mentioned in the following shloka:

*Shanmulo Astaparograhi Panchlakshan lakshit: I*  
*Shashtya vidhanai nirdishtai Chaturbhi: Sadhyate Vran: II*  
Sushrut Samhita Chikitsa sthan 1/134<sup>10</sup>  
We have made use of these principles and appropriate procedures like *Deepan-Pachan, Snehan, Virechan, Dhawan, Dhupan, Shodhan Ropan, and Bruhan* for getting desired healing of Fournier's gangrene.

**Table No 1:** Treatment chart

Type of Treatment	From	To	Details of treatment
Deepan-Pachan	12.8.2015	26.8.2015	Musta+Trifala + Haridra choorna 1 TSF BD
Pachan	12.8.2015	31.12.2015	Gandhak rasayan 2 BD with break of 8 days and again continued for 15 days Sookshma triphala 2 BD Gokshuradi guggul 1 BD
Sanshaman/ Rakta prasadak chikitsa	12.8.2015	12.9.2015	Maha Manjistadi quath 3 TSF BD Guduchi + Gokshur+ Maka +Punarnava choorna 1 gm each BD
Bruhan/ Apurnarbhav chikitsa	27.8.2015	12.9.2015	Tab Bangshil 2 BD Tikta ghrit 2TSF BD
	13.9.15	31.12.2015	Shatawari ghrit 2TSF BD
Virechan/ Vatanuloman chikitsa	16.8.2015	31.8.2015	Gandharv Haritaki 2 gm HS
Vran Karma with Dhupan	12.8.2015	26.8.2015	Wound washing (Dhawan) by quath made from skin of Vata, Umber, Peeple, Daruharidra .Dressing of wound by Vran shodhan tail. Dhupan by Vacha choorna
	27.8.2015	31.12.2015	Wound washing (Dhawan) by quath made from skin of Vata, Umber, Peeple. Dressing of wound by Vran ropan tail & Jatyadi tail ATD. Dhupan by Vacha choorna



**Fig. No.1:** On admission



**Fig. No.2:** On 8<sup>th</sup> day of treatment





Fig. No.3: On 10 weeks of treatment



Fig. No. 4: Wound almost healed 12 week

**Action of various drugs used:-** Musta (*Cyperus rotundus*) and Triphala (a mixture of equal parts of *Emblica officinalis*, *Terminalia bellirica*, *Terminalia chebula*) and acted as *Twak Dosh-har*, reduced excessive *Kleda* and had effect of *Rukshana*. Haridra (*Curcuma longa*) is having

antiseptic, anti-inflammatory, antibiotic properties. Gandhak rasayan and Sookshma triphala are Ayurvedic antibiotics, which reduced *Kleda* and thereby reduced discharge from the wound. Maha Manjistadi quath is *Rakta-prasadak*, corrected anemia, removed *Agnimandya*, and thereby improved appetite.

Guduchi (*Tinospora cordifolia*) is *Jantughna* (Anti-bacterial), acted on *Rakta and Meda*; rejuvenating due to its *Rasayan* effect. Maka (*Eclipta alba*) removed dead cells, facilitated healing. Punarnava (*Boerhaavia diffusa*) is *Tridosha-har* having *Laghu, Ruksha and Sar* properties; has active principle -an alkaloid, *Punarnavine*; that improved function of liver, acted as diuretic, reduced *Shoth* and inflammation; helped in producing new cells due its rejuvenating effect.

Gandharva-haritaki acted as *Virechak*, removed excessive *Pitta* and due to its *Anulomak* activity removed *Vata* and improved circulation. Bangshil is *Shukravardhak*, giving strengths to reproductive organs. Shatawari (*Asparagus racemosus*) is having *Balya, Mauns dhatu vardhak* properties, giving strength to muscular organs and improved function of *Mutravah srotas* (Bladder, Urethra and Penis).

In Ayurved there is mention of decoction of barks of 5 *valkalas* but we used 3 of them easily available i.e. quath made from bark of *Vat (Ficus bengalensis)*, *Udumbar (Ficus racemosa)*, *Ashwathth or Peepal (Ficus religiosa)* with initially Daru haridra (*Berberis aristata*) and later when infection was controlled same without Daru haridra for washing the wound daily. 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 promotes healing; have *Deerghjeevi* (long life) therefore healing is permanent/ non recurrent. Their properties are *Grahi, Sheetal, Vran-Shothhar, Visarp nashak*. The skin of these plants contain anti inflammatory, antibacterial & healing properties. This treatment may be termed as

medicinal debridement. The wound was fumigated by smoke of Ayurvedic procedure called as *Dhupan* by Vacha Choorna . Vacha (*Acorus calamus*) is having *Laghu, Ruksha, Tikshna and Lekhaneeya* properties, which helped to remove the slough and reduced sero-purulent discharge, helped to maintain it clean and dry

After washing & *Dhupan* of the wound, *Vran-shodhan* oil was applied over it and when good granulation tissue was formed *Vran-ropan* oil was applied. *Dhupan* was continued.

When healing was satisfactory, Plastic surgery department expressed readiness for skin grafting but Patient was not ready for that. It is noteworthy to mention here that such a large wound healed completely by Ayurvedic line of treatment without using any antibiotic and without plastic surgery. He was interviewed by Sahyadri Door-darshan (T.V.) channel which was telecasted on 30.11.2015 and he expressed complete satisfaction on Ayurvedic line of treatment. Those who are interested may see his video on following link: [https://youtu.be/1E4lq4o\\_shw](https://youtu.be/1E4lq4o_shw)

When the wound was about to heal, he was referred to Surgery department for closure of colostomy. This case study highlights that Modern science has limitations but when both Modern science and Ayurved treat a complicated case in an integrated manner, the outcome is always better. Manoj Ranjan Meher et al reported Ayurvedic management of one Fournier's gangrene case report in an integrated manner. They used modern antibiotics as per the culture and sensitivity report along with Ayurvedic line of treatment<sup>11</sup>. However in the present case study we did not use a single modern drug or antibiotic. The most important point here is that this case was ineffectively treated by modern science in a tertiary care medical college hospital and was referred to Ayurved, for further management that shows that Modern Science also realizes strength of Ayurved in treating complicated cases. Ayurved has treated this case successfully but we don't want to take full credit of successfully treating the case; we also appreciate contribution

of Modern science in treating the case initially by excision of gangrenous tissue with extensive surgical debridement and creating bypass of stools provided by timely doing colostomy and preventing the faecal contamination. That helped Ayurved to freely apply its treatment principles giving the desired cure and saving the life of a patient whose chances of survival were very few in view of his high score of FGSI as 9.2.

It is documented that those who recover from this life threatening condition, 50% of them later, experience pain from root of penis<sup>7</sup>. But in this case the recovery was complete and there was no pain noted on follow up.

**Conflict of interest-** Nil

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