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Case Study

AN AYURVEDIC REGIME IN THE MANAGEMENT OF NECROTIZING FASCIITIS: A CASE STUDY

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ABSTRACT

Necrotizing fasciitis is a fulminant and life-threatening condition characterized by progressive gangrene of the soft tissues affecting commonly abdominal wall and perineal region cause of which is polymicrobial infection. Necrotising fasciitis is a rapidly spreading infection that produces necrosis of the subcutaneous tissues and overlying skin. It is a surgical emergency that, usually necessitates immediate surgical debridement. High mortality rates are seen in necrotizing fasciitis involving perineum and external genitals especially in males range from 6.3 to 50%, which indicates that the variable outcome of patients with the disease is multifactorial. Infective microorganisms involve in sepsis in anorectal region are difficult to control as antimicrobials used to treat such infections have little penetration in tissues in anorectal region. *Panchavalkala* decoction shows properties like antiseptic, anti-inflammatory, immune-modulatory, antioxidant, antibacterial, antimicrobial wound purifying and healing, astringent properties in *Dustavrana*. We are presenting here a case of 32-year-old gentleman who was initially diagnosed as ischiorectal abscess having no history of diabetes and any chronic illness and visited in anorectal OPD of our hospital with severe pain in perineal region and fever in the past 6-7 days. He was treated as a surgical emergency with proper wound debridement and post-operative wound management was done with cleaning with decoction of *Panchvalakala*, dressing with *Jatyadi* oil and oral Ayurvedic medications.

INTRODUCTION

Necrotizing fasciitis also called as Perineal necrotizing fasciitis is a severe and life threating form of skin and soft tissue infection in the anal and perineal region, 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 the scrotum, perineum, and subcutaneous tissues. [1] If not properly managed timely by surgical intervention, and active medical management, the outcome is very grave with high mortality. Septicaemia and multi-organ failure is affects men, with a global incidence of about the cause of death in most of the cases. The 40–50 age range is the most affected. The condition primarily 1.6/100,000 men. [2] The disease is more prevalent among the diabetic and other immunosuppressed individuals.

The condition affects diabetics and other immunosuppressed people more frequently.

Necrotizing fasciitis as a *Kotha*, which is defined in the *Sushruta Samhita* as tissue gangrene and pus production with cellular death. [3] It is a poly microbial synergistic infection caused the aerobic, anaerobic, gram positive and negative bacteria, yeast and sometimes mycobacteria.

Risk factors: Diabetes is reported to be one of the major risk factors; alcohol abuse, H.I.V. infection, obesity was other associated risk factors.

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MATERIAL AND METHODS

Case Report

A 32-year-old male patient presented to NIA anorectal OPD, with the complaints of pain in perineal region and fever for 6-7 days. There was no H/O any trauma/aspiration/anorexia/weight loss. Patient was not a k/c/o DM/HTN/TB. There was H/O allopathic treatment for fever.

Patient was examined found well oriented to time place and person, conscious with Pulse rate 98bpm, BP- 100/76 mmHg, temperature-101.6^{0}F and RR- 20pm. On local examination, a large circular discoloured yellowish necrotizing patch seen at 11 O'clock position 3-4 cm away from anal verge and all signs of inflammation present at sub-scrotal region with indurated skin and subcutaneous tissue. The area's temperature was elevated, fluctuation test was positive, bilateral ischiorectal fossa was involved. Additionally, there was tenderness in the groin with palpable B/L inguinal lymph nodes and the scrotum was normal in size and shape. On digital rectal examination painful bulging area of the abscess present. The patient was admitted on January 4, 2022, at 1:33pm. The ailment was identified as ischiorectal abscess followed by Necrotizing fasciitis of perineum. There were no abnormalities found in the respiratory or CVS systems.

Investigations advised:

Routine investigations viz. Hb g% TLC, DLC, ESR, RBS, HIV, HBsAg, VDRL, LFT, RFT, ECG CXR-PA View, Urine–R/M were done.

Table 1: Showing investigation of the patient done on 04-01-2022

Investigations	Results
HIV I &II	Non-reactive
HBSAG (Rapid)	Non-reactive
Haemoglobin	12.7g/dl
TLC	**18600/µL**
TEC	3.7 X 10^6 / µL
Platelets	225000/µL
Haematocrit	36.4%
ESR	**46mm**
RBS	111.3g/dL
Bleeding time	3 min 10 sec
Clotting time	5 min 15 sec
LFT	Within normal limits
RFT	Within normal limits
Urine R/M	Within normal limits
CXR & EGG	Normal

Treatment Plan: Surgical intervention *Bhedana* and *Visravana karma* (I&D) under local anaesthesia was planned.

Pre-Operative management

- Informed written consent taken.
- Injection Tetanus Toxoid 0.5 ml IM stat given.
- Sensitivity test for lignocaine was done.
- Prophylactic injection ceftriaxone 1 gm I/V Stat, injection gentamycin 80 mg I/V Stat given.
- Injection Ringer's Lactate 500 ml IV Stat given.

Procedure

Patient was shifted into operation theatre on 04-01-2022 at 2:30pm taken in lithotomy position on operation table. Painting of operative site (o/s) was done followed by draping with sterile cutsheet. Anal canal was examined for any internal opening with lignocaine 2% jelly and diagnosis was confirmed. Inj. Lignocaine 1% with Adernaline approximately 25ml was administered at o/s, after coming the effect of anaesthesia *Bhedana* and *Visravana karma* (Incision & Drainage) was done and all septa were curetted and washed with *Panchvalakala* decoction. Pus sample was sent for culture and sensitivity test.

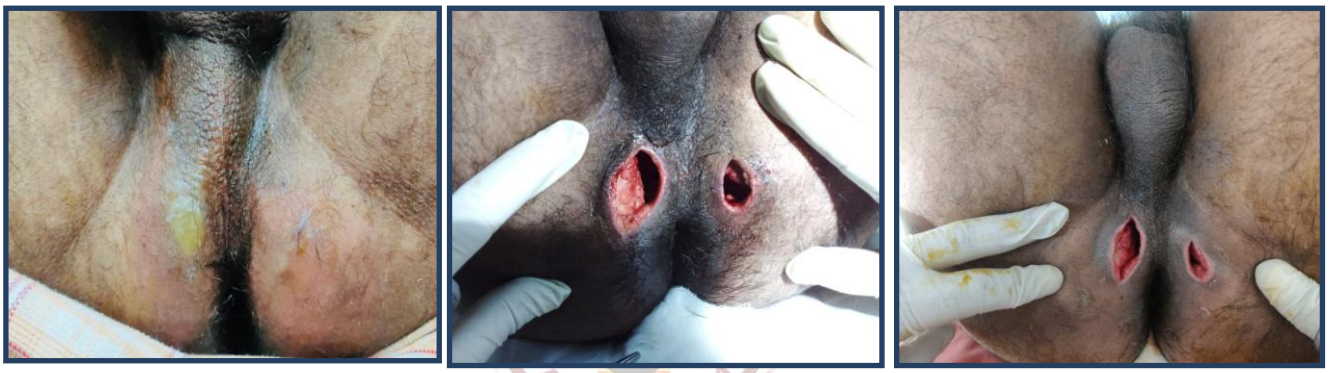
Post-Operative treatment plan

Table 2: Showing post operative treatment plan

S. No	Medication	Dose	Frequency	Mode of administration	*Anupaan*	Duration
1	*Panchvalakala* decoction	Q.S.	Once daily	For wound cleansing	NA	15 days
2	*Jatyadi* oil	Q.S.	Once daily	LA	NA	6 weeks
3	*Triphla guggulu*	500mg	Twice daily	P.O.	Lukewarm water	6 weeks
4	*Rasmanikya*	75mg	Twice daily	P.O.	Lukewarm water	6 weeks
	Shudh gandhak	125mg				
	Amalaki powder	3gm				
5	*Ishabgol* husk	4 tsf	Once daily	P.O.	MILK	6 weeks

Tablet Aceclofenac 100mg + Paracetamol 325mg + serratiopeptidase 10mg SOS given.

Photographs



Pre-OP **Post OP 1st POD** **4th POD**

After 2 weeks **After 3 weeks** **After 6 weeks**

RESULT

Culture and sensitivity reveal the presence of *klebsiella* species in the pus. Daily wound cleaning was done with lukewarm *Panchvalakala* decoction followed by dressing with *Jatyadi* oil till *Shodhana* properties were not achieved. After achieving the stage of *Shuddha varna* cleaning with decoction was stopped and dressing was done with *Jatyadi* oil until complete recovery was achieved.

Gradually patient completely recovered after 6 weeks and with secondary intention the wound was healed as per standard parameters. Complete recovery was achieved and patient get rid of his symptoms. There is no recurrence till 30-May-2023 in follow up.

DISCUSSION

Eradication of the sepsis remains a big challenge which is fundamental requirement for treatment of anorectal disorders. Wound management with minimal damage to anal sphincteric mechanism is of utmost importance. Necrotizing fasciitis is a fulminant disease; it should be treated as early as possible. Step by step treatment process helped in the recovery of the patient. After extensive wound debridement the role of *Shodhana* is important. After proper Shodhana, *Ropana* can be achieved.

Ayurvedic literature has many medicines and formulations to achieve *Shodhana* and *Ropana* in case of *Dushta-vrana*. For treatment of *Dushta-vrana* it needs to be converted into *Shuddha-vrana* by means of *Shastra karma* as well as *Shodhana dravya* use. Once *Vrana shuddhi* is achieved *Ropana* of the *Vrana* is advocated.

For *Shodhana karma Panchvalkala* decoction was taken. In this case we used *Panchvalkala* decoction and result was encouraging. *Panchvalkala* decoction owing to its property of *Shodhana* probably played vital role in achieving healing of the wound. Purpose of presenting this case to highlight the use of *Panchvalkala* decoction as a *Shodhana* agent.

Panchavalkala decoction, phytochemically dominant in phenolic group components like tannins, flavonoids which are mainly responsible for its excellent activity's antiseptic, anti-inflammatory, immune-modulatory, antioxidant, antibacterial, antimicrobial and wound purifying as well as healing, astringent properties. [4]

Jatyadi oil, which possesses strong wound-healing properties and was used as a dressing on wounds, aided in their rapid healing. [5]

Triphala guggulu, is an Ayurvedic formulation that provides the combined effects of *Triphala* and *Guggulu*. *Triphala* brings detoxifying and laxative properties, while *Guggulu* provides anti-inflammatory properties. [6]

Rasmanikya, act as rejuvenating tonic which improves strength, it offers beneficial effects in the management of diseases such as, leprosy, surface wounds, pus, boils, eczema, and leukoderma etc. It purifies blood and pacifies *Vata* and *Kapha dosha*. [7]

***Gandhak* –** It acts as antibacterial, antimicrobial, anti-inflammatory, antioxidant and broad spectrum antibiotic.it boosts immunity and stimulates digestion. [8]

Amalaki churna– Amla possesses antineoplastic, chemo-modulatory, chemo-preventive and radioprotective effects. Several mechanisms are likely to responsible for the observed effect. The most imported being the induction of apoptosis of neoplastic and preneoplastic cells, free radical scavenging, anti-mutagenic, anti-oxidants and anti-inflammatory activities. [9]

Psyllium Isabgol husk swells when it comes into touch with water, which causes the laxative effects. The polysaccharides in psyllium, which turn into a gel in the gut and provide more comfort during defecation, are frequently used to lubricate stool contents. [10]

CONCLUSION

Despite being a life-threatening condition, necrotizing fasciitis can be treated with a relatively improved prognosis with early diagnosis, thorough wound debridement, and oral Ayurvedic formulations. The use of oral Ayurvedic formulations, cleaning with *Panchvalakala* decoction and locally applied medicated oil (*Jatyadi* oil) after surgical debridement helped in early granulation tissue and epithelialization.

The *Sushruta Samhita's* treatment philosophy has proven to be quite scientific.

Step-by-step techniques combining supportive care with *Bhedana* and *Visravana* along with supportive care by the use of *Shudh gandhak*, *Triphala guggulu*, *Rasmanikya*, *Amlaki churna*, Isabgol husk, cleaning with *Panchvalakala* decoction and locally applied medicated oil (*Jatyadi* oil) is very much effective in management of Necrotizing fasciitis after ichiorectal abscess debridement.

From this study we can conclude that the *Panchavalkala* decoction possess numerous beneficial properties of wound healing. Hence maximum number of cases should be studied to validate the efficacy of *Panchavalkala* decoction.

It is crucial to address perineal infections in diabetic and immunosuppressed patients pro-actively to avoid the illness from ever developing in the first place. This is because the ailment has a high mortality rate when such co-morbidities are present.

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