



Case Report on Fournier's Gangrene

Krishna Gowtham.V, Vaishnavi.A, Dr.J.Bhargav Narendra.

Department of Pharmacy Practice, QIS College of Pharmacy, Vengamukkalapalem, Ongole - 523001

ABSTRACT

Fournier's Gangrene is a rare condition marked by fluminent polymicrobial necrotising fasciitis which involves scrotum and penis, or both with occasional extensions upto the an abdominal wall. Pre disposing factors includes Diabetes mellitus,Immuno compromised patients, Alcoholism, Tobacco, Chemotherapy, Radiography etc. Fournier's Gangrene occurs at any age and it effects mostly in men but also effects women too. We present a case of Fournier's Gangrene - A 40 years old male patient was admitted in emergency department with the complaints of pain over the Testicular region, Itching, Ulcerative over the scrotal region with foul smell & pus discharge and fever. This symptoms have started five day prior to the presentation but symptoms are rapidly progressive in nature since 24 hours of admission. His past medical history reveals that he has Diabetes mellitus type-1 and on medication. He had undergone surgery of hydrocelectomy one month back.The management steps Includes Resustation , Broad spectrum Antibiotics, Surgical debridement and skin grafting. As the patient is known diabetes the chances of infection is more. So early presentation, diagnosis and treatment plays a major role in preventing further complications. In order to do this, we have to provide awareness about the disease among the people.

Key words:

Fournier's Gangrene ,
Infection, Debridement,
Necrotisingfasciitis.

Article History:

Received On:29.02.2020

Revised On: 27.04.2020

Accepted On: 29.04.2020

*Corresponding Author

Name: Krishna Gowtham.V

Email: gowthamgowtham191@gmail.com

DOI: <https://doi.org/10.37022/WJCMPR.2020.2220>

INTRODUCTION

Fournier's Gangrene is a serious surgical emergency condition which involves scrotum or penis or both with occasional extension upto the abdominal wall ^(3,23). This clinical condition was first described by GeanAlfered Fournier, A French Dermatologist and Venereologist reported five cases in 1882 ^{3,6}. The hallmark of FG is intense pain and tenderness in the genitalia. Fournier's gangrene occurs at any age even early childhood⁶ . Fournier's gangrene occurs in both male and female in a ratio of 10:1¹². This disease is infective in origin ¹¹. The Aetiology includes abnormal sexual practices, parenteral drug abuse, trauma, insect bite, prior surgical procedures in the perenial region, burns ⁽¹¹⁻¹⁸⁾ . Predisposing factors of FG's include Diabetes Mellitus , alcoholism, immunosuppression, tobacco abuse, chemotherapy, radiography, atrial Hypertension ^{28,29,30} . Diagnosis includes ultrasonography, CT-scan , MRI, radiography, blood culture, complete blood count ¹. Management of FG includes resustation, broad spectrum , intravenousantibiotics, surgical debridement and supportive therapy ¹³ . The present case report is of particular importance as it describes a case of FG with Type-1 Diabetes Mellitus. Management of this condition is always posses greatest challenge in reducing morbidity and mortality ³ .

CASE REPORT

A 40 years old male patient was admitted into emergency department of government general hospital with complaints of fever, pain over the testicular region, itching and ulceration over the scrotal region with foul smell and pus discharge. His symptoms had started five days prior to presentation but had progressed rapidly in preceding 24 hours.

The patient had past medical history of Type-1 Diabetes Mellitus since five years and he is under medication. Patient had underwentsurgery of hydrocelectomy one month back. He

was not an alcoholic. On examination patient was conscious, pallor was not present and icterus was present along with lymphedenophthy. His pulse was 86 beats per minute, BP was 110/80 MMHG. Systemic examination reveal that there is no abnormality. Local examination of scrotum reveals that scrotum was enlarged and tender there was patchy gangrene all over the scrotum with foul smelling in pus discharge. Laboratory investigations are normal ie., RBS:113mg/dl; serum creatinine : 0.9mgmdl; blood urea: 30mg/dl. Before the operation the patient was treated with Inj. Taxim 1gm IV BD, Inj. Ondon 4mg IV STAT and wet dressing.On the day four the patientunderwent surgery ie., reconstruction. The patient responded well for the surgery. The post operative treatment from day 5-25 includes wet dressing,Tab. Cefixim 200mg PO BD,Tab.Diclo 150mg PO BD, Tab. Pantop 40mg PO OD, Tab. B Complex 1tab PO OD, Tab. IFA 1tab PO OD. The patient was discharge on the day 25th by suggesting the precautions.

DISCUSSION

Fournier's Gangrene is a rare ¹¹ condition marked by fluminent polymicrobial necrotising fasciitis ¹⁻¹⁰, which is generally localised disease of scrotum or penis or both with occasional extention up to the abdominal wall ¹¹. In literature many terms have been used synonymously to describe the condition which include idiopathic gangrene of the scrotum, periurethralphelgmon, streptococcal scrotal gangrene and cenegeticnecrotising cellulitis. The hallmark of fournier gangrene is intense pain and tenderness in the genital with pronounced systemic signs and symptoms like fever and lethargy which may last's up to 7 days with genital pain and tenderness. The patient may also experience edema of the overlying skin, dusky appearance of the overlying skin and necrotising patches are observed. If the patient is not managed

Case Report

aggressively at this stage, the condition of the patient may worsen and sepsis with multiple organ failure may follow ²².



Fig 1: Aggressive debridement of FG



Fig 2: When patient underwent Hydrocelectomy

It may occur in both females and males ²⁻⁴. The present ratio of incidents is 1:10 ¹². At present FG's incident rate is reported as 1.6 cases for one lakh people. The sources of infections occur by both aerobic and anaerobic bacteria- commonly E-coli, streptococcus, staphylococcus, enterobacteriaceae, klebsiella, coliforms, clostridia, bacteroids, enterococcus faecalis and cornebacteria²⁻²². The synergistic microbial activity results in production of various exotoxins and enzymes like collagenase, heparinase, hyaluronidase, streptokinase and streptodornase, which lead to tissue destruction and spread of infection.

The aetiological factors of Fournier gangrene are obesity⁹, diabetes mellitus, abnormal sexual practices, alcohol abuse ⁹⁻¹⁵, infection of gastrointestinal tract ³, tissue ischemia ³⁻¹². When it comes to children the main aetiological factor is diaper rash ¹⁷, pelvic injury, omphalitis, localised abscess, circumcision ²⁴⁻²⁷. The most important predisposing factors that we encounter

among the patients are age, diabetes mellitus, rectal cancer, chronic alcohol abuse, malignancy ¹³⁻¹⁶, parental drug use, malnutrition, extreme ages, atrial hypertension, chemotherapy²⁴⁻²⁶. Predisposing factors for mortality in patients with FG is female gender, which is due to the association with the frequent involvement of retroperitoneal and abdominal cavity in inflammatory process ¹³.

The immunocompetent patients presenting with the FG, a thorough evaluation for underlying disease should be done. For this, proper diagnosis mainly radiography, ultrasound, computed tomography, blood culture and MRI are useful in selected cases to rule out retroperitoneal or intraabdominal disease process⁵. When radiography is done in affected area, gas can be detected in the depth of soft tissues and absolute indication for surgical intervention. Ultrasonography can be differentiated intrascrotal abnormality from the cellulitis. CT and MRI are useful in selective cases to rule out retroperitoneal or intraabdominal disease process ²²⁻³⁰.

The management of FG includes early hospitalisation, resuscitation, broad spectrum antibiotics, surgical debridement and adequate supportive therapy ³¹. The negative pressure wound therapy (NPWT) may represent solution to the risk of infection of a large open wound that usually remains after a surgical debridement. It is generally exposed to the atmospheric pressure between 50-125 mmHg in order to increase blood supply, migration of inflammatory cells and removal of exudates. Honey has been reported to be cost effective for wound management in FG. It has capability in controlling bacteria due to its low pH. Hyperbaric oxygen therapy shortens hospital stay, increases wound healing and decreases the gangrenous spread ^(18,30). Povidone iodine is used as a primary agent for the wound dressing ²¹. In recent years vacuum assisted closer (VAC) system dressing has significantly improved the post debridement wound care, minimizing the skin damage and speeding up the healing process ²².

CONCLUSION

FG is a serious surgical emergency with a high mortality rate. To decrease mortality rate the first step is early presentation of the patient to the hospital. In order to do this we have to provide awareness about this rare disease among the people. If the treatment is delayed the area of debridement will be increased, so early presentation, early diagnosis and early management is helpful in preventing the complications such as removal of affected organ and to stop the rapid spread of the disease to the other organs. However, despite advancements in diagnostic modalities and intensive care management, prompt diagnosis with early surgical debridement, antibiotic administration, good supportive care and primary disease management of comorbidities like diabetes mellitus is always a challenge in reducing the mortality and morbidity.

Ethical Approval

We have taken prior permission from the superintendent and HOD of General Surgery Dr. Sriramulu MD, government general hospital, ONGOLE.

Acknowledgement

We thank the patient for allowing us to share his details regarding his condition. We are thankful to Dr. D. Sriramulu sir for explaining about the disease in detail and for encouraging

Case Report

us to make this case report and we also want to extend our gratitude to our guide Dr. J. BhargavNarendra Assist. Prof; Dr. G. Pitchaiah PhD Pharmacology, Professor and HOD of QIS College of pharmacy; Dr. D. Dachinamoorthi M. Pharm, PhD Professor & Principal of QIS College of Pharmacy.

REFERENCES

1. Tejas AP, Revanasiddappa, Hariprasad TR, Rohit K, Fournier's Gangrene - A case report. *Int J Med and Dental Science* 2016; 5 (1): 1101-1103.
2. Christos Iavazzo, KonstantinosKalmantis, VisalikiAnastasidou, George Mantzaris, VallantisKoumpis, Fortune Ntziora-Fournier's gangrene in a patient after third degree burns - A case report. *Journal of medical case reports - Volume -3*.
3. Prasan KumarHota.Fournier's Gangrene: Report of 2 Cases. *Case Reports in Emergency. Medicine.* 2012; Vol-2012: 4 pages.
4. G Martinelli et al. Fournier's gangrene: a clinical presentation of necrotizing fasciitis after bone marrow transplantation. *Bone Marrow Transplantation*,1998; vol 22: 1023-1026.
5. Nivaldo Cardozo Filhoetal.Case report: treatment of Fournier's gangrene of the shoulder girdle. *Revistabrasileira De Ortopedia.* 2018; 53(4): 493-498.
6. YasanIdweini. Necrotising Scrotum Fasciitis (Fournier's Gangrene) in an infant: A Case Report and Review of the Literature. *Clinical Research in Urology.* 2018; Vol 1 (1): 1-3.
7. Sawayama et Al. A fascialLata free flap in pelvic exenteration for Fournier Gangrene due to advanced rectal cancer: A Case Report. *Surgical Case Reports.* 2017;3:74.
8. Tim Jiang, John A, Covington et Al. Fournier Gangrene Associated with Crohn Disease. *Mayo Clinic Proceedings.* 2000;75:647-649.
9. Papadimitrious G, Koukoulaki M, Vardas K, et Al. Fournier Gangrene due to perioperative latrogenic Colon Perforation in a Renal Transplant Recipient. *Saudi Journal of Kidney Diseases and Transplantation.* 2015;26(6):1257-1261.
10. Mukoro Duke George et al. Neonatal Fournier's Gangrene ;sequely of Traditional birth practice: Case Report and Short Review. *Journal of Dental and Medical Sciences.* 2013; 5(3): PP 01-03.
11. Leo Francis Tauro, Roshan M et al. Fournier's Gangrene of the penis. *Indian Journal of Plastic Surgery.* July- December 2005;Vol 38(2):154-155.
12. Corrina's MM, Fernandez MP, Lopoz SG, Madrinan SY. Genital necrotising fasciitis: Fournier's Gangrene. *Dermatol Open Journal.* 2016; 1(2): 30-34.
13. Singh G, Ali I, Bharpoda P, Jindal N. Fournier's Gany; A study of 18 cases. *Archives of International Surgery.*3012;2;2:74-8.
14. Niranjan Kumar et al. Isolated Fournier's Gangrene of Penis: Case Series with Review of Literature. *Journal of Clinical and Diagnostic Research.* 2019 Feb, Vol-13(2):PR01-PR03.
15. Chala SN, Gallop C, Mydlo JH. Fournier's Gangrene; An analysis of repeated surgical debredment. *Eururolog* 2003;43:572-5.
16. Jayan George et al. Perforated Rectal Cancer Presenting as Fournier's Gangrene in a Confused Older Patient. *Reports.* 2018;1:17.
17. Singh AP, Gupta AK, Pardeshi R, Garg D.
18. Neonatal Fournier's Gangrene. *Journal of Clinical Neonatology.* 2018;7:174-6.
19. Michele Del Zingaro et al. Fournier's Gangrene and absue of intravenous drug: unusual case report and review of the Literature. *Open Med.* 2019; 14:694-710.
20. Baghel B, Dhruv K. Fournier's Gangrene in a Neonate: A Case Report *Journal of Nepal Paediatric Society.* 2010;30(3):166-167.
21. AhmetEminv, OktayDokuz et al. A Case Report: Fournier's Gangrene in a patient with Type-1 Diabetes Mellitus. *Turkish Medical Student Journal* 2015;1:149-151.
22. Takashi Miyamoto et al. Fournier's Gangrene: A Case Report. *ACTA Medical Nagasakiensia.* 2017;61:37-40.
23. Amr Y Arkoubi, Sajad Ahmad Salati. Fournier's Gangrene- A Case Report and a brief review. *Journal of Pakistan Association of Dermatologists.* 2015;25(1)44-51.
24. Safioleas MC, Stamatakos MC, Diab AI, Safioleas PM. The use of oxygen in Fournier's gangrene. *Saudi Med J* 2006;27:1748-50.
25. . Ekingen G, Isken T, Agir H, Oncel S, Günlemez A. Fournier's gangrene in childhood: A report of 3 infant patients. *J Pediatr.Surg* 2008;43:e39-42.
26. Ameh EA, Dauda MM, Sabiu L, Mshelbwala PM, Mbibu HN, Nmadu PT, et al. Fournier's gangrene in neonates and infants. *Eur J PediatrSurg* 2004;14:418-21.
27. Bakshi C, Banavali S, Lokeshwar N, Prasad R, Advani S. Clustering of Fournier (male genital) gangrene cases in a pediatric cancer ward. *Med PediatrOncol* 2003;41:472-4.
28. Laucks SS 2nd. Fournier's gangrene. *SurgClin North Am*1994;74:1339-52.
29. Pastore AL, Palleschi G, Ripoli A, et al. A multistep approach to manage Fournier's gangrene in a patient with unknown type II diabetes: surgery, hyperbaric oxygen, and vacuumassisted closure therapy: a case report. *J Med Case Rep,* 2013, 7:1.
30. Rosa I, Guerreiro F. Hyperbaric oxygen therapy for the treatment of Fournier's gangrene: a review of 34 cases. *Acta Med Port,* 2015, 28(5): 619-623.
31. Thrane JF, Ovesen T. Scarce evidence of efficacy of hyperbaric oxygen therapy in necrotizing soft tissue infection: a systematic review. *Infect Dis (Lond),* 2019 Jul;51(7):485-492.
32. Licheri S, Erdas E, Pisano G et al. Fournier's gangrene in an HIV-positive patient: Therapeutic options. *Chir Ital.* 2008;60:607-15.
33. Czymek R, Frank P, Limmer S, Schmidt A, Jungbuth T, Roblick U, et al. Fournier's gangrene: is female gender a risk factor? *Langenbecks arch surg* 2010;395: 173-80