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A study of Five Cases of Fournier's Gangrene

K M Burhanuddin¹, Ashish K Chowdhury², Hasan M³

Summary: Fournier's gangrene is a nasty¹ surgical problem whose commonest source of infection is from anorectal sepsis². Records of five patients were studied by compiling the Information related to its aetiology, presentations and outcome including mortality & morbidity. Incision and drainage of ano-rectal abscess, prompt and adequate debridement of the affected tissue, suitable antibiotics in combination, correction of anaemia, hypoproteinaemia, reconstruction of scrotum and enhousement of testes were done. In all cases anorectal sepsis were found to be the main source of infection. All of them reported late and were dealt inadequately prior to admission into our hospital. Malnutrition, old age, severe anaemia, diabetes mellitus, extensive local necrosis and systemic sepsis were among the causes for mortality. One patient died of septicaemia with MOFS (multi organ failure syndrome), who was of 70. Early detection and adequate management of anorectal sepsis may reduce the incidence of Fournier's gangrene. Reconstruction of scrotal wall abates the psychological insult to the patient incurred as well as reduces the duration of hospital stay. Presence of associated complete inguinal hernia needs additional special care.

Key words: Fournier's gangrene, outcome.



Picture 1

¹ Associate Professor, Department of Surgery, USTC

² Assistant Professor & all Correspondences, Department of Surgery, USTC

³ Resident Surgeon, Department of Surgery, USTC

Introduction

Fournier's gangrene is a fulminating gangrenous condition of the scrotum^{3,6,8} which is usually completely destroyed, resulting in a shameful exposure of testes (Picture-1). Similar pathological condition occurs in female⁷ in labium majus as embryological origin of labial tissue is similar to that of scrotal wall. Fournier's gangrene is typically described as a polymicrobial synergistic necrotizing fasciitis involving peri-rectal, perineal, genital and its neighbouring area which is characterized by obliterative endarteritis resulting in gangrene of the skin and subcutaneous tissue.^{4,5} Anorectal sepsis, genitourinary infections and trauma are the main causes.⁶ Mortality rate of which ranges from 7%--75%² About general status of the patients like, old age, malnutrition, diabetes mellitus, presence of other systemic disease and out of local factors extent of necrosis have an adverse influence on the disease process and its prognosis.

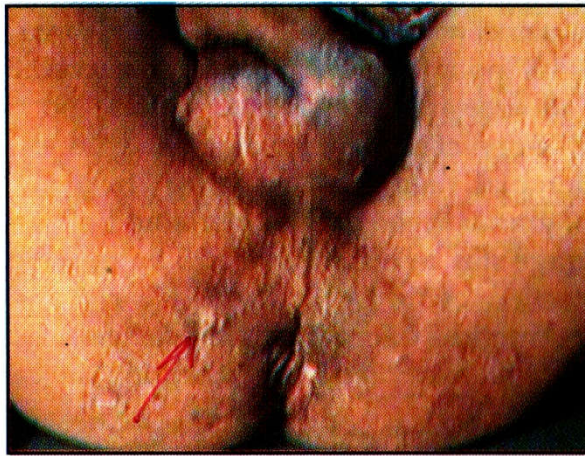


Picture 2

Methods and Materials

Retrospective study of five cases of Fournier's gangrene, who were treated in the USTC & BBMH during the previous one year period were taken. All patients were treated at different places inadequately for anorectal abscess prior to admission in our hospital. Site of origin was noted. Extent of gangrene was calculated by modified burn assessment criteria of 1%= One palmer surface.² Predisposing and precipitating factors were identified. General status of the patient was assessed, pulse rate, blood pressure, temperature, respiratory rate. Patients who had temperature > 100°F, pulse > 100/min, respiration > 20/m with altered sensorium were categorized as

septicaemic. For all patients blood R/E, urine R/E, stool R/E, FBS, serum urea, creatinine, electrolytes, protein, X-ray chest P/A view, E.C.G., were requested and results were noted. Blood cultures and wound discharges were studied for microbes. Treatment policy was designed with suitable antibiotics in combination (Triple regimen^{3,7} of metronidazole, aminoglycosides, cephalosporine) immediate adequate debridement of wound, correction of general deficits, treatment of associated disease and lastly reconstruction of scrotal wall.



Picture 3

Results

Age of the patient were ranging from 48-70 yrs with an average of 57.2 yrs. All of them presented with foul smelling purulent discharge (Pic. no: 1) from the affected area. We noted oedema and crepitation in the thigh and lower abdominal wall in two cases. All of the patients had shameful exposure of testes. One patient had right-sided reducible complete inguinal hernia, who was in great danger of spreading sepsis into the peritoneal cavity. Patient no-3 (Table-1) who was the oldest of all (70yrs) was septicaemic on admission. In addition he was diabetic and he had also rt. lobar pneumonia, gross anaemia, chronic renal failure and generalized debility. He needed repeated debridement, blood transfusion and ultimate bilateral orchidectomy in addition to the other measures employed for the rest of the patients. In spite of all the above measures the patient succumbed to death due to multi-organ failure syndrome (MOFS). Case no:5 who was also diabetic and septicaemic and had extensive local necrosis (2.5%) on admission, showed good response with our designed treatment policy. Remaining three cases (case no: 1,2,4)

had satisfactory uneventful recovery. Case no: 4 who had associated inguinal hernia was managed carefully by keeping the hernia in a reduced state as far as possible most of the time. He did not require scrotal reconstruction as scrotal wound healed at second intention. On discharge he was advised surgery for that on an early suitable time. One patient (case no: 1) had fistula in ano on discharge. (Picture no: 3) and was advised accordingly. Total WBC count was high in all of the cases as well as they were anaemic with a Hb% ranging from 40%--60%. Four patients were found to be diabetic required administration of soluble insulin. Case no: 3 had plenty of pus cells in the urine with a moderately raised urea and creatinine level indicating a poor renal functional reserve. E.C.G. showed ischemic heart disease in case no: 3 & 4. Case no: 3 had rt. lobar pneumonia on X-ray chest. Bacteriological studies confirmed the mixed polymicrobial aetiology ranging from Streptococcus, Staphylococcus, gram (-)ve enterobacteria and anaerobes excepting Clostridia. Average stay in hospital was 25 days, which was lesser in case where infection could be controlled early and scrotum was ready for reconstruction. Mortality rate was calculated to be 20%, whereas morbidity was counted none excepting the case no: 1.

Discussion

Fournier's gangrene is a potentially fatal, acute gangrenous infection of scrotum, penis, perineum and adjacent area^{8,5} Though many causes like anorectal abscess, urinary tract infection may be encountered. but in our study anorectal abscess and its inadequate management was found to be the main cause for it. Old age, malnutrition, diabetes mellitus, pneumonia COAD (chronic obstructive airway disease), alcoholism, immunosuppression, Systemic sepsis⁵ all are risk factors. In addition to taking the general measures, adequate and prompt debridement of necrosed tissue followed by scrotal reconstruction shortens hospital stay by hastening recovery, reducing mortality, morbidity and lastly improves psychological insult incurred to the patient. Some authors² advocate faecal diversion by performing defunctioning colostomy to prevent recontamination. We did not apply this in our cases. The patient who died, we think faecal diversion could not have prevent his death. Associated inguinal hernia needs special attention Repeated follow up of the patient is necessary as some patients may harbour infection in persistence of fistula in ano.(Picture:3)

Table-1: Comparative study of Presentations

Sl. No.	Age of Pt. (Yr.)	Time elapsed Before admission (Delay)	Infection Originated From	Extent of gangrene (%)	Site of infection	Associated disease	Presence of Septicaemia on admission
1	50	6 Days	Anorectal Abscess	1.2%	Perineum Scrotum groin	Hypertension, Diabetes Mellitus	Absent
2	60	6 Days	„	1.1%	Perineum Scrotum groin	Hypertension, Diabetes Mellitus	Absent
3	70	12 Days	„	4.5%	Perineum, Groin, Buttock, thigh lower abdomen	Diabetes Mellitus, IHD Right lobar Pneumonia, COPD, renal Insufficiency,	Present
4	48	5 Days	„	1.0%	Perineum Scrotum	Right inguinal Hernia	Absent
5	58	6 Days	„	1.5%	Perineum Scrotum, groin, Right thigh	Diabetes Mellitus, IHD	Present

Table-2: Management and outcome

Sl. No. of pt.	Surgical procedures	Period of hospital sta	Morbidity	Result
1	Debridement once, surgical dressings, Scrotal reconstruction	20 Days	Fistula-in-ano	Good
2	Repeated and adequate debridement (twice), regular dressings	25 Days	None	Good
3	Repeated debridement, Wide excision (twice), Regular dressings, bilateral orchidectomy	30 Days		Expired
4	Debridement once, dressings, scrotum healed by secondary intension	22 Days	None	Good
5	Debridement once, Scrotal reconstruction	18 Days	None	Good

Conclusion

Anorectal abscess is the predominant cause for Fournier’s gangrene. Early detection and prompt intensive medical and surgical expedite managements can only reduce its dreaded outcome and complications with a memorable psychosomatic recovery. Public awareness should be developed in this regard.

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