



Observational Study of Risk Factors and Pathophysiology of Idiopathic Gangrene of the Scrotum

KEYWORDS

Necrotizing fasciitis, Fournier's gangrene, surgical debridement

Dr. Rakesh Kumar

MS, Associate Professor, J.L.N.M.C.H. Bhagalpur, Aryabhatta Knowledge University

Dr. Pankaj Kumar

MS, Assistant Professor, J.L.N.M.C.H. Bhagalpur, Aryabhatta Knowledge University

Dr. Harishankar Prasad

Senior Resident, J.L.N.M.C.H. Bhagalpur

Dr. Om Prakash bharti

Junior Resident, J.L.N.M.C.H. Bhagalpur

ABSTRACT

Necrotizing fasciitis is a severe rare and lethal soft tissue infection involving scrotum, perineum, abdominal wall or extremities. This infection progresses so rapidly that mortality rate (median rate 32.2%) is high and it becomes more in presence of co-morbidities such as diabetes mellitus, immunosuppression, chronic liver disease, and chronic renal disease. The clinical status of the patient varies from erythema, swelling, and tenderness in the early stage to skin ischemia with blisters and bullae in the advanced stage of infection. In its fulminant form, the patient is critically ill with signs and symptoms of severe septic shock and multiple organ dysfunctions. Early Clinical diagnosis is very much important to manage patients. Management of the infection begins with broad-spectrum antibiotics, but early and aggressive drainage and meticulous debridement constitute the mainstay of treatment. Postoperative management of the surgical wound with secondary suturing or skin grafting is also important for the patient's survival, along with proper nutrition.

INTRODUCTION –

Gangrene of the scrotum is an uncommon dermal surgical emergency where necrotizing skin infection involves almost whole of the scrotum and if not treated early can involve penis and perineum or abdominal wall. These local variants of necrotizing fasciitis termed as Fournier's gangrene. It results from vascular disease of infective origin appearing with dramatic redness and culminating in rapid onset of gangrene. The infection is usually caused by a mixture of aerobic and anaerobic organisms, which spread along with fascial planes of the scrotal skin and subcutaneous tissue resulting in obliterative arteritis of the scrotum. Usually no apparent source of infection is recognizable but the portal of entry may be a fistula in ano or any breach of the ano-rectal mucocutaneous junction. But in some cases it follows minor injuries as scratches, bruise and some surgical procedures in perineal area as urethral dilatation, sclerotherapy in hemorrhoids or periurethral abscess. This condition is always associated with immunocompromised conditions such as diabetes mellitus, alcoholism, and old age or in malnourished persons. The condition appears with sudden scrotal pain associated with pallor or pyrexia. Cellulitis appears rapidly within hours and progresses to necrosis until the entire scrotal and sometimes the surrounding penile skin sloughs out leaving both testes exposed but spared.

The purpose of this study was observation of profile of individuals suffering from sudden development of gangrene of scrotum without any preexisting condition and how it occurs so rapidly and how to get rid of that.

MATERIAL AND METHOD–

The present study includes observation of 42 cases of gangrene of scrotum admitted and managed at J.L.N.M.C.H. Bhagalpur Bihar, department of surgery between January 2014 to July 2015. All the cases presented with sudden scrotal pain followed by swelling and gradually development of discoloration and blackening of scrotal skin. In due

course of management excision of gangrenous necrotic tissues and daily change of dressing done. I.V. Antibiotic coverage along with injection Metronidazole and analgesics gave relief pain. Scrotal discharge sent for culture and sensitivity test and after getting report Antibiotics changed accordingly. After healing of wound either secondary suturing or skin grafting done for wound cover.

In any study the youngest patient was middle-aged man of 33 years while the oldest was 76 years. The average age being 54.5 years. Most of the patients were from low socio economic group. By occupation mostly were farmers or laborer. Almost all patients' complaints of mild to moderate fever, discomfort and pain or swelling of scrotum. Thereafter they developed discoloration and discharge from necrotic tissue. 7 patients were very sick and toxic at the time of admission. 2 of which were admitted for pain lower abdomen and latter on developed gangrene of scrotum after 2 days. In 8 patients there was history of minor trauma over scrotum or perineum. 3 patients were found diabetic on oral hypoglycemic drugs. Bacteriological examination of discharged fluid showed growth of staphylococci in 5 cases and E. Coli in 7 cases and Streptococci in 3 cases. In others culture showed no growth. In 22 cases line of demarcation between healthy and necrotic tissue appeared in 3-5 days. In 7 cases only small patch of gangrene appeared but 5 patients presented with extensive slough and later on testes were exposed but no involvement of testes seen in almost all cases. Penile skin was involved in one case only. Whereas in 1 patient had quadriplegia along with gangrenous scrotum and penile skin. In all cases wide excision of necrotic tissue done followed by regular EUSOL and povidone iodine 10% solution dressing done till the appearance of healthy granulation tissue along with high protein diet. 20 patients needed secondary suturing while 2 patients underwent skin grafting. In 11 patients wound healed and apposed spontaneously. In 6 cases associated vaginal hydrocele were present, which was aspirated to fa-

facilitate aspiration and asked for eversion of sac later on if recurrence occurs.

DISCUSSION –

According to most of the studies the most likely cause of gangrene of the scrotum appears to be spreading infection from periurethral glands which involves the scrotal skin and root of penile skin.

According to Mansfield this condition is a vascular disorder of infective origin analogous to cavernous sinus thrombosis. It has been reported in association with systemic diseases as small pox, measles, diabetes mellitus etc. In our series only 2 patients were associated acute abdomen. Dunaif states the most likely cause appears to be spreading infection from periurethral glands. In gangrene of the scrotum there is fulminant inflammation of the subcutaneous tissue, which results in obliterative arteritis of the scrotal skin causing its ischemic necrosis. In all reports non-involvements of the testes and cord structures have been spared. Which is because of their separate blood supply. In present study we also not found any more involvement of testes and deeper tissues. It appears that a mixed bacteriological pattern is characteristic of this disease. Since various organisms have been identified singly or in combination. In present study also similar bacteriological findings was observed.

Aggressive topical debridement and regular dressing with administration of broad-spectrum antibiotics to prevent and control overwhelming sepsis are the mainstay of treatment. After gangrenous changes has resolved prompt healing takes place. Secondary suturing and skin grafting is almost always successful and reduces the convalescence. Similar results were noted in our studies also. There is no any mortality in this study.

REFERENCE

1. Burpec J. F. & Edwards P ; Fournier's gangrene J. Uro. 1972,107, 812-814
2. Mansfield O.T. ; Spontaneous gangrene of the scrotum, Brit. J. Surg. 1946, 33 , 275-77
3. Singh A. ; Fournier's gangrene of scrotum, J. Ind. Med. Assoc. 1971, 56 , 137-138
4. Undere A. R. & Tilak G. H. , Fourniers Gangrene of the scrotum , J. Ind Med. Assoc. 1966, 46 : 259-261
5. Blandey J.P. & Fowler C. G. , 1995, Urology 2nd edition, Blackwells scientific oxford.