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EARLY DIAGNOSIS OF FOURNIER'S GANGRENE BY ULTRASOUND AND ITS OUTCOME IN A SECONDARY LEVEL HEALTH CARE CENTRE

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ABSTRACT

Fournier's gangrene (FG) is an acute rapidly progressing infective necrotizing fasciitis of the genital, perineal and perianal regions which carries high mortality rates. We report here a case of an early diagnosis of FG by an emergency ultrasound examination in an 85-year old gentleman and its successful outcome with early aggressive wound debridement along with broad-spectrum antibiotics. High index of clinical suspicion along with urgent ultrasound imaging clinches an early diagnosis. Sonologist detected air pockets in the subcutaneous tissues of the perineal area. Prompt diagnosis by clinical and ultrasound examination with aggressive surgical therapy, antibiotics and proper wound care gives best results.

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INTRODUCTION

In 1764, Baurienne originally described an idiopathic, rapidly progressive soft-tissue necrotizing process that led to gangrene of the male genitalia. However, Jean-Alfred Fournier, a Parisian venereologist presented 5 cases in clinical lectures in 1883 (Mallikarjuna *et al.*, 2012). Fournier's gangrene (FG) is a polymicrobial synergistic infection of the fascial planes of perineal, genital and perianal tissues (Erol *et al.*, 1193-1198). It's reported in men, women and children as well. It commonly affects the diabetics, poor personal hygiene and immunocompromised individuals. The major sources of sepsis are the local skin, colon, anus and rectum, and the lower urinary tract. Colonic, anal and rectal sources carry the worst prognosis.

CASE REPORT

An 85 year old gentleman presented to us with pain and swelling in the perineal area of 2 days duration. He is a known case of Insulin dependent diabetes mellitus, coronary artery disease and post coronary artery bypass graft status. On examination, soft swelling noted in the perineal area of 5 cm in size, hemispherical in shape, no redness,

skin was not gangrenous and minimal tenderness present fig 1. Otherwise testis, cord structures and anal canal and perianal area were normal. He had nocturia, urinary frequency symptoms as well. He denied any altered bowel disturbances. Total count was 14.2 k/uL, neutrophils 78% elevated and urine routine test doesn't show any pus cells. He underwent emergency ultrasound using high frequency linear array transducer of the perineal area and showed air pockets with dirty shadowing with subcutaneous air in the scrotal wall which signaled the diagnosis of FG as shown in fig 2. Patient planned for immediate abscess drainage with aggressive wound debridement. Emergency abscess drainage under spinal anaesthesia done, gush of air bubbles with thick foul smelled pus discharge evacuated and figure 3 shows the immediate post debridement status of the wound. However he had second sitting of slough excision after one week and daily wound care provided. Wound completely healed in four weeks time.

DISCUSSION

Our patient presented to us with two days history of pain and diagnosed promptly with ultrasound examination. Ultrasound detects a thickened wall containing hyperechoic foci that demonstrate reverberation artifacts; causing "dirty" shadowing that represents gas within the scrotal wall (Mallikarjuna *et al.*, 2012). Evidence of gas within the scrotal wall seen prior to clinical crepitus¹.

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Figure 1. Preop picture



Figure 2. Ultrasound scrotum



Figure 3. Immediate postop



Figure 4. After 2 weeks

Generally, either the patient present late to the doctor or the examining physician miss the early diagnosis of Fournier's gangrene. Ultrasound is a valuable tool in the early diagnosis of Fournier's gangrene and shouldn't be overlooked for any patient with scrotal perineal abscess. USG also differentiates FG from scrotal edema or cellulitis of scrotum. Ultrasound has a sensitivity of 88% and specificity of 93% in diagnosis of necrotising fasciitis (Gutmann Josh, 2016). Reactive hydrocele may be present on the affected side. The testis and epididymis are usually normal in size and echotexture due to their separate blood supply. Cord structures enlargement is characteristic of advanced infective lesions of scrotum (Kathryn *et al.*, 2015). CT abdomen can demonstrate the extent of the disease in retroperitoneal, thigh or intrabdominal sites. The predisposing factors of FG in our patient were diabetes, advanced age and probably undetected periurethral causes with prostamegaly. Thorough debridement of necrotic scrotal wall until the healthy tissue seen is the basic of surgical management. The treatment options for Fournier's gangrene are aggressive surgical debridement, broad spectrum antibiotics, fecal and urinary diversions, topical therapy, hyperbaric oxygen therapy, vacuum assisted closure and plastic reconstruction.

Conclusion

Fournier's gangrene needs an early diagnosis with ultrasound examination and stress the radiologist to look for dirty shadowing and gas in the scrotal wall. Physician should refer this patient at the earliest to the surgeon for the better outcome.

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