

Supralevator Abscess Complicated by Necrotic Fasciitis of Peritoneum, Genitalia, Anterior Abdominal Wall and Retroperitoneum

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Abstract

A supralevator anorectal abscess may lead to a rare clinical complication, such as perineal necrotizing fasciitis. A 57-year-old man was admitted on an emergency basis with evidence of a deep anorectal abscess of 5-day duration. The clinical presentation involved an unbounded purulent destructive inflammation spreading onto the adjacent areas, with the development of a septic condition. Following a short preparation, a radical surgical debridement of a subfascial purulent necrotic phlegmon of the pelvic space was performed. Since the lower part of the abdomen, retroperitoneum and scrotum were involved, 4 additional subsequent necrectomies were performed at 48-hour intervals. The aggressive radical operative treatment and the combined intensive therapy were the main contributors to the favorable outcome of the disease.

Keywords: supralevator abscess, necrotizing fasciitis, Fournier's gangrene

Introduction

The supralevator abscess is the most complex variant of deep anorectal abscesses, because its symptoms are not specific and are rarely manifested initially, which results in a delayed diagnosis and surgical treatment [1,2]. A comparatively rare complication of this abscess is the perineal necrotic fasciitis which occurs in people with immunosuppressive concomitant diseases. It is manifested as a progressive and generalized phlegmonous destructive inflammation of the soft tissues of the perianal, perineal, genital and gluteal regions, invasively involving even the

lower part of the anterior abdominal wall. The disease was described in detail for the first time as genital gangrene in 1883 by J. Fournier [3]. Initially, the disease may have a different clinical origin, but most frequently it is the resultant complication of an anorectal inflammatory process; more rarely it occurs following a genital or dermatological disease [4]. A characteristic feature resulting from the spread of this process is the progressive deterioration of the patient's general condition, with the symptoms of sepsis, increasing proportionally to the newly involved areas [5].

Case presentation

We report a case of clinical interest, manifested as a supralevator abscess complicated by progressive necrotizing fasciitis of the peritoneum, genitalia, anterior abdominal wall and retroperitoneal space. The patient M.M., aged 57, with case history № 66509/2997 of 2020 was admitted on an emergency basis to St. George University Hospital of Medical University – Plovdiv, First Clinic of Surgery on Nov. 16, 2020 with subjective symptoms of a deep anorectal abscess. For 5 days he was suffering from increasing pain in the perineum and the anal area, accompanied by weakness, discomfort, general feebleness and insomnia. His

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temperature gradually rose to 38°C, and he had shivers. He complained of dysuria and received treatment for “inflamed hemorrhoids”. On the 4-th day the pains became intensive and constant in nature, the swelling spread, involving the scrotum and the gluteal region. Oedema gradually occurred in the lower part of the anterior abdominal wall. He never suffered from inflammatory diseases in the regions involved.

The clinical examination on admission revealed a severely affected general condition, weakness, febrility of 38.5°C, tachycardia/110 beats/min/, hypotension/BP 85/60/, suggesting septic condition. Insulin-dependent diabetes mellitus was diagnosed on admission.

The local status observed tender and reddened infiltrate in the perianal, scrotal and gluteal areas with an extensive phlegmonous inflammation not demarcated from the surrounding tissues, at some sites with inflammatory and ischemic alterations of the overlying skin. There was diffusely manifested edema in the areas involved, with soft texture and locally increased temperature. The anorectal digital examination revealed a deep tender infiltrate with blurred boundaries and solid texture.

The laboratory blood tests showed leukocytosis (WBC)- $20.98 \times 10^9/l$, elevated blood sugar – 25.3 mmol/l, total protein – 54.0 mmol/l, total bilirubin – 28.5 mmol/l, amylase – 152.0, elevated C-reactive protein (CRP) – 377.0, urine – glucose 3 (+) pos., ketone bodies 2 (+) pos. The remaining biochemical investigations and the coagulation tests were within reference values.

Abdominal radiograph revealed no gas collection or hydroaeric shadows.

Following a short preparation the patient underwent emergency surgery under general anesthesia. A deep incision was made in the right suprlevator space, which exposed a large 250-ml purulent collection with a putrid smell. A specimen was sent for a microbiological investigation, after which a digital revision of the cavity was performed, including removal of the adhesions and septa. Several incisions were performed in the lower anterior abdominal wall, the scrotum and the gluteal region. Incisions into the perineal space followed, where marked necrotic areas were found. Non-abundant purulent secretion was observed with putrid smell, from a pelvic subfascial purulent necrotic phlegmon, not clearly demarcated from the adjacent tissues. Fasciotomy and necrectomy was performed, followed by drainage.

A day-to-day postoperative control was required, with the bandage changed twice daily. Surgical debridement for newly involved purulent necrotic areas was performed every 48 hours under general anesthesia. A total of 4 planned revisions were done, with subsequent re-incisions, necrectomies and drainage. The 2-nd surgical debridement found involvement of the retroperitoneal space, which resulted in two incisions, necrectomy and drainage (Fig. 1).

The 3-rd postoperative revision required bilateral orchiectomy, because of the progressive purulent phlegmonous inflammation, disrupted vascular circulation and necrosis of the testicles.



Figure 1. A Fournier's gangrene after debridement.

Complex and intensive resuscitation and anti-inflammatory therapies were applied simultaneously with the surgical treatment. Initial empirical antibacterial treatment was started, with broad-spectrum antibiotics, including metronidazole, subsequently modified according to the microbiological findings. The result from the microbiological investigation № 10648/2020 showed *Escherichia coli*.

The final diagnosis was: Right suprlevator abscess. Necrotizing fasciitis of the perineum, gluteus, scrotum, retroperitoneum space and abdominal wall. Fournier's Gangrene. Concomitant diseases: Diabetes. Left side kidney calculus.

The postoperative period had a comparatively smooth course. Two follow-up examinations were performed after discharge from hospital, with insignificant complaints registered. The 4-th month follow-up after hospitalization disclosed no complaints, the patient was feeling well.

The good outcome resulted from the maximally radical primary surgery applied and the subsequent revisions with urgent necrectomies. The main problem of this complicated suprlevator abscess was the achievement of a timely optimal control over the phlegmonous destructive process [6]. The presence of the newly found diabetes was related to the patient's lowered immunity, which led to rapid progression of the inflammatory process. Whenever possible, magnetic resonance imaging is an important method in determining the localization of the primary inflammatory focus, as well as the choice of an efficient approach to surgical drainage [7]. According to A. Gupta et al. [8], the disease is manifested as gangrene of the skin and the underlying subcutaneous tissue resulting from thrombotic vasculitis. They point out that the underlying muscles are preserved, uninvolved by the necrotic process, having no evidence of purulent myositis. Various indices are used for the prognosis and evaluation of disease severity - Fournier's Gangrene Severity Index (FGSI) – with a maximum of 15 pts and

Uludag Fournier's Gangrene Severity Index (UFGSI) [9,10]. Some authors apply adjuvant hyperbaric oxygen therapy or vacuum assisted therapy [11]. The aggressive surgical treatment includes a step approach, where timely identification and elimination of the source of infection is of crucial importance for the outcome [12]. Of similar significance were the timely, repeated revisions involving extensive and radical surgical debridement with wide excisions to expose the necrotic areas until healthy tissue was reached [13].

Conclusion:

This case of supralelevator abscess, complicated by necrotizing fasciitis demonstrates scarce, non-specific initial local symptoms and rapid diffuse progression of the destructive process without demarcation. Aggressive repeated debridement is the cornerstone lifesaving procedure of choice. This include wide necrectomy of the purulent destructive areas and timely revisions of the newly formed purulent cavities, leading to a favourable outcome.

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