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Enema-Induced Rectal Perforation Complicated by Rapidly Progressive Fournier Gangrene in a Frail Elderly Patient: A Clinical Case Report

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Abstract

The following case study is presented in order to illustrate a rare instance of enema-induced rectal perforation in a patient of advanced age who was also frail. The condition rapidly progressed to Fournier gangrene. The importance of early diagnosis, faecal diversion, and staged surgical debridement is emphasised. A 73-year-old male patient suffering from Alzheimer's disease and intellectual disability developed acute perineal pain following the administration of a cleansing enema. A comprehensive clinical examination was conducted, and laboratory tests were performed. Contrast-enhanced computed tomography was also conducted. The patient underwent an emergency laparotomy, which included the Hartmann procedure, followed by staged perineal–inguinal debridements. The patient's clinical progress was meticulously monitored throughout their hospitalisation.

Imaging revealed extensive subcutaneous emphysema of the perineum, hemiscrotum, and inguinal canal with perirectal free air, indicating rectal perforation. Intraoperatively, a 1-cm full-thickness perforation was detected at the 12 o'clock position of the rectum. A Hartmann procedure was performed, followed by three staged debridements due to advancing necrotising fasciitis. The wound was closed primarily on postoperative day 18, and the patient was discharged in stable condition. It is important to note that enema-induced rectal perforation has the potential to result in fulminant Fournier gangrene, a condition that is especially prevalent in elderly patients who are considered to be frail. Early CT evaluation, prompt faecal diversion, and serial debridement are essential for successful outcomes. It is imperative that clinicians maintain heightened awareness when managing vulnerable patients undergoing enema procedures.

Keywords: Rectal perforation, Enema, Fournier gangren, Necrotizing fasciitis, Hartmann procedure

Zayıf Yaşlı Hastada Hızla İlerleyen Fournier Gangreni ile Komplike Olan Lavman Kaynaklı Rektal Perforasyon: Bir Klinik Vaka Raporu

Özet

Aşağıdaki vaka çalışması, ileri yaşta ve zayıf bir hastada lavman kaynaklı nadir görülen bir rektal perforasyon örneğini göstermek amacıyla sunulmuştur. Durum hızla Fournier gangrenine ilerlemiştir. Erken tanı, fekal diversiyon ve aşamalı cerrahi debridmanın önemi vurgulanmaktadır. Alzheimer hastalığı ve zihinsel engelli 73 yaşındaki erkek hasta, temizleme lavmanı uygulandıktan sonra akut perineal ağrı geliştirdi. Kapsamlı bir klinik muayene yapıldı ve laboratuvar testleri gerçekleştirildi. Kontrastlı bilgisayarlı tomografi de yapıldı. Hasta, Hartmann prosedürü içeren acil laparotomiye alındı, ardından aşamalı perineal-inguinal debridmanlar yapıldı. Hastanın klinik seyri, hastanede kaldığı süre boyunca titizlikle izlendi. Görüntüleme, perine, hemiskrotum ve inguinal kanalda perirektal serbest hava ile birlikte yaygın subkutan amfizem olduğunu ortaya çıkardı, bu da rektal perforasyonu işaret ediyordu. Ameliyat sırasında, rektumun 12 saat pozisyonunda 1 cm'lik tam kalınlıkta bir perforasyon tespit edildi. Hartmann prosedürü uygulandı, ardından ilerleyen nekrotizan fasiit nedeniyle üç aşamalı debridman yapıldı. Yara, ameliyat sonrası 18. günde primer olarak kapatıldı ve hasta stabil durumda taburcu edildi. Lavman kaynaklı rektal perforasyonun, özellikle zayıf kabul edilen yaşlı hastalarda yaygın olarak görülen fulminan Fournier gangrenine yol açabileceğini belirtmek önemlidir. Erken BT değerlendirmesi, hızlı dışkı yönlendirmesi ve seri debridman, başarılı sonuçlar için gereklidir. Klinik hekimlerin, lavman prosedürü uygulanan savunmasız hastaları tedavi ederken yüksek farkındalık düzeyini korumaları zorunludur.

Anahtar kelimeler: Rektal perforasyon, Lavman, Fournier gangreni, Nekrotizan fasiit, Hartmann prosedürü

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INTRODUCTION

Cleansing enemas are widely used for bowel preparation and constipation management; however, they may rarely result in traumatic or hydrostatic injury to the rectum, particularly in elderly, debilitated, cognitively impaired, or immobilized patients (1). Mechanical mucosal trauma from the enema tip, reduced anorectal compliance, impaired sphincter tone, and excessive intraluminal pressure have all been implicated in the pathogenesis of enema-induced perforation (1,2). Although rectal perforation is uncommon, several case reports have highlighted its occurrence in frail individuals with chronic constipation or limited mobility (3,4). When perforation occurs, extraluminal contamination may rapidly spread through the perineal fascial planes, potentially evolving into Fournier gangrene an aggressive necrotizing fasciitis associated with significant morbidity and mortality (5,6). Published reports demonstrate that early computed tomography (CT), prompt surgical intervention, faecal diversion, and staged debridements are essential for favourable outcomes (1–6). Here, we report an enema-induced rectal perforation in a frail elderly male complicated by rapidly progressive Fournier gangrene, managed successfully with the Hartmann procedure and multiple debridements.

CASE REPORT

A 73-year-old male patient with Alzheimer's disease, intellectual disability, severe immobility, and chronic constipation suddenly experienced severe perineal pain after receiving a cleansing enema. The patient’s caregivers observed restlessness within minutes and noted that he could not articulate his symptoms due to cognitive impairment. According to the patient's caregivers, the patient became restless within minutes and was unable to articulate his symptoms due to cognitive impairment.

A physical examination revealed marked perineal tenderness and palpable crepitus extending towards the suprapubic region and left inguinal canal. A digital rectal examination was performed, resulting in significant discomfort without any bleeding.

Laboratory tests demonstrated leukocytosis and elevated inflammatory markers. Contrast-enhanced CT revealed extensive subcutaneous emphysema of the perineum, left hemiscrotum and left inguinal canal, with perirectal free air suggesting rectal perforation (Figure 1).

Emergency laparotomy found a full-thickness 1-cm perforation 3 cm above the anal verge at the rectum's 12 o'clock position (Figure 2). Contamination spread to the perineal, scrotal, and left inguinal areas (Figures 3–4). Hartmann procedure with sigmoid resection, rectal stump closure, and colostomy was done. Due to extensive necrotising fasciitis, the patient underwent staged debridements on postoperative days 1, 3, and 6. By day 14, healthy granulation tissue allowed primary closure on day 18. The patient was discharged in stable condition.

Figure 1. Axial CT demonstrating extensive subcutaneous emphysema involving the perineum, left hemiscrotum, and left inguinal canal.

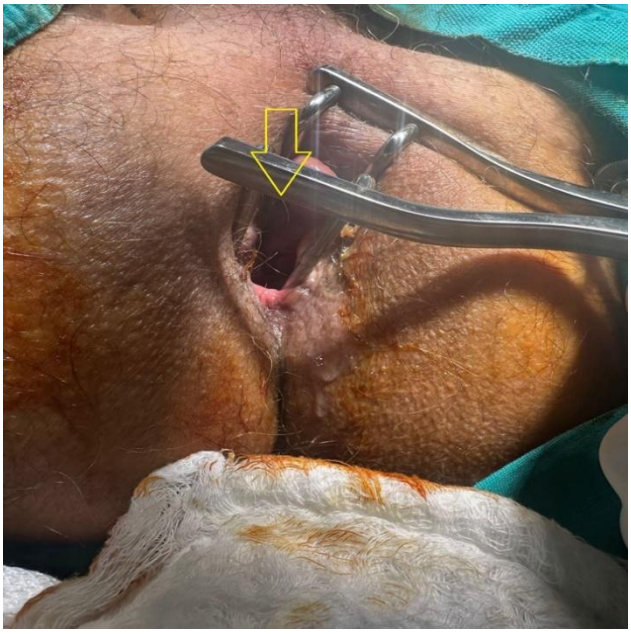

Figure 2. Intraoperative appearance of a 1-cm full-thickness rectal perforation at the 12 o'clock position, approximately 3 cm above the anal verge.

Figure 3. Intraoperative view of widespread necrotizing fasciitis involving the perineal and scrotal regions requiring extensive surgical debridement

Figure 4. Inguinal extension of necrotizing fasciitis observed during surgical debridement.

DISCUSSION

Enema-induced rectal perforation is uncommon but has been reported in elderly, immobile, and cognitively impaired patients (1). Lee et al. showed that standard cleansing enemas can cause full-thickness rectal tears in those with fragile mucosa (1). Anwar et al. (2) emphasized the combined roles of mechanical trauma and hydrostatic pressure in causing perforation. This patient had multiple risk factors: advanced age, immobility, and chronic constipation.

Once perforation has occurred, the progression of necrotizing fasciitis can be rapid. Kerem et al. described rapid fascial spread after phosphate enema use (3), while Liang et al. reported similar gas propagation patterns mimicking Fournier gangrene after rectal injury (4). The CT findings closely mirrored these presentations. Incorrect enema technique has been demonstrated to contribute to anorectal necrosis (5).

Fournier gangrene represents a surgical emergency, with mortality rates ranging from 20% to 40%. Eke reviewed 1,726 cases and underscored the importance of prompt, assertive surgical intervention (6). Sorensen et al. confirmed that delayed debridement significantly increases mortality (7). Chawla et al. and Başoğlu et al. demonstrated that repeated surgical debridement proves effective in extensive necrotising infections (8, 9).

In this case, we employed a management strategy that included early CT, urgent laparotomy, Hartmann diversion, and staged debridement, consistent with evidence-based recommendations (1–9). This approach led to successful recovery.

CONCLUSION

Coronary perforation is a fatal complication. The balloon or stent balloon used in interventions should not be inflated without making sure that it is positioned in the coronary lumen. If it is inflated without being sure of this positioning, a coronary rupture may develop as a result. The steps to manage this complication are the rapid closure of the perforated area, the administration of protamine sulfate, graft-coated stent placement, and if necessary, emergency surgery. It should be kept in mind that coronary rupture is a potential complication in balloon and stent

interventions, treatments needed for coronary perforation should be known well, and the necessary equipment should be available in the catheter laboratory during the entire procedure.

When administering enemas in elderly or debilitated patients, clinicians should exercise extreme caution. Use gentle insertion techniques with adequate lubrication, avoid excessive pressure, and monitor the patient throughout the procedure and after. Consider alternative bowel management strategies in frail or cognitively impaired individuals to prevent iatrogenic perforation or subsequent infection.

Informed Consent: Written informed consent was obtained from the patient for the publication of the case report and the accompanying images.

Author Contributions: Conceptualization - Cagri Akalin, Abdullah Cirakoglu, Mumin Demir; Surgical Procedure - Cagri Akalin, Abdullah Cirakoglu, Nurullah Kadim; Data Curation – Cagri Akalin, Nurullah Kadim; Investigation - Cagri Akalin, Seray Aydin; Literature Review - Seray Aydin, Gökhan Zaim Visualization - Cagri Akalin, Mumin Demir, Seray Aydin; Writing Original Draft - Cagri Akalin, Gökhan Zaim; Writing Review & Editing - Cagri Akalin, Abdullah Cirakoglu; Supervision - Cagri Akalin, Abdullah Cirakoglu, Gökhan Zaim

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