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Case Report

A case of Meleney's abdominal gangrene in Madras Medical College

Vinayak Rengan[1], Vinodh Duraisami[2]*, Chetna Ravindra[3], Karthik Muralidharan[4]

Department of General Surgery, Institute of General Surgery, Madras Medical College, Chennai, Tamil Nadu, India

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***Correspondence:**
Dr. Vinodh Duraisami,
E-mail: donvinodh@yahoo.co.in

ABSTRACT

A 57 years old male who was a known case of type 2 diabetes presented with a swelling over the left lower abdomen and groin. The patient appeared toxic and local examination revealed discoloration of size 8x6 cm over the groin with a 1×0.5 cm sized ulcer over it accompanied by a seropurulent discharge. A clinical diagnosis of necrotizing fasciitis was made and investigations revealed an elevated blood sugar, white count and creatinine with cultures showing a poly-microbial growth. Emergency debridement under IV sedation was done and subsequently patient underwent daily debridement and dressing in addition to antibiotics and adequate glycemic control. This condition is a surgical emergency and early diagnosis is crucial for improved prognosis. Aggressive surgical debridement is the first line treatment followed by specific antibiotic therapy.

Keywords: Diabetes mellitus, Abdominal gangrene, Sero-purulent discharge, Poly microbial growth

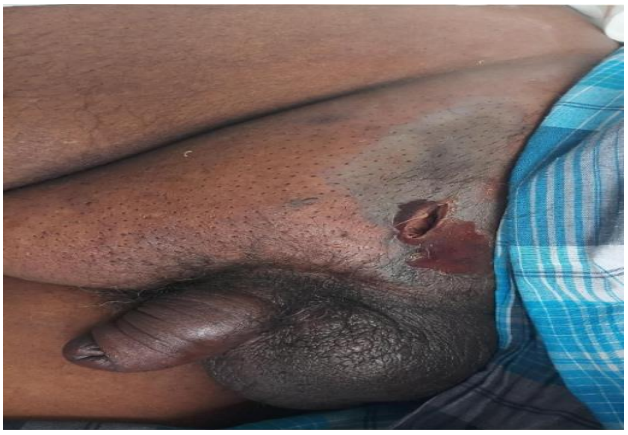
INTRODUCTION

Meleney's gangrene is a rapidly destructive infection involving the skin and the subcutaneous tissue and in severe cases the deep fascia. First described by Dr. Meleney and Dr. Brewer in 1926 its microbial effectors were further classified by Meleney in 1931.[1] The mortality as a result of Meleney's gangrene is almost 34%. Meleney's ulcer or postoperative synergistic bacterial gangrene is a rare form of abdominal wall gangrene but has well documented clinical entity. It develops following intra abdominal surgery in the immediate vicinity of the surgical wound. It is caused by the synergistic interaction between microaerophilic nonhemolytic *Streptococcus* and hemolytic aerobic staphylococcus aureus.[2] Meleney's ulcer or post-operative synergistic bacterial gangrene is a rare form of necrotizing infection of the abdominal wall which develops following intra-abdominal surgery. If not promptly identified and treated, it can lead to extensive gangrene leading to fatal complications.[3] We report a case of Meleney's gangrene with superadded aspergillosis which rapidly progressed to gangrene of a large area of the anterior abdominal wall leading to mortality of the patient.

CASE REPORT

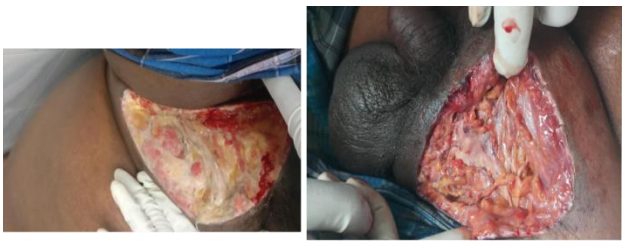
A 57 years old male presented with a swelling over the left lower abdomen and groin for 2 days. The patient was a known case of type 2 diabetes on regular treatment with oral hypoglycemic agents. There was no history of trauma or previous surgeries. On examination, the patient was febrile, dehydrated and tachycardic. Local examination revealed a tender discoloration over the left iliac fossa and groin of size 8×6 cm and an ulcer of size 1×0.5 cm over it with undermined edges (Panel A) and foul smelling seropurulent discharge. Other regions of the abdomen were soft and non-tender. External genitalia, scrotum, and perianal region were found to be normal. A clinical diagnosis of necrotizing fasciitis was made. Initial investigations showed a random blood sugar of

356 mg/dl, blood urea of 61 mg/dl, serum creatinine of 2.1 mg/dl and a total count of 19000/µl. A wound culture and sensitivity revealed the polymicrobial infection. An abdominal ultrasound showed subcutaneous air pockets and ruled out intraperitoneal involvement. The patient was offered emergency debridement under Intravenous sedation (Panel B). All necrotic tissue was removed and the patient was treated in the post-operative ward with intravenous antibiotics and adequate glycemic control Patient's total count and renal parameters normalized over the next few days. Daily debridement and a sterile dressing were done and wound status continued to improve. The patient was discharged after 17 days with a healthy wound and normal blood work. Patient came for follow up after 30 days which revealed a healthy wound and a normoglycemic status.



PANEL A

Figure 1: Local examination of tender discoloration over the left iliac fossa and groin.



Panel B

Figure 2: Cut open of infected site shows mass lesions.

DISCUSSION

Necrotizing fasciitis is spreading inflammation of the skin, deep fascia and soft tissues with extensive destruction, toxemia commonly due to mixed infections caused by anaerobes, coliforms, and gram-negative organisms.[4] Diabetes, drug addiction, alcoholism, obesity, malnutrition, tumors, immunodeficiency, and other chronic medical conditions are important predisposing factors.[5] Hippocrates first described necrotizing fasciitis as early 5th century BC. Fournier later in 1883, described Necrotizing Fasciitis in the genital and perineal regions, and Meleney reported the first involvement of abdominal wall in 1926. Wilson proposed the term necrotizing fasciitis in 1952.[6] Meleney's gangrene is known to be progressive synergistic gangrene, representing a polymicrobial infection in which microaerophilic streptococci flourish with *Staphylococcus aureus*. Meleney demonstrated this synergy by noting the formation of the typical gangrenous lesion when both of the organisms were injected into the skin of dogs. Neither organism was capable of forming such a lesion when injected alone.[7] Meleney's ulcer usually begins as a small, superficial ulcer following trauma or surgery. It may also arise from infected lymph nodes. Meleney's ulcer primarily represents an infection of the subcutaneous tissue leading to small-vessel thrombosis followed by subcutaneous necrosis.[8] The condition is a surgical emergency. Early diagnosis is absolutely crucial for improved prognosis, and this is usually on the basis of clinical means. Aggressive surgical debridement is the first line of management of necrotizing fasciitis; followed by specific antibiotic therapy.[9] Excision of all necrotic fascia and non-viable skin and subcutaneous tissue is mandatory. This has to be repeated as often as is necessary due to the rapid spread of the necrosis. The involved tissue usually extends beyond the obviously visible margins; thereby requiring debridement well into the healthy area. Frequent postoperative dressing changes and wound inspections are recommended.[10]

CONCLUSION

Unfortunately, many signs of meleney's gangrene are initially overlooked which leads to unnecessary higher mortality. In the post-surgical patient, signs of sepsis wound dehiscence and discharge at the operative site may suggest Meleney's gangrene. The essence of treatment lies in aggressive debridement and good antibiotic cover. Healthcare providers at the periphery should be made aware of this condition for its prompt recognition and diagnosis.

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