

Fournier's Gangrene Associated with SGLT-2 Inhibitor Use

M. Creedon¹, C. O' Gorman², C. McDonnell³, E. McNamara¹, B. Boyle^{1,4}

1. Department of Clinical Microbiology, St. James's hospital.
2. Department of Gynaecology, St. James's hospital.
3. Department of Radiology, St. James's hospital.
4. Trinity College Dublin.

Abstract

Presentation

A 62-year-old female with a background of well controlled type 2 diabetes mellitus (T2DM) reported vulval pain and swelling, progressing rapidly over 24hours.

Diagnosis

A diagnosis of Fournier's gangrene was made. The patient was receiving a Sodium-glucose Cotransporter-2 (SGLT-2) inhibitor, which have recently been found to be associated with Fournier's gangrene.

Treatment

Urgent debridement was performed, and broad-spectrum antimicrobials were commenced. The SGLT-2 inhibitor was discontinued indefinitely.

Conclusion

Fournier's gangrene is a medical emergency. Physicians should be aware of the association between SGLT-2 inhibitors and Fournier's gangrene.

Introduction

We report the case of a 62-year-old female with a background of T2DM who developed Fournier's gangrene. The patient was receiving a SGLT-2 inhibitor for diabetes, a class of antihyperglycaemics which have recently been found to be associated with Fournier's gangrene.

Case Report

This 62-year-old female was admitted to our tertiary hospital for management of sternal wound dehiscence post coronary-artery-bypass-grafting. Her background history was otherwise significant for T2DM which was well controlled with a recent HbA1C of 46 mmol/mol.

On day two of admission, the patient reported severe pain in the groin. Following gynaecology review, the patient was diagnosed with a vulval abscess and commenced on intravenous flucloxacillin. Over the next 24 hours, the patient deteriorated with septic shock requiring transfer to ICU for vasopressor support. Swelling in the vulva had extended to the perineum with evolving necrosis. Computed tomography showed extensive subcutaneous emphysema within the perineum consistent with Fournier's gangrene (see Fig 1). Antimicrobials were escalated empirically to intravenous ceftriaxone, clindamycin and vancomycin. Urgent extensive debridement was performed in theatre, and a VAC dressing placed.

The patient returned to theatre every 48 hrs for wound review until day 21 post-operatively. Intraoperative specimens cultured mixed anaerobic organisms and *Candida glabrata*. Antimicrobial treatment was rationalised to IV piperacillin-tazobactam and anidulafungin and continued for 21 days total. The patient was discharged from ICU to the ward after 19 days.

On admission to ICU the patients medications were reviewed, and it was noted she was receiving empaglifozin, an SGLT-2 inhibitor, which had been commenced over two years previously. Following endocrinology input, empaglifozin was discontinued indefinitely.

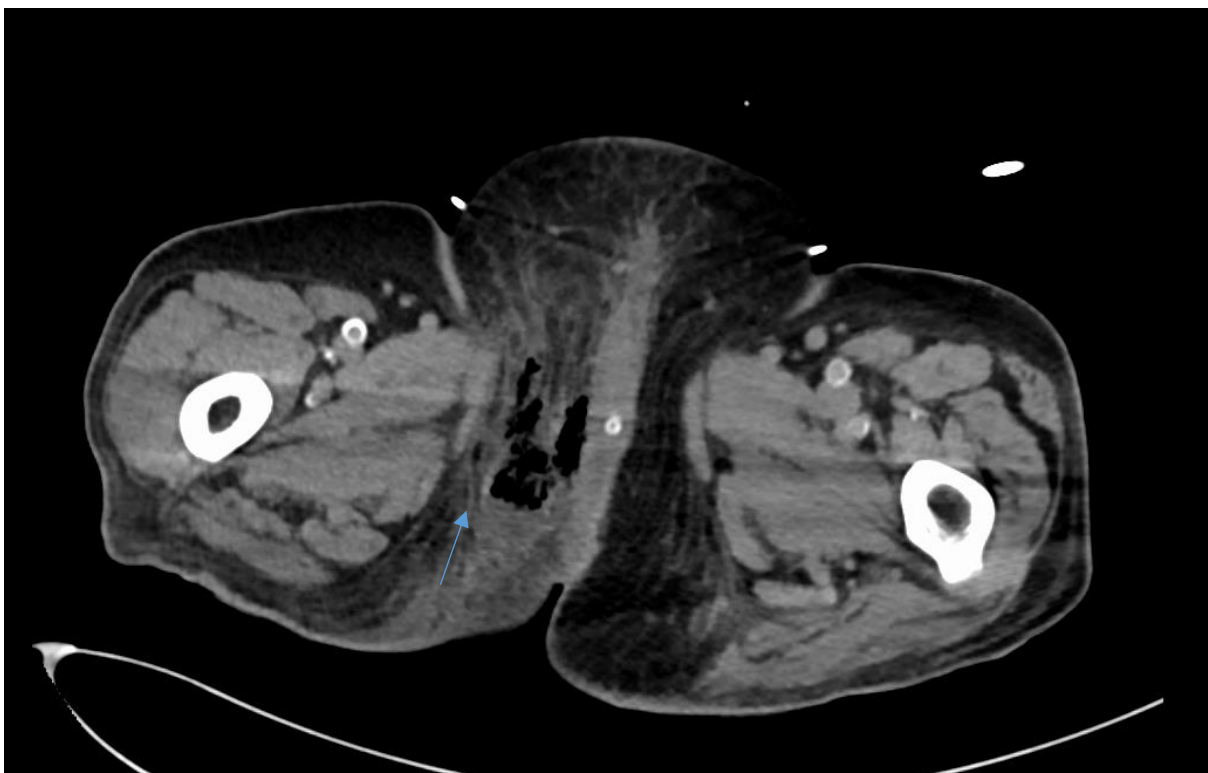


Fig 1: CT scan showing extensive subcutaneous emphysema within the perineum.

Discussion

Fournier's gangrene is a severe form of necrotising fasciitis involving the genitals and perineum. Mortality is high at 20-30%¹. The infection is usually polymicrobial, with causative pathogens including *Streptococcus* sp, anaerobes and *Enterobacterales*². Management involves fluid resuscitation, broad spectrum antimicrobials which include anaerobic cover, and urgent debridement.

Diabetes mellitus, alcohol excess, elevated BMI and local trauma are known risk factors for Fournier's gangrene³. More recently, an association with SGLT-2 inhibitor use has been recognised⁴. SGLT-2 inhibitors are a relatively new class of antihyperglycaemics which act by promoting renal excretion of glucose. Likely as a result of glycosuria, they are associated with an increased risk of vulvovaginal candidiasis, and urinary tract infections⁵. It is unclear how SGLT-2 inhibitors increase the risk Fournier's gangrene, but it may be related to the effect of prolonged glycosuria on tissues.

To our knowledge this is the first reported case of Fournier's gangrene associated with SGLT-2 inhibitor use in Ireland. When prescribing SGLT-2 inhibitors, physicians should counsel patients that they are at increased risk of urogenital infections. Physicians should be aware of the association between SGLT-2 inhibitors and Fournier's gangrene, and SGLT-2 inhibitors should be stopped indefinitely if Fournier's gangrene occurs.

Corresponding Author:

Dr Margaret Creedon,
Microbiology SpR,
St. James's hospital.
E-Mail: margaretrcreedon@gmail.com.

Declaration of Conflicts of Interest:

None declared.

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