CASE REPORT

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Necrotizing Fasciitis of the Perineum (Fournier's gangrene) with Diabetes Mellitus on Empagliflozin (Jardiance)

ABSTRACT

One of the more recent medications, empagliflozin (Jardiance), is used to treat Type 2 diabetes linked to an uncommon but potentially fatal genital illness known as necrotizing fasciitis of the perineum Fournier's gangrene (FG). We describe a case of an elderly man who had FG and necrotizing fasciitis of the perineum while taking the diabetes medication empagliflozin (Jardiance) for 4 years. A *Pseudomonas* infection occurred in this patient. Carbapenem-resistant Enterococci in the perineum necessitated a diversion colostomy, extensive debridement, and sphincter reconstruction. A novel family of medications used to treat Type 2 diabetes includes empagliflozin. It is linked to FG; an uncommon but deadly genital infection termed necrotizing fasciitis of the perineum. A combination of aerobic and anaerobic microbes invading the layer of tissue immediately beneath the skin in the perineum – the region between the anus and scrotum in men, and the anus and vulva in women – causes FG, a rare necrotizing fasciitis of the perineum and genitals. Most often, infections start in the skin, urethra, or rectal areas. We describe a patient who developed FG while receiving treatment with empagliflozin.

Key words: Empagliflozin, Necrotizing fasciitis, Diabetes, Perineum

INTRODUCTION

We report the case of an elderly man who, while using the diabetic drug empagliflozin (Jardiance) for four years, developed necrotizing fasciitis of the perineum and FG. This patient had an infection with pseudomonas. The perineum's carbapenem-resistant Enterococci required sphincter repair, a diversion colostomy, and significant debridement. Empagliflozin is a member of a unique class of drugs used to treat Type 2 diabetes. Necrotizing fasciitis of the perineum, a rare but fatal genital infection, is associated with it. FG, a rare necrotizing fasciitis of the perineum and genitalia, is caused by a mix of aerobic and anaerobic microorganisms that invade the layer of tissue directly beneath the skin in the perineum, or the area between the anus and vulva in women and the scrotum in males. The epidermis, urethra, or rectal regions are where infections most frequently begin. We report on a patient who experienced FG while on empagliflozin therapy.

CASE REPORT

A 64-year-old man with a history of Type 2 diabetes mellitus, presented with pain and swelling in the perineum and groin with fever for a few days. The patient was on empagliflozin for diabetes control for the past 4 years. These symptoms started 15 days before the presentation and were progressive. The pain had no relieving factors and would get aggravated with movement. Patient was not an alcoholic or a smoker. There was no significant past medical or surgical history. There was no history of trauma, genital instrumentation, or recent travel.

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The patient was hemodynamically stable, aware, and oriented on assessment. He had some minor dehydration. He exhibited a consistent 110/min heartbeat with good volume. His heart rate was 120/78 mm Hg. A systemic analysis found no anomalies.

A patch of foul-smelling eschar with edema and discomfort around the anus was discovered during a local examination of the perineum. The perianal area was covered in patchy gangrene and had foul-smelling purulent discharge. The diagnosis of Fournier Gangrene (FG) was established proviso. The patient was revived and an examination was done.

We started broad-spectrum antibiotics such Ceftriaxone (2 g Q every 12 h), Metronidazole (500 mg Q every 8 h), and Amikacin (500 mg Q every 12 h). For an urgent

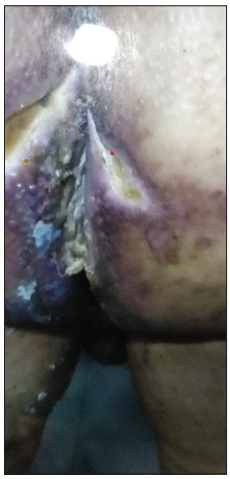

Figure 1: Initial-Infected-Perineal-Ulcers

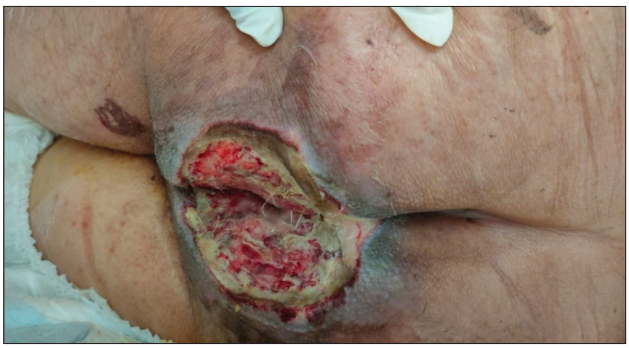

Figure 2: Wound-after-1st-Debridement

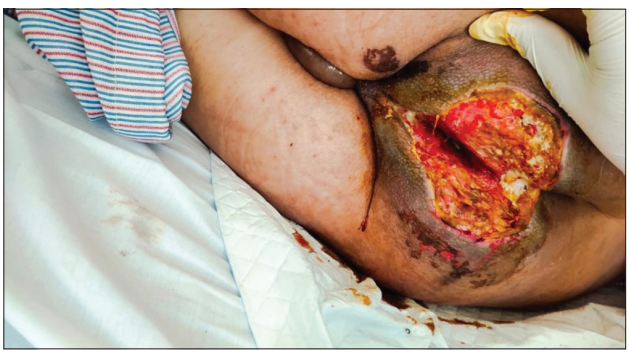

Figure 3: Wound-after-5-days-of-debridement

surgical debridement, he was ready. The hemogram showed hemoglobin of 7.1 g%, a leukocyte count of 29230/L, and platelet count of 169 k/L. The random blood sugar was 217 mg/dL. The blood urea nitrogen was 38 mg/dL and serum creatinine 1.24 mg/dL. The serum Sodium-138.0 mEq/L, Potassium – 3.85 mEq/L, Chloride-101.8 mEq/L. The HBsAg, HCV, and HIV were negative. Total protein 4.87 mg/dL, albumin 2.3 mg/dL, globulin 2.3 mg/dL, bilirubin (Direct) – 0.304 mg/dL, bilirubin (Indirect) – 0.12 mg/dL, alkaline phosphatase138 U/L, S.G.P.T (alanine transaminase) – 30.00 U/L S.G.O.T (aspartate aminotransferase) 29 U/L GGTP (Gamma GT)-58.0 U/L, prothrombin time –15.9 s with INR-1.53. He was taken to the operating room, for urgent debridement where surgical findings were of a 7 cm gangrenous patch on the perianal region with complete involvement of the anal canal and external anal sphincter. Laparoscopic-assisted diversion colostomy was done to prevent an impending large bowel obstruction and to promote healing of the perineum along with extensive debridement of necrotic and dead tissue. An intraoperative tissue culture sample was obtained which grew carbapenem-resistant Klebsiella pneumonia organism and was sensitive to colistin, amikacin, and tigecycline.

Due to intermittent severe bleeding after each surgical debridement and anemia from a longstanding illness, the patient required repeated packed RBC units during surgical care. In addition, he received a parenteral nutrition infusion for calorie support.

DISCUSSION

FG is a serious surgical problem with high mortality and morbidity.[1] Although there is a male predominance[2] and covering a wide age range (18–87 years).[3] Alcoholism, liver or kidney failure, cancer, obesity, and smoking are known risk factors.[4] However, it is interesting to note that in almost 30–50% of cases, no definite predisposing factor is found.[1] The most frequently isolated species in FG include *Escherichia coli*, *Streptococcus*, *Bacteroides*, *Enterococcus*, *Pseudomonas*, *Corynebacterium*, *Klebsiella pneumoniae*, and *Candida albicans*. Early surgical debridement disease is associated with high mortality and a prolonged stay in intensive care, and the diagnosis is typically made based on the clinical findings, though imaging methods such as computed tomography are occasionally used. In the nearly 6 years since the drug's FDA approval, from March 2013 to January 2019, 55 incidences of FG were discovered among patients undergoing sodium-glucose cotransporter-2 (SGLT2) inhibitor therapy, according to recently released data analysis. The FDA Adverse Events Reporting System database was utilised.[5] According to one study, FG occurs in 15 cases for every 100,000 people taking SGLT2 inhibitors.[6] All commercially available SGLT2i, with the exception of ertugliflozin (perhaps due to the latter medication's recent commercial availability), have been linked to FG. In the aforementioned 55 individuals, it took 9 months from the commencement of treatment until FG manifested itself. It is thought that an initiating event permitting entry of the causative microorganism(s) into the host tissue is significant in its development, even though the precise mechanism of SGLT2 inhibitor-associated FG is unknown.[5]

CONCLUSION

This instance demonstrates a rare but dangerous and potentially fatal side effect that affects patients taking SGLT2 inhibitors.

Physicians who prescribe these drugs should be aware of this potential side effect and have a high degree of scepticism so they can spot it as soon as it manifests. Patients with risk factors for the condition should consider the advantages of receiving treatment with SGLT2i, especially if they are going to have any type of urological intervention.

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