CLINICAL VIGNETTE

MSSA Cellulitis and Abscess as a Complication of the Use of Continuous Glucose Monitoring

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Background

Continuous glucose monitoring (CGM) in type 1 and type 2 diabetes mellitus has resulted in significant patient benefit.[1-4] Benefits include lower HbA1c and better management of hypoglycemic episodes.[3,4] Continuous-sensing technology allows monitoring of the percentage of time spent with good glycemic control.[2] This percentage of glycemic time-in-range (%TIR) improves compliance and success of long-term diabetic management. In some patients, especially inpatients, continuous glucose monitoring or POC glucose may be superior to HbA1c for monitoring longer-term glycemic control.[5] Inclusion of continuous monitoring helps ensure good glycemic control associated with a lower-complication profile.[6]

While continuous glucose monitors are generally considered safe, continuous glucose monitor implantation may be associated with limitations and risks.[7,8] These include increasing reports of serious infections such as necrotizing fasciitis since use of these devices became more frequent in recent years. Risks for skin-related infections is an underestimated concern. We report a patient who developed an MSSA skin abscess at the site of implantation of a CGM device.

A 66-year-old male with controlled type 2 diabetes mellitus, hypertension and coronary artery disease was started on continuous glucose monitoring. He continued to use CGM and several months later presented to the ED with progressive left arm pain and swelling two days after self-implanting a CGM device, FreeStyle Libre™ FGM system (Abbott Diabetes Care, IL, USA). ED presentation occurred after two urgent care visits. He was initially prescribed cephalexin with no improvement and returned and was admitted to hospital with worsened symptoms. Ultrasound in the ED confirmed an abscess measuring 0.6 x 1.3 x 2.2 cm which was incised and drained. The patient did not have fever and was generally feeling well other than arm pain. Laboratories included normal WBC count but worsened glycemic control. Fasting glucoses ranged from 140-227 mg/dL during the hospitalization. Prior to this infection, he had excellent glyemic control with HbA1c of 6.2% and fasting glucoses ranging 88-132mg/dL. His antibiotic regimen was expanded and wound cultures grew Methicillin-Sensitive Staphylococcus Aureus (MSSA). He was discharged after three days on oral doxycycline. He continues to use CGM with aseptic technique.

The patient was not immunocompromised and had had well controlled diabetes. There were no other risk factors for developing a complicated local infection. He continues to use CGM and has no subsequent skin infections.

Despite the advances and convenience of implantable glucose monitoring devices, CGM-related skin infections are rare complications. The incidence remains unclear but can be a barrier to adoption. Patients with diabetes are at higher risk of infections even when their glucose is well controlled. They should be educated on sterile techniques with use of CGM implantable devices to minimize infectious complications.

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