

CORRESPONDENCE

Fournier's gangrene in a COVID-19 patient with multiple comorbidities: Combatting the triple threat

Dear Editor,

The coronavirus disease 2019 (COVID-19) pandemic has made a striking impact on healthcare services [1]. During the first wave of the pandemic numerous elective surgeries were cancelled to provide more hospital beds and staff to treat an increasing number of patients infected with COVID-19 [2]. However, emergency procedures were exempt since they cannot be cancelled or postponed. The management of surgical patients undergoing emergency surgery requires special precautions to avoid morbidity and mortality [3,4]. Additional precautions must be taken to protect healthcare personnel and surgical staff against contraction of COVID-19.

When COVID-19 patients with multiple medical comorbidities present in an emergency setting with a highly morbid and possibly fatal infection associated with septicaemia, this combination represents a triple threat that needs to be addressed in a meticulous and careful manner. The present report describes the management of a high-risk patient with such a triple threat who was managed at our hospital and, despite the high odds of mortality due to his serious condition, the patient was able to survive.

The patient is a 52-year-old man with a body mass index of 38.7 kg/m², a smoker, has type II diabetes mellitus and essential hypertension complicated by end stage renal disease, and he has a history of stroke. The patient was not vaccinated against COVID-19. He presented to the emergency department with a 2-day history of tenderness at the left buttock area. Associated symptoms included high grade fever (38.3°C), malaise, cough and shortness of breath. On admission, the patient had tachycardia with a pulse of 116bpm, elevated blood pressure and a normal temperature of 37.3°C. The oxygen saturation was 98% in room air. Complete blood count revealed a low haemoglobin level of 12.2 g/dl and highly elevated total leucocyte count of 31.9. Screening for COVID-19 was positive.

The patient was admitted and underwent an urgent examination under anaesthesia. Digital rectal examination did not reveal any fluctuance or crepitus. There was no blood or pus inside the rectum. Upon inspection of the perineum, an extensive bulge was noted over the left buttock area that extended somewhat to the perineum immediately below the base of the scrotum. There was a central area of focal skin necrosis with palpable fluctuation. A diagnosis of Fournier's gangrene was made and excision with wide debridement of all necrotic skin, subcutaneous tissue, fascia and muscle was performed. On the third day of admission, the patient was taken again

to the operating room for a second examination under anaesthesia. Few sparse, moderately ischaemic areas of the subcutaneous fat were found and repeat debridement of the remaining necrotic and infected tissues was carried out; then a vacuum-assisted wound dressing and a ConvaTec Flexi-Seal rectal tube were placed.

The patient's condition improved allowing transfer from the intensive care unit on day 5. A third examination under anaesthesia was done on day 6 and minimal to moderate ischaemic areas of the subcutaneous fat were found; further debridement of necrotic tissues followed and a diverting colostomy was created. A final examination under anaesthetic was performed 2 weeks after admission and revealed sparse areas of superficial necrosis of subcutaneous tissue especially over the left aspect of the anal canal and rectum that required minimal debridement of necrotic tissue.

Over the course of his admission, his temperature ranged between 36.3 and 37°C and total leucocyte count dropped to 15.6 3 days after the first operation. Despite the positive COVID status, the patient did not need ventilatory support and the oxygen saturation was 98% or above. The total hospital stay was 22 days, and the patient developed a negative COVID status on day 10 after admission. The wound vacuum-assisted closure was changed six times during admission and a clean healing wound was verified before discharge (Figure 1). No complications related to surgery or COVID-19 were recorded. On the 18th day after discharge, the patient attended the clinic for follow-up and had a clean, granulating wound, as shown in Figure 2.

Some important aspects of the current report need to be emphasized. First, the patient was not vaccinated against COVID-19, and while this status might have increased the risk of pulmonary complications and mortality in the patient [5] it did not. However, contraction of COVID-19 in this non-vaccinated patient may have increased the severity and spread of sepsis secondary to Fournier's gangrene owing to the molecular changes potentially induced by the immunosuppressive virus. Specifically, the tight junction impairment in the early stage of COVID-19 may promote the spread and severity of sepsis [6].

Second, there are measures that can be taken in COVID-19 patients that may prevent its progression to a more severe form. A 3-day course of remdesivir may lower the risk of hospitalization or death in early COVID-19 by 87% [7]. Also, monoclonal antibodies may prevent progression of mild to moderate COVID-19 to a severe disease. Early treatment for COVID-19 with SARS-CoV-2 neutralizing antibody sotrovimab was able to reduce the risk of progression of COVID-19 that led



FIGURE 1 Perineal wound after surgical debridement and vacuum-assisted closure



FIGURE 2 Clean and granulating perineal wound on the 18th day after discharge

to hospitalization or death by 85% [8]. None of these measures, apart from regular monitoring of the oxygen saturation and blood gases of the patient, was used in this report, perhaps because these measures were not warranted based on the initial parameters of the patient, including a normal oxygen saturation that was continuously stable.

Finally, the strict use of personal protective equipment, providing a separate pathway to manage COVID-19 surgical patients as formerly recommended [9], and the use of evidence-based precautions

all ensured the protection of the theatre staff and the team taking care of the patient.

In conclusion, despite the higher morbidity and mortality expected for COVID-19 comorbid patients undergoing emergency surgery, all efforts must be made to address the acute condition while taking appropriate measures to prevent transmission of infection to the healthcare staff.

CONFLICT OF INTEREST

None to be declared by the authors.


AUTHOR CONTRIBUTIONS

Emanuela Silva-Alvarenga performed the procedure, collected the data and revised the manuscript. Sameh Emile wrote the manuscript. Steven Wexner critically revised the manuscript.

ETHICAL APPROVAL

A written informed consent for the publication of this record was obtained from the patient.

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