Case Report

Covid-19 and Plastic Surgery: a case report of complex wound treatment

Covid-19 e cirurgia plástica: relato de caso de tratamento de ferida complexa

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ABSTRACT

Introduction: The Covid-19 pandemic significantly changed the routine and work of medical specialties. We report the case of a patient treated by Plastic Surgery who contracted the Sars-CoV-2 virus. **Case report:** A 66-year-old man with a complex wound on his ankle was treated with surgical debridement and negative pressure therapy, and subsequently underwent cutaneous wound coverage with a partial skin graft. In the immediate postoperative period, a dry cough started. That same day a positive examination of the new coronavirus was confirmed in another patient who was in the same room. Therefore, we requested PCR testing, which was also positive for the presence of Sars-CoV-2. The patient evolved well, being discharged on the 5th postoperative day, after the removal of Brown's dressing, and returning after the recommended isolation period (14 days). **Discussion:** The management of patients who need surgical procedures during a viral pandemic must consider the adoption of preventive measures that reduce the possibility of transmission of the virus. As an example, we mention the reduction in hospital stay, the use of therapies that speed up the therapeutic process, the isolation of the patient on confirmed cases, and the use of personal protective equipment. **Conclusion:** Despite the infection of this patient by Sars-CoV-2, we emphasize that the Plastic Surgery team must act early during the treatment process. Such actions reduce the possibility of spreading the new coronavirus to other patients and the healthcare team.

Keywords: SARS virus; Plastic surgery; Coronavirus; Wounds and Injuries; Debridement

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■ **RESUMO**

Introdução: A pandemia decorrente da Covid-19 modificou de forma significativa a rotina e o trabalho das especialidades médicas. Relatamos o caso de um paciente tratado pela cirurgia plástica que contraiu o vírus Sars- CoV-2. **Relato de caso:** Homem de 66 anos, com ferida complexa em tornozelo, foi tratado com desbridamento cirúrgico e terapia por pressão negativa, sendo posteriormente submetido à cobertura cutânea da ferida com enxerto de pele parcial. No pós-operatório imediato, iniciou quadro de tosse seca, sendo que nesse mesmo dia havia sido confirmado um exame positivo do novo coronavírus em outro paciente que estava no mesmo quarto. Diante disso, solicitamos testagem com PCR que também resultou positiva para presença de Sars-CoV-2. O paciente evoluiu bem, com alta hospitalar no 5º dia de pós-operatório, após a retirada do curativo de Brown, e com retorno após o período de isolamento preconizado (14 dias). **Discussão:** O manejo de pacientes que necessitam de procedimentos cirúrgicos em meio a uma pandemia viral deve considerar a adoção de medidas preventivas que reduzam a possibilidade de transmissão do vírus. Como exemplo, citamos a redução do tempo de internação hospitalar, o uso de terapias que aceleram o processo terapêutico, o isolamento do paciente em casos confirmados e o uso de equipamentos de proteção individual. **Conclusão:** Apesar da infecção deste paciente pelo Sars-CoV-2, enfatizamos que a equipe de cirurgia plástica deve atuar de maneira precoce durante o processo de tratamento. Tais ações reduzem a possibilidade de disseminação do novo coronavírus para outros pacientes e para equipe de saúde.

Descritores: Vírus da SARS; Cirurgia plástica; Coronavírus; Ferimentos e lesões; Desbridamento.

INTRODUCTION

The pandemic resulting from the new respiratory syndrome called Covid-19 has significantly changed the routine and work of all medical specialties around the world[1-4]. Among them, Plastic Surgery was also affected, so that the Brazilian health authorities recommended the postponement of elective surgeries, maintaining the treatment of urgent or emergency cases, such as burns, complex wounds, skin tumors, among others. Even with this restriction, it is clear that all the patients treated are exposed to contracting the new Sars-CoV-2 coronavirus in the health unit, either in the hospital or on an outpatient basis[5-8].

In this article, we report the case of a patient treated by the Plastic Surgery team at Hospital das Clínicas, Ribeirão Preto Medical School, University of São Paulo (HCFMRP-USP), who contracted the Sars-CoV-2 virus during hospitalization, discussing the outcome and consequences of this new experience.

CASE REPORT

It was a 66-year-old man from Orlândia-SP, admitted by the Vascular Surgery team at HCFMRP-USP on 03/25/2020 due to a complex wound in the left posterior ankle, of arterial etiology, with three months of evolution (Figure 1A). As comorbidities, he had type 2 diabetes mellitus and smoking (40 pack-years). On physical examination, he had a femoral pulse present and distal pulses absent on the left, despite good perfusion. During arteriography, obstruction of the left tibiofibular trunk was diagnosed, and treatment with posterior femorotibial bypass was indicated and performed on 03/30/2020. The next day, the Plastic Surgery team was called in to help with wound management. Right after discussing the case, on the same day, we performed surgical debridement (Figure 1B) followed by negative pressure therapy (NPT) to speed up the preparation of the wound bed (Figure 1C).

The patient progressed well, requiring only one TPN exchange. On 04/06/2020, the skin was covered

Figure 1. A: Wound on the posterior left ankle. **B:** Wound bed after surgical debridement. **C:** Preparation of the wound bed with negative pressure therapy. **D:** 5 days postoperative skin grafting to cover the wound with satisfactory graft integration and epidermolysis areas.

with a partial skin graft, with a donor area of the left thigh, and a Brown dressing. Due to the absence of confirmed cases of Sars-Cov2 in the vascular surgery ward, until then, the care of the health team was restricted to face mask and procedure gloves. In the immediate postoperative period, the patient started a dry cough. On the same day, it was confirmed the diagnosis of Sars-CoV-2 virus in another patient who was in the same room as the patient in question. Therefore, we carry out the notification of a suspected case, proceed with the isolation of the patient in a specific bed, and the adoption of individual protection measures, with the use of "face shield," surgical gown, use of goggles, in addition to the face mask. At the same time, we requested a chest X-ray, Sars-CoV-2 testing, and a complete blood count.

On 4/8/2020, the RT-PCR test was positive for the presence of Sars-CoV-2, the chest radiograph showed bilateral veiling in the base, and the blood count showed no changes. The patient evolved well, without fever and other respiratory complaints. On the 5th postoperative day, we removed the Brown dressing and verified functional integration of the skin graft, despite the presence of areas of epidermolysis (Figure 1D). The patient was discharged from the hospital on the same day with instructions for daily home dressing at home by the patient's family members (after guidance by our team regarding the use of protection) and return after the recommended isolation period (14 days).

DISCUSSION

The management of patients who need surgical procedures during a viral pandemic must consider the adoption of preventive measures that reduce the possibility of transmission of the virus[7-8]. As an example, we quote:

- minimize the length of hospital stay;
- use of therapies that accelerate the therapeutic process;
- isolation of the patient on confirmed cases;
- use of personal protective equipment (patient and health team).

In this report, we highlight that the Plastic Surgery team sought to act early in all phases of the process, reducing the patient's exposure due to the hospitalization itself, and reducing the possibility of transmission after the diagnosis. As soon as it was requested, we performed the service on the same day and started treatment with surgical debridement and TPN. We opted for the use of TPN to speed up the preparation of the wound bed until the definitive surgery (skin grafting)[9-10]. Furthermore, it was possible to discharge the patient on the same day as the dressing was removed, and the skin graft integration was verified.

Due to the possibility of infection with the new coronavirus in the hospital environment, we should follow the guidelines of the authorities and only perform urgent or emergency surgeries during the Covid-19 pandemic.

CONCLUSION

Despite the infection of this patient by Sars-CoV-2, we emphasize that the Plastic Surgery team must act early during the treatment process. We opted to use technology to speed up the preparation of the wound bed (TPN), isolate the patient after diagnostic confirmation, perform individual protection care, and shorten the hospital stay with the use of TPN, grafting, and early discharge. As a consequence, we believe that such actions have reduced the possibility of spreading the new coronavirus to other patients and the health team.

COLLABORATIONS

HOCG Analysis and/or data interpretation, Conception and design study, Data Curation, Final manuscript approval, Writing - Original Draft Preparation, Writing - Review & Editing

PSC	Analysis and/or data interpretation, Conceptualization, Final manuscript approval, Supervision, Writing - Original Draft Preparation, Writing - Review & Editing
VGS	Analysis and/or data interpretation, Data Curation, Final manuscript approval
DHH	Analysis and/or data interpretation, Data Curation, Final manuscript approval
GMAS	Analysis and/or data interpretation, Data Curation, Final manuscript approval
JAFJ	Analysis and/or data interpretation, Conception and design study, Final manuscript approval, Project Administration, Supervision, Writing - Review & Editing

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