





**Figure 2** Purpuric rash of a knee.

bruises, and transient livedoid eruptions. Currently, there are few reports about the possible dermatological manifestations of COVID-19; we need more experience to confirm and better understand skin involvement.

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## Improvement of SARS-CoV-2 symptoms following Guselkumab injection in a psoriatic patient

Dear Editor,

We read with great interest the publication of <sup>1</sup> reporting the first case of SARS-CoV-2 infection in a young patient of 32-

year-old suffering from psoriasis and psoriatic arthritis treated by Guselkumab, a monoclonal antibody that targets specifically the p19 subunit of interleukin (IL)-23.<sup>2</sup> The patient contracted the SARS-CoV-2 infection after a dinner with some friends but fortunately she developed very discrete symptoms including only mild fever and rhinorrhea. These findings support the potential role of IL-23p19 inhibitors to counteract the “cytokine storm” triggered by the SARS-CoV-2 and which is potentially implicated in the severity of the symptoms.<sup>3</sup> In some patients, this immune response against SARS-CoV-2 is too exaggerated which may cause acute respiratory distress syndrome and end organ failure but the precise mechanisms underlying the progression from mild to severe complications are still under investigation.<sup>3</sup> Interestingly, the cytokine profile associated with SARS-CoV-2 infection severity is characterized by increased levels of tumour necrosis factor  $\alpha$ , IL-1, IL-2, IL-6, IL-7, granulocyte colony-stimulating factor, interferon (IFN)- $\gamma$  inducible protein 10, monocyte chemoattractant protein 1 and macrophage inflammatory protein 1- $\alpha$  among others.<sup>4</sup> Several clinical trials are ongoing to investigate the efficacy of systemic therapy combining an antiviral drug associated to a biologic drug that targets pro-inflammatory cytokines which may represent an attractive therapeutic option for SARS-CoV-2 infection.

We describe the case of a 40-year-old lady suffering from psoriasis since 2000. She is treated by guselkumab since January 2019 with complete clearance of her psoriasis. She was previously treated by conventional systemic treatments for psoriasis including methotrexate and cyclosporine. She is also suffering from Ehlers–Danlos syndrome but has no other comorbidity. On 3rd March, she was in contact with her sister and nephews who were all infected by SARS-CoV-2. On 9th March, she presented symptoms of SARS-CoV-2 infection with severe cough associated to myalgia, fatigue and fever (39.4°C). She reported a rapid worsening of her respiratory symptoms with shortness of breath and despite the use of paracetamol, the fever did not decrease. She administered her guselkumab injection scheduled for March 16. Surprisingly, the day after the injection, she reported a major improvement of her respiratory condition, a normalization of her body temperature and a progressive relief of myalgia and fatigue symptoms.

By targeting the IL-23p19 subunit, guselkumab does not increase the risk for viral, bacterial or fungal infections among psoriasis patients.<sup>5</sup> IL-23 does not seem to be essential for controlling virus clearance but may play a role in the deleterious hyperinflammatory state associated to severe symptoms. Viral clearance seems to be more depending on other cytokines such as IL-15, type I IFN and IFN- $\gamma$ .<sup>6</sup>

In addition to the case reported by <sup>1</sup> our present observation strongly supports the need to identify patients who will develop an hyperinflammation during the SARS-CoV-2 infection and to recommend the use of existing and approved biologic therapies to taper down the immune reaction in order to reduce the

mortality. Further investigations are required to validate our hypothesis and to help for the establishment of guidance concerning the use of biologics during SARS-CoV-2 infection.<sup>7</sup>

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## SARS-CoV-2 possible contamination of genital area: implications for sexual and vertical transmission routes

To the Editor

The severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) is responsible for a pandemic that is causing thousands of deaths worldwide. The virus can be transmitted from person to person, directly or indirectly, via the respiratory, oro-faecal and probably sexual routes.<sup>1</sup> The eventual vertical transmission route is still poorly explored. However, mother-to-child SARS-CoV-2

transmission through the placenta probably does not occur, or likely occurs very rarely.<sup>2</sup> All the studies conducted on COVID-19 pregnant women involved patients undergoing caesarean section, but the indications for such delivery modality were not clearly stated. Rather, according to the actual recommendations, the choice of the type of delivery should be based on the usual obstetric indications, as there is no clear benefit of delivery via caesarean in COVID-19 women.<sup>3</sup> Nevertheless, it is unclear whether SARS-CoV-2 transmission can happen during vaginal birth. The collaboration between venereologists and gynaecologists is priceless in the management of pregnant women affected with infectious, sexual transmissible disease, as known in case of genital herpes, condylomatosis or gonorrhoea.<sup>4</sup> So, given the lack of clear indications to guide physicians in choosing the delivery modality during COVID-19 pandemic, we propose a decision algorithm that takes into account the possible SARS-CoV-2 routes of transmission (Fig. 1). Thus, we recommend to perform routinely reverse transcription polymerase chain reaction (RT-PCR) assays for SARS-CoV-2 detection at least on three swabs in each patient: nasopharyngeal, vaginal and rectal. Even in absence of respiratory symptoms, fever or personal history of contacts with established COVID-19 cases, all pregnant women should be tested for SARS-CoV-2 infection. However, the nasopharyngeal swab cannot be sufficient to exclude the infection. Indeed, COVID-19 patients can persistently result positive on rectal swabs even after nasopharyngeal testing negativization.<sup>1</sup> Then, a rectal swab should be always carried out. Moreover, if SARS-CoV-2 can be detected in the faeces, it is necessary to consider the possibility of a perineal contamination, including the vulvar–vaginal area. So it appears clear the need to perform a vaginal swab too. Notably, if the nasopharyngeal, vaginal and rectal swabs resulted all negative for the virus, a serological test could also be carried out in case of strong clinical suspicion. To the best of our knowledge, no study has been conducted to evaluate the presence of SARS-CoV-2 at rectal level in pregnant women, whereas very few studies have researched the virus in the vaginal fluid at or after caesarean delivery in COVID-19 women, without detecting the virus.<sup>5</sup> Thus, we suggest to choose the caesarean delivery in case of positivity for SARS-CoV-2 on vaginal or rectal swab, whereas the natural delivery could be permitted if both vaginal and rectal swabs test negative for the virus (Fig. 1). Natural delivery has several advantages over caesarean section, including less chance of maternal bleeding, infection and mortality and lower risk of future placental insertion pathologies. The main purpose of our algorithm is to allow, where possible, the natural childbirth during the COVID-19 pandemic. More studies are needed to clarify SARS-CoV-2 transmission routes in order to further support physicians in the obstetric management of pregnant women in COVID-19 era.

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