



## Letter to the Editor

## Temporal and spatial concomitance of exanthema and dysesthesia in a patient with SARS-cov-2 infection



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## To the editor,

We've read with interest the article by Liguori (Liguori et al., 2020) and the answer by Krajewski (Krajewski et al., 2020) and particularly the description of dysesthesia. We would like to add to these descriptions the case of another patient with dysesthesia while adding new elements in understanding the pathophysiology of these latter. Indeed, we observed a patient who simultaneously presented dysesthesia and a viral exanthema in the same skin areas.

The patient is a 50-years-old male without any past medical history who presented a fever of 38.2 °C and dry cough associated with myalgia. The SARS-Cov-2 infection was documented thanks to RT-PCR. On day 2 after the onset of disease, dysesthesia appeared acutely on his back, the back of both arms and the chest. Symptoms followed metameres (Proximal part of C7–C8 and from T2 to T9), were symmetrically distributed and had the same intensity in all areas. Sensations were increased by pressure and touch such as clothes, backpack, or movements of the car seat ... It was particularly true during the night while moving in bed. Symptoms were calmed down by warm such as shower or sweating but only for a short period. Interestingly, a slight exanthema was present in the same areas and only where neurological symptoms were present (Fig. 1 and Fig. 2). No treatment was given. Neurological manifestations and exanthema last for five days and progressively disappeared. Curiously, anosmia and dysgeusia appeared as the other neurological manifestations disappeared.



Fig. 1. Exanthema present on the back.

Apart one of the two patients reported by Krajewski (Krajewski et al., 2020) we found, in the literature, another patient who presented skin exanthema and paraesthesia (Tatu et al., 2020). However, no details about a potential link between skin eruption and neurological manifestations are given. Contrary to our case, it seems, that for the second patient described by Krajewski (Krajewski et al., 2020) neurological and skin manifestations were spatially dissociated.

Exact pathophysiology of exanthema during viral infection is not clearly known but antigens-antibodies complexes are widely reported as a potential explanation (Gupta et al., 2020; Mims, 1966). Dysesthesia is the consequence of peripheral nerve damage (Asbury and Fields, 1984) and could be in part in relation to small fibers inflammation (Levine, 2018). In our case, the metameric distribution advocates for a direct effect of the virus on neurological fibres in relation with its neurotropic characteristics (Liguori et al., 2020; Zhou et al., 2020). The concomitance (temporal and spatial) of skin and neurological manifestations let us think of local inflammation due to immune reaction against virus which could have led to exanthema and part of small fibers inflammation.

Other case of such manifestations could help understanding this



Fig. 2. Exanthema on the chest.

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complex disease with neurological and skin tropism, especially if skin biopsy could be performed.

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