CASE REPORT

Hepatitis C virus infection: 'beyond the liver'

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SUMMARY

There are rare reports of association between hepatitis C virus (HCV) infection and dermatomyositis although cause and effect remains to be proven. We present a clinical case with a probable cause and effect association between these two entities. A 71-year-old woman developed an erythematous exanthem with pruritic and scaly lesions located at the torso and upper limbs associated with heliotrope and Gottron's papules. At the same time, she noticed a significant loss of muscular strength. Skin and muscular biopsies made the diagnosis of dermatomyositis and the patient started with prednisolone (60 mg/day) with poor symptoms control. Paraneoplastic syndrome, HIV, hepatitis B virus and syphilis infections were excluded. HCV serology was positive, with a viral load of 58 159 IU/mL (genotype 1a). Therefore, the patient underwent a 12-week treatment with grazoprevir 100 mg and elbasvir 50 mg achieving a sustained virological response with regression of skin lesions and complete recovery of muscular strength (photodocumented before/after treatment). Additionally it was possible to reduce prednisolone dosage to 5 mg/day.

BACKGROUND

Hepatitis C virus (HCV) infection is associated with a large spectrum of extrahepatic manifestations that involve primarily the joints, muscle and skin.¹ Although a myriad of dermatologic diseases have been linked to chronic HCV infection, the evidence is weak except for the association with mixed cryoglobulinaemia, lichen planus, porphyria cutanea tarda and necrolytic acral erythema.^{2,3} Some rare reports of association between HCV infection and dermatomyositis have been described, however in none of them was established a clear and direct relation between these two entities.^{4–8} With this work we reinforce a cause and effect association between HCV infection and dermatomyositis by showing, for the first time, that obtaining sustained virological response (SVR) for HCV infection is preponderant in the control of skin and muscular symptoms of dermatomyositis.

CASE PRESENTATION

We present a case report of a previously healthy 71-year-old Caucasian woman without any relevant personal or family medical history. In July 2016, she developed an erythematous exanthem with pruritic and scaly lesions located at the torso and upper limbs (figure 1). Some weeks after, she presented involvement of the face and hands with heliotrope and Gottron's papules, respectively (figure 1). At

the same time she developed dysphagia and noticed a significant loss of muscular strength at the root of the limbs. At this point, skin and muscular biopsies were performed. The histological examination confirmed the diagnosis of dermatomyositis. Based on this result, the patient started a course of prednisolone (60 mg/day), with poor symptoms control. In this context, we excluded a paraneoplastic syndrome and infection by some important agents as HIV, hepatitis B virus and syphilis. Surprisingly, during this aetiological study, the serology of HCV turned out to be positive, with a viral load of 58 159 IU/mL (genotype 1a).

DIFFERENTIAL DIAGNOSIS

The majority of cases of dermatomyositis are idiopathic. However, in 15%–30% it is a manifestation of paraneoplastic syndromes of an underlying malignancy.⁹

TREATMENT

The patient was referred for hepatology consultation where she started a treatment with grazoprevir 100 mg and elbasvir 50 mg during 12 weeks, achieving an SVR.

OUTCOME AND FOLLOW-UP

After achieving SVR, the patient presented almost total regression of skin lesions (figure 2) and recovery of muscle strength. Additionally it was possible to reduce the daily dose of prednisolone from 60 to only 5 mg.

DISCUSSION

There are some rare and sporadic reports of association between dermatomyositis, HCV infection and even hepatocarcinoma. In literature, we can find this association in a case series of five patients by Fiore *et al* in 1996,⁵ and in isolated cases reported by Gomez *et al* in 1997,⁶ Kee *et al* in 2004⁷ and Toshikuni *et al* in 2006.⁸ In most of the cases of dermatomyositis, the diagnosis of HCV infection was incidental and not always coincident in time. In some of these cases, the use of immunosuppressive agents, such as steroid and azathioprine, improved skin and muscular symptoms but hepatitis C viraemia was noted to be persistent in these cases after the treatment. The authors of these reports suggest that dermatomyositis might have been caused by chronic HCV infection through an autoimmune mechanism. However, none of these reports showed a clear cause and effect association between these two entities: Was the HCV virus primarily the responsible for cutaneous and

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Figure 1 Torso exanthema and Gottron's papules before hepatitis C virus (HCV) infection treatment.

muscular manifestations of dermatomyositis? What would have happened with HCV virus cure? At the time of these reports, the treatment of C infection was not as effective as now and in none of them HCV infection was successfully treated. Thus, it was not possible to evaluate the course of dermatomyositis features after achieving SVR for HCV infection. Fortunately, we are now in a new era of direct-acting antiviral drugs that came to revolutionise the treatment of HCV infection with very high cure rates. The clear and marked improvement of skin lesions and muscular strength after HCV elimination in this patient strongly relates HCV and dermatomyositis. For the first time to our knowledge, we have shown that obtaining SVR for HCV infection was preponderant in the control of skin and muscular

Figure 2 Regression of skin lesions after hepatitis C virus (HCV) infection treatment.

symptoms of dermatomyositis. This new information reinforces a probable cause and effect association between HCV infection and dermatomyositis.

Learning points

- Dermatomyositis often manifests as a paraneoplastic syndrome of an underlying malignancy, so it is important to exclude a malignant tumour in the first instance.
- Chronic hepatitis C virus (HCV) infection should be considered as a cause of dermatomyositis, if there is no other aetiology found.
- Treatment of HCV infection, obtaining a sustained virological response, seems to be essential to control skin and muscular symptoms associated with dermatomyositis (viral and autoimmune pathogenesis).

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