

Reply to “Modified measles outbreak in vaccinated healthcare workers exposed to primary measles case”[☆]



Réplica a «Brote de sarampión-modificado en personal sanitario tras exposición a un caso de sarampión clásico»

Dear Editor,

Currently, identification of viral RNA using reverse transcription-polymerase chain reaction (RT-PCR) techniques is a fundamental procedure in measles surveillance. These techniques enable genomic analysis of the virus, which is very useful for epidemiological purposes. Serology nonetheless continues to play an essential role as it supplements molecular studies and can provide additional information on certain immunology-related patient characteristics. Determination of specific IgM has traditionally been considered a diagnostic marker in measles virus infection and recommended as a criterion for confirming cases. However, in populations with high vaccination rates, as the incidence of infection decreases, the positive predictive value of this determination drops, and false-positive results may be seen.¹ On the other hand, its sensitivity decreases in vaccinated individuals who naturally become infected when their immunoprotection decreases.² Investigation of specific IgG is also highly useful. It enables assessment of potential seroconversion, as well as prior virus exposure (both through the vaccine and in the wild). A study by Navalpotro et al.³ serves an excellent example of the use of detection of IgG and determination of avidity index to assess cases of measles in vaccinated individuals. This strategy has been proposed by other authors.⁴ In the series of nine secondary cases, all affected individuals were healthcare workers, and seven of them had a confirmed history of vaccination (with five of them having received two or more doses). No vaccination record was available for the other two affected individuals.³ However, judging by their age, they were most likely also immunised. Workers at healthcare centres, by the nature of their work, are at higher risk of becoming infected or reinfected with infectious agents such as the measles virus through interpersonal transmission. Measles outbreaks in vaccinated healthcare workers arise on occasion, and their characteristics are usually similar to those reported, with mild signs and symptoms and absent serum IgM levels in most cases.⁵ There are two types of vaccine failure: primary and secondary.⁶ Primary failure occurs when the subject does not develop a humoral response following immunisation. This type of failure may be due to various immunological causes (such as immaturity of the immune system or interference of maternal antibodies in infants) or vaccine-related causes (abnormalities in the preparation administered or a break in the cold chain). However, vaccine failure may also be due to factors in individual subjects associated with genetic polymorphisms that foster said failure.⁷ Secondary vaccine failure occurs when the patient does develop antibodies to the vaccine, but they lack protective activity against the wild strain. In cases of secondary vaccine failure, the type of immune response seen is typically a booster response with rapid increases and elevated levels of high-avidity specific IgG. However, there is no clearly established cut-off point for IgG titres that would identify this type of vaccine failure, and therefore detection of viral RNA is the method of choice for diagnosing these

cases. For this reason, it is important to stress the need to collect suitable samples for both serology and molecular detection in the first contact with the patient.⁸ In the nine cases reported,³ IgG levels corresponding to serological determination prior to contact with the index case were below the recommended level of positivity for the technique used (<200 mIU/ml). This could point to a situation of waning immunity following vaccination. It has been estimated that rates of vaccination with two doses should exceed 95% to prevent measles outbreaks.⁹ Unlike other European countries, Spain demonstrates evidence of having eliminated autochthonous measles transmission. However, according to the latest seroprevalence study conducted in Spain, between May 2017 and May 2018, the percentage of people vaccinated with two doses of the measles, mumps and rubella (MMR) vaccine born between 1987 and 1992 (who were 25–30 years old at the time of the survey) is only an estimated 82.3%. In that study, rates of IgG seropositivity were below 95% in people 10–39 years of age.¹⁰ It should be noted that, as the concept of secondary vaccine failure involves the possible presence of non-protective antibodies, the term ‘seropositivity’ should not be strictly interpreted to mean ‘seroprotection’. This indicates that occasional outbreaks from imported cases represent a real danger in Spain. In these situations, as recommended by the study that is the subject of this article,³ it is useful not only to confirm cases but also to assess immune status and investigate the possible occurrence of vaccine failure.

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Subacute thyroiditis after COVID-19 vaccination



Tiroiditis subaguda tras la vacunación con COVID-19

Dear Editor:

We would like to share ideas on the publication “Subacute thyroiditis after anti-SARS-CoV-2 (Ad5-nCoV) vaccine.¹” Rebollar reported a case and mentioned for possible clinical association between thyroid problem and COVID-19 vaccination.¹ Thyroid problem might be followed vaccination and the pathogenesis is still inconclusive. Regarding subacute thyroiditis, there are sporadic case reports in COVID-19 vaccine recipients.^{2,3} The observed thyroid abnormality might or might not be associated with vaccination. After vaccination, the abnormal thyroid function might occur and it is not related to any immunological abnormality.⁴ Hyperviscosity might occur after vaccination⁴ and it can result in an aberrantly thyroid function.⁵

Authors contribution

SY (50%): (1a) Substantial contributions to study conception and design. (1b) Substantial contributions to acquisition of data. (1c) Substantial contributions to analysis and interpretation of data. (2) Drafting the article or revising it critically for important intellectual content. (3) Final approval of the version of the article to be published.

VW (50%): (1a) Substantial contributions to study conception and design. (1b) Substantial contributions to acquisition of data. (1c) Substantial contributions to analysis and interpretation of data. (2) Drafting the article or revising it critically for important intellectual content. (3) Final approval of the version of the article to be published.

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Conflict of interest

The authors ask for waiving for any charge relating to this correspondence.

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Reply: Subacute thyroiditis after anti-SARS-CoV-2 (Ad5-nCoV) vaccine[☆]



Respuesta: Tiroiditis subaguda después de la vacuna anti SARS-CoV-2 (Ad5-nCoV)

Dear Editor,

Yasri and Wiwanitki's¹ letter on my case report² speculates as to the association between the COVID-19 vaccination, blood hyperviscosity and thyroid dysfunction. No pathophysiological relationship

between hyperviscosity and aberrant thyroid function has been reported. False thyroid hormone test results due to blood hyperviscosity should not be confounded with thyroid dysfunction.

Hyperviscosity caused by acellular components (proteins), which may be monoclonal or polyclonal, are a known cause of potential interference in thyroid immunoassays.³ These correspond to uncommon entities including: Waldenström's macroglobulinaemia, cryoglobulinaemia and multiple myeloma,⁴ as well as rheumatic diseases associated with high rheumatoid factor levels. Paraprotein interference in immunoassays used to measure thyroid hormone and thyroid-stimulating hormone (TSH) levels⁵ has been extensively and specifically studied; although false results are mostly reported in total thyroid hormone levels,^{3–6} any immunoassay used may be prone to interference. However, such interference is recognisable and does not indicate any thyroid function abnormality.

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