

Acute Posterior Multifocal Placoid Pigment Epitheliopathy Following Human Papilloma Virus Vaccination

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Financial interests: none

Background:

- Human papilloma virus (HPV) is the most common sexually transmitted infection, and plays an important role in the development of cervical cancer.
- Gardasil® (Merck & Co., Whitehouse Station, NJ), a quadrivalent HPV vaccine approved by the US FDA in 2006, has a preventive effect against HPV types 6, 11, 16, and 18.
- Gardasil® is recommended for women aged 9 to 26 years in three injections for the prevention of cervical cancer.
- As a HPV vaccine-related ocular complication, we report a case of acute posterior multifocal placoid pigment epitheliopathy (APMPPE) that developed after HPV vaccination.

Case Report:

A 31-year-old woman experienced sudden bilateral blurred vision and paracentral scotomas four days before visiting the hospital. The symptoms occurred two weeks after the second vaccination with quadrivalent HPV vaccine (Gardasil®), and she had no pain or cold symptoms. She denied any history of treatment or medication. Systemic evaluation including blood tests and chest X-ray was within normal limits. At initial visit, visual acuity was 20/20 in both eyes, and intraocular pressure was 12 mmHg in the right eye and 10 mmHg in the left eye. The anterior chamber cells were 2+ in the right eye and 1+ in the left eye, but the anterior vitreous was found to be clear. On fundus examination, multiple placoid yellow-whitish lesions were observed at the posterior pole, and fluorescein angiography showed early hypofluorescence and late hyperfluorescence with staining.

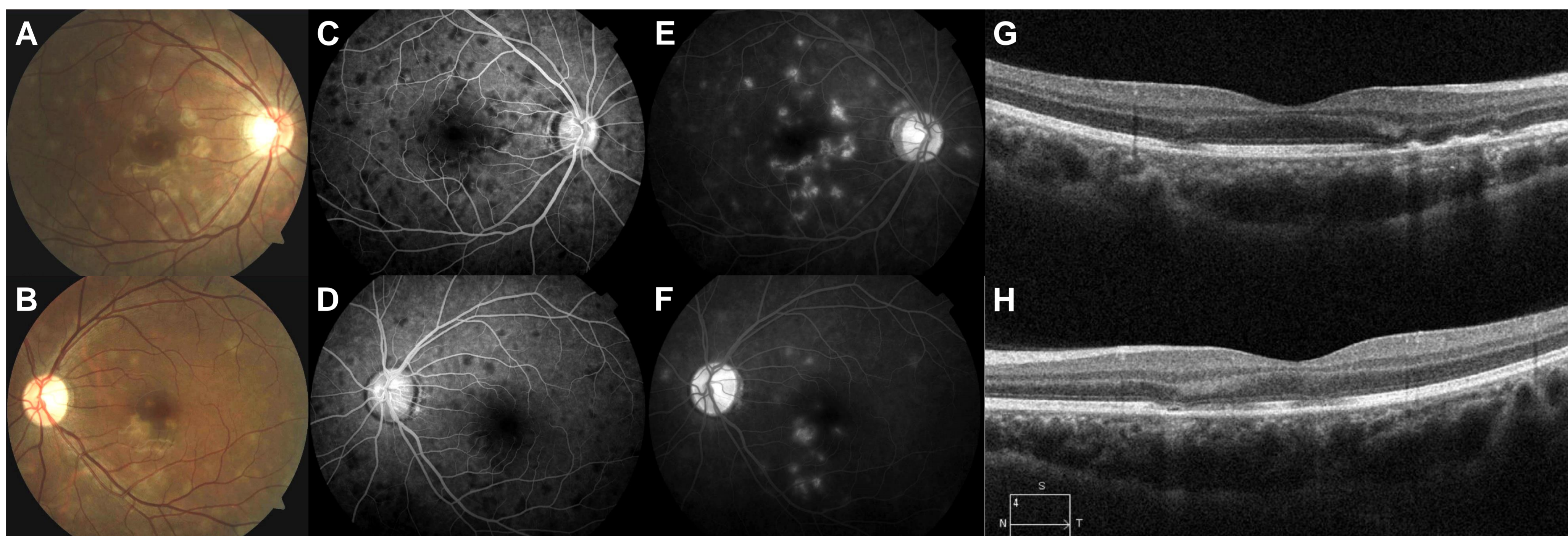


Figure 1: Fundus photographs, optical coherence tomography, and fluorescein angiography at the first visit. Multiple yellow-white placoid lesions scattered throughout the posterior pole in the right (A) and left (B) eyes are shown. Early hypofluorescence of the lesions (C and D) is noted while late hyperfluorescence with leakage of the lesions is seen (E and F). Hyperreflections and disruptions on the retinal pigment epithelium and ellipsoid zone corresponding to areas of yellow-white lesions are revealed (G and H).

Under a diagnosis of bilateral APMPPE, oral corticosteroid was used as treatment for two weeks, after which symptoms were resolved, anterior chamber cells disappeared, and lesions at the posterior pole markedly decreased. After five weeks, multiple hyperreflective areas on the outer retinal layers as well as missing photoreceptor and retinal pigment epithelial layers were almost recovered upon optical coherence tomography.

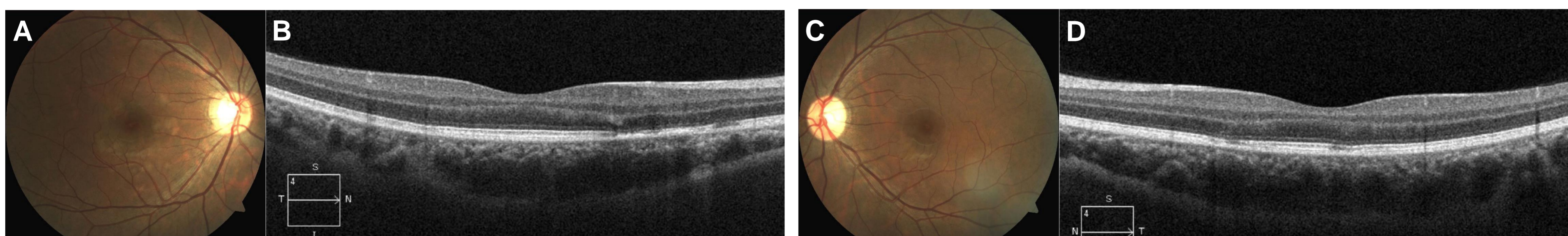


Figure 2: Fundus photographs and optical coherence tomography after five weeks. Mild pigmentary change is observed on the macula of the right eye (A), and multiple placoid lesions disappear (C). The disruptions of the retinal pigment epithelium and ellipsoid zone are partially recovered in the right (B) and left (D) eyes.

Comments & Conclusions:

- APMPPE has been reported after various vaccinations, including influenza vaccine, hepatitis B vaccine, and varicella vaccine. However, there have been no reported cases of APMPPE following HPV vaccination.
- We should be aware that the non-infectious uveitis such as APMPPE can rarely present after HPV vaccination.
- Molecular mimicry between HPV antigens and retinal self-proteins has been suggested as a possible mechanism of uveitis, but further studies are needed to understand whether HPV vaccine is a direct cause of uveitis.

References:

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