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BELL'S PALSY AFTER INFLUENZA VACCINATION IN AN 8-YEAR-OLD CHILD: CASE REPORT AND REVIEW OF THE EUROPEAN LITERATURE IN EUDRAVIGILANCE

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Abstract: Case report: In December 2021, we had the opportunity to treat an 8-year-old boy who developed a right facial palsy following Influenza vaccine. On 30th November, 2021, our patient received his first dose of Vaxigrip Tetra vaccine. On 28 December, 2021 , our patient received his second dose of VaxigripTetra Vaccine. On 29 December, 2021 (24 hours), he developed right facial pain with a House-Brackmann grade III facial palsy. The SARS-CoV-2 PCR test was negative in nasal swab, and IgG SARS-CoV-2 was also negative. Deflazacort (1.5 ml/Kg/day) and eye support were prescribed. Facial palsy began to improve four days after, and full recovery was achieved. **EudraVigilance report**: We reviewed the European database report of facial palsy or Bell's palsy for 3-11 years-old patients, looking for similar patients between 2021-2022. We collected 53 patients with facial palsy after drugs or vaccines between 2021-2022. Out of them, 41 facial palsy patients were developed after vaccines: 17 COVID-19 vaccine, 8 influenza (5 H1Vi pandemic vaccine) and 5 Papilloma Virus vaccine. **Conclusion:** Data from Eudravigilance suggests that vaccines play a role in etiopathogenetic of the Bell's palsy. Out of 53 children who developed a facial palsy after drug or vaccine in the last ten years, 77% were developed after vaccination. In this pandemic COVID-19 vaccination campaign, otolaryngologist must be alert on these nerve pathology in the paediatric population.

Keywords: facial palsy, vaccine, children, adverse reaction

INTRODUCTION

During the pandemic influenza A (H1N1) vaccination campaign in 2009, the relative risk of Bell's palsy (BP) after vaccination increased significantly. Now, during the SARS-CoV-2 pandemic, data from the Pfizer-BioNTech and Moderna SARS-CoV-2 vaccine trials suggest an imbalance in the incidence of BP after vaccination (seven cases) compared to the placebo group (one case). National pharmacovigilance agencies noted that a causal relationship between vaccines and BP cannot be excluded and consequently recommended strict pharmacovigilance for BP after vaccination in large populations.

The possible etiopathogenic mechanism of facial paralysis after vaccination is described in Figures 1 and 2.

METHODS

Case report and review of the European EudraVigilance database on facial palsy and Bell's palsy in children aged 3 to 11 years.

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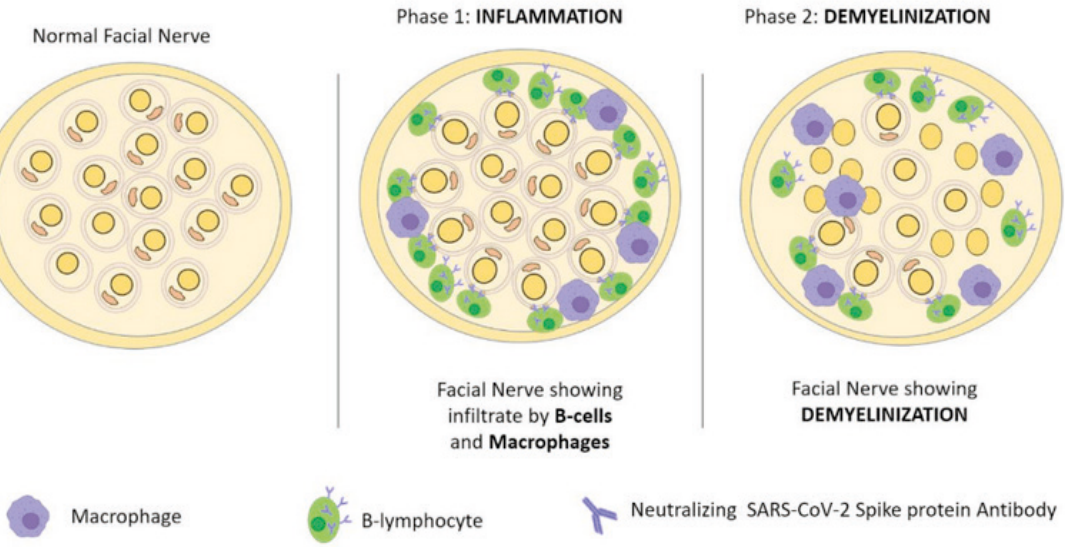

Pathogenic mechanism of Facial Paralysis by inflammatory mechanism.

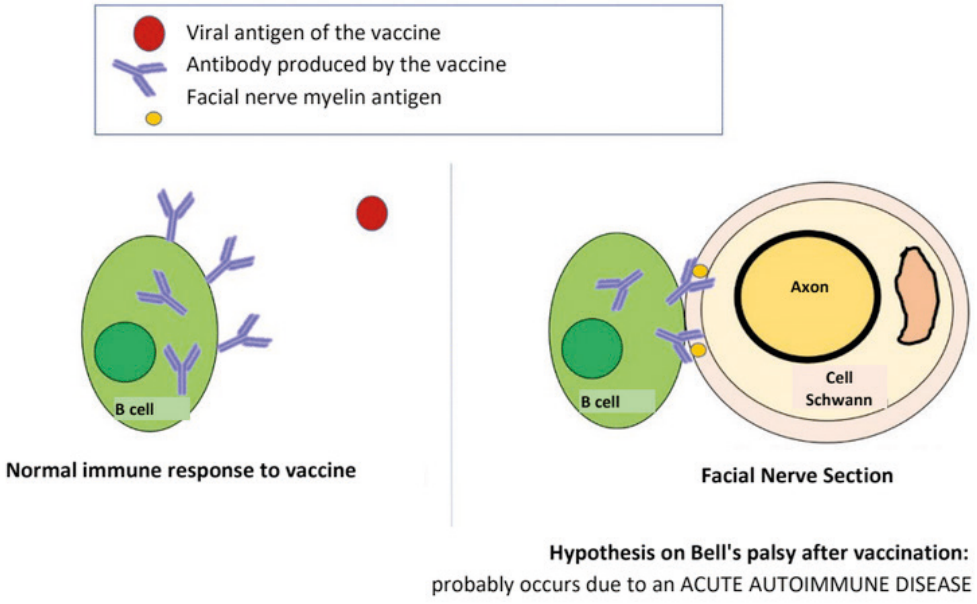

Figure 2. Autoimmune hypothesis of post-vaccine Facial Nerve Palsy.

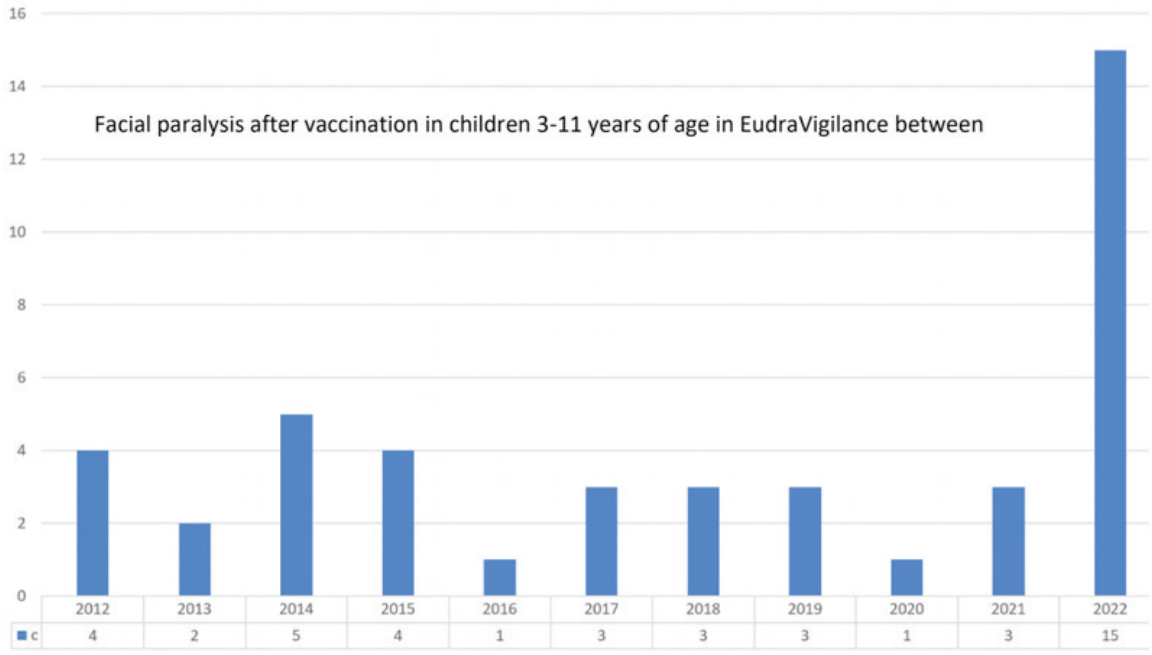

Figure 3. Facial paralysis in the EudraVigilance database of adverse drug reactions in children aged 3-11 years.

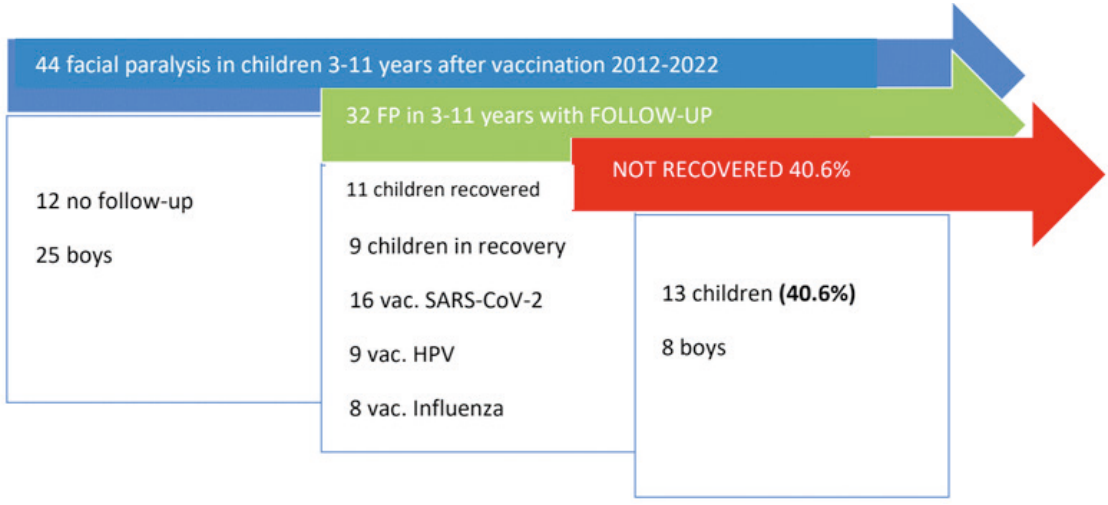

Figure 4. Evolution of Facial Paralysis in the EudraVigilance database in children aged 3-11 years.

RESULTS

A-. CLINICAL CASE

In December 2021, we had the opportunity to treat an 8-year-old boy who developed right facial paralysis following influenza vaccination. On November 30, 2021, our patient received his first dose of Vaxigrip Tetra vaccine. On December 28, 2021, our patient received his second dose of VaxigripTetra vaccine. On December 29, 2021 (24 hours), he developed right facial pain with House-Brackmann grade III facial palsy. SARS-CoV-2 PCR test was negative on nasal swab, and SARS-CoV-2 IgG was also negative. Deflazacort (1.5 ml/kg/day) and ocular support were prescribed. Facial paralysis started to improve four days later and full recovery was achieved.

B-. REVISION OF THE EUDRAVIGILACE DATABASE

We reviewed the European database report of facial palsy or Bell's palsy for patients aged 3 to 11 years, looking for similar patients between 2021 and 2022. We collected 53 patients with facial palsy after drugs or vaccines between 2021-2022. Of these, 41 patients with facial palsy developed after vaccines: 17 COVID-19 vaccine, 8 influenza (5 pandemic H1Vi vaccine) and 5 Papillomavirus vaccine.

CONCLUSION

Data from Eudravigilance suggest that vaccines play a role in the etiopathogenesis of Bell's palsy. Of 53 children who developed facial palsy after a drug or vaccine in the past ten years, 77% developed after vaccination. In this COVID-19 pandemic vaccination campaign, the family physician, pediatrician and otolaryngologist should be alert to these nerve pathologies in the pediatric population.

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