Case Report

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Orchitis following Mumps Vaccination in an Adult

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Abstract

An acute epididymo-orchitis, followed by a viral arthritis of the left hand, occurred as complications of a mumps vaccination. In the last 17 years 4 certain cases of orchitis following vaccination have been published in Germany. We describe an additional case and discuss the possible consequences.

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Introduction

Mumps is a contagious disease caused by an infection with a virus belonging to the paramyxovirus group. One of the possible complications is the development of a mumps orchitis in at least 18% of affected adolescents and adults [1].

The incidence of mumps has decreased since the introduction of a specific vaccination using live attenuated mumps virus. In Germany, these vaccines have been used since 1976. During the last 16 years, about 5.5 million vaccines with live attenuated virus of the Jeryl-Lynn strain (Behringwerke AG, D-3550 Marburg/Lahn, FRG) have been distributed [2]. In the same period, four certain cases of vaccination-related mumps orchitis have been published [3].

Case Report

A 30-year-old man presented to the emergency room with a history of gradually increasing pain in the left scrotum. On physical examination he had a swelling of the left epididymis. Both epididymis and testis were painful on palpation. Body temperature was higher than 38 °C. White blood cell count was not elevated and urinalysis was unremarkable. Scrotal ultrasound confirmed enlargement of the epididymis and testis. Besides a reactive hydrocele, no other pathologic changes could be detected. Testicular torsion was excluded by a ^{99m}Tc-DTPA nuclear scan.

We presumed bacterial epididymo-orchitis, the patient was admitted and treated with scrotal elevation, anti-inflammatory and antibiotic therapy. During the next 24 h, we observed a progressive testicular enlargement, with induration and tenderness. On specific questioning, the patient recalled he had received a vaccination with Pluserix® (Smith Kline Beecham Pharma

GmbH, Munich, FRG), a combined vaccine against measles, German measles and mumps, with live attenuated mumps virus of the Urabe Am 9 strain. He had received this vaccination almost 3 weeks earlier. By extended laboratory diagnosis, we were able to exclude infection with echovirus, Cox-sackie A and B, Enterovirus, para-Influenzavirus 1-3, measles and Chlamydia trachomatis. By exclusion of other infections and with increase of the specific IgM (1:180) and IgG (1:850) immunoglobulins, we could conclude upon a mumps epididymo-orchitis. Additionally, an elevation of IgG could be demonstrated (627 IU/ml), as well as slightly increased GOT (23 U/l) and GPT (24U/l). All other serum parameters were within normal limits.

Four days later, we observed a regression of the symptoms. Upon release from the hospital, both the hydrocele and the inflammatory reaction had diminished substantially.

Two days later he complained of a painful swelling of the meta-carpophalangeal joint of the left index finger and of the right ankle. Since a comprehensive rheumatism serology was completely normal, these findings were diagnosed as a viral arthritis and tendinitis of the peroneus muscle tendon, respectively, also caused by the the mumps

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vaccination. These symptoms disappeared completely with local antiphlogistic treatment.

Prior to these events, no sperm analysis had ever been done. However, the patient had fathered 2 children. Three months after regression of the symptoms, an ejaculate confirmed normozoospermia. Both testicles were painless and of normal consistency. The hydrocele had completely resolved and the size of the affected testicle had not decreased. The ultrasound pattern of the left testicle was slightly more hypoechogenic compared to the right side, but there were no intratesticular tumors, no major necrosis and no scarification.

Discussion

We encountered a unilateral epididymo-orchitis, as a rare complication of a vaccination with live attenuated virus of the Jeryl-Lynn strain (Behringwerke AG, Marburg/Lahn, FRG). By appropriate immunologic tests, we could rule out other possible causes of orchitis, e.g. infection with Coxsackie-A virus or parainfluenza virus [4]. Our patient presented with an isolated unilateral epididymo-orchitis. The inoculation apparently took place with vaccination against mumps, which is a rare event.

Obviously, our patient had a rapid relief of his symptoms under conservative treatment, and the clinical signs of his orchitis soon subsided. After 3 months, approxi-

mately the time interval for a sperm cell to transit the genital tract, analysis of his ejaculate showed normozoospermia. Also, there were no signs of progressive testicular atrophy. To prevent testicular atrophy following mumps orchitis, corticosteroids and interferon- α 2B have been administered in a small number of patients, with promising results [5]. However, at this time not enough evidence exists in favor of a general prophylaxis with vaccination.

Finally, the risk of an orchitis following vaccination in relation to the benefits should be addressed briefly. Epidemiological studies have shown that since the approval of live attenuated mumps vaccine, the incidence of mumps has decreased substantially. On the other hand, a relative underimmunization at the time the vaccine first became available has led to outbreaks of mumps in populations of college students. Apart from the individual complications and risks, the general health care costs were estimated at more than US \$ 32,000 for these outbreaks alone [6].

Consequently, mumps vaccination with live attenuated virus remains extremely important and the very rare complication of a mumps orchitis, despite a possible risk of testicular atrophy and male subfertility, should not change this concept. If the prevention of testicular atrophy by the prophylactic use of interferon- α 2B, is confirmed by a larger number of trials, its use in young adults who receive mumps vaccination should be advocated.

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