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Transient Synovitis of the Hip and SARS-CoV2. Temporality Study about One Case

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Introduction

The current coronavirus pandemic has first presented children as healthy, asymptomatic carriers but then cases were reported including severe forms [1]. However, some serious forms have been reported requiring admission to intensive care [2] with an association with Kawasaki disease [3,4].

Today the desire to broaden serological tests in the population makes it possible to identify IgG antigens specific to Sars-CoV2 by RT-PCR [5].

Thus we report today the case of a 10 year old girl without medical history. These two parents are healthcare professionals caring for patients who are positive for SARS-CoV2.

On March 15th (Day 0) the father 44 years old declares the first symptoms associating cough, headache, body aches, diarrhea, anosmia, aguesia and asthenia without fever. 10 day (Day 10) after the mother 41 years old declare the same symptoms with fever (39.5°c)

As a nurse at the university hospital, she benefited on April the 6th of an oropharyngeal swab finding a negative SARS-CoV2 RT-PCR (Real Star, altona Diagnostics)[6].

The day after the mother declared the first symptoms (Day 11) the 12 years old child declare a right hip lameness with a isolated fever episode (38.1°c), severe headache and cough.

When she arrived in the pediatric emergency department the clinical exam reveal a right hip pain without redness or clinical effusion with functional impotence.

Except the ENT symptomatology (including cough, rhinitis and headache), there were no digestive symptomatology, no

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aguesia, no anosmia. There were no movement abnormalities the other joints, he has no rash, no lymphadenopathy.

Investigations done in the emergency department found normal hip x-ray, peripheral white blood cell count (WBC's) of $4 \times 10^3/mm^3$ (normal range $5–10 \times 10^3/L$) with $1,5 \times 10^3/mm^3$ neutrophils. The serum C-reactive protein (CRP) was 4, 6 mg/L (normal, 0–5 mg/L).

An osteo-articular ultrasound was performed on the right hip finding an intra-articular effusion measured at 25 mm (N < 2 mm) [7].

A second physical examination was performed by a junior pediatric surgeon who confirm the reduction passive rank of motion associated with pain in hip flexion and internal rotation or external rotation.

Given the absence of fever measured in the emergency room and the normal biological results, the patient was authorized to return home with the diagnosis of acute transient synovitis.

A control biology was requested as well as a biological and clinical control three weeks later.

Given the absence of fever measured in the emergency room and the normal biological results, the patient was authorized to return home with the diagnosis of acute transient synovitis.

A control biology was requested 48 h after return at home and a specialized clinical and biological assessment on pediatric orthopedic consultation one month after according to the protocol in our Hospital.

At the specialized consultation in orthopaedic pediatric (Day 57).

The girl was re-examined by an orthopedic surgeon. There were no longer any osteo-articular symptoms, no lameness, the ranks of motion of the right hip were normal and comparable to the left hip, the girl was non febrile.

Control biology found white blood cells at 5, including 2 neutrophils with a CRP <0.5ng / mL.

A Sars-CoV2 serology that targets specific anti-S1 and anti-S2 IgG antibodies was requested and found the presence of IgG by chemiluminescence (CLIA), Diasorin, Liaison XL (value 98 U/mL, R < 12 negative, R>15 positif). Sensitivity and specificity are respectively 97.4% after 15 days and 98.9% (Diasorin).

The same day the mother was also tested positive with an Ig G value of 39,7 U/mL

At day 58 the father was also tested positive with an Ig G value of 25,6 U/mL.

Chronology of symptoms according to biological results are presented in Table 1.

Discussion

Concerning microbiology, chronology between symptoms onset and positive serology was in agreement with the literature. Indeed, IgG can persist beyond 7 weeks [8].

Despite of the lack of confirmation by RT-PCR in the family, and the mother's negative results which may explain by a decrease probability of detection by RT-PCR over time [8], and depends on the analytical quality of the sample, however the positive serology in the family shows us that they have been in contact with the Sars-CoV-2 and have developed post-infectious immunity.

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