We present a pediatric case of concurrent Wilson's disease and systemic lupus erythematosus (SLE). The patient was a 13-year-old male with a known history of Wilson's disease. The presentation included hemolytic anemia, thrombocytopenia, and leucopenia. His blood biochemistry showed hepatic cytolysis and hepatic cellular insufficiency. Wilson's disease was suspected due to unexplained liver impairment.

At that time, there was no neurological or ophthalmological involvement. The patient was found to have nephrotic syndrome, which could not be explained by Wilson's disease. SLE was evoked despite the fact that it was a child and male. The patient had a fever, no lymphadenopathy, no hepatomegaly, and splenomegaly. A family investigation revealed Wilson's disease with cirrhosis in a 9-year-old brother. The patient’s copper tests confirmed the diagnosis of Wilson's disease, and the kidney biopsy histopathology revealed lupus nephritis class II (WHO classification).

To our knowledge, this is the first report of an association between Wilson's disease and SLE. There were seven cases reported in the literature, with three children. The patient was started on therapy with bolus corticosteroids combined with pyridoxine and was treated with xychloroquine and Cooper chelation. Improvement in renal and even hepatic damage was noted. Copper tests were also ongoing.

We discussed the importance of diagnosing Wilson's disease at an early age to prevent the usual neurologic complication of Wilson's disease. The patient was expected to make a full recovery and be discharged in 4 days. The patient unit was visited 10 days post initiation of therapy with a history of inability to take medication. Methotrexate therapy was started at an initial dose of 25 mg to be taken weekly. The patient was later seen in the pediatric outpatient clinic with history of inability to take medication.

In summary, we report a case of Wilson's disease and SLE. The patient had nephrotic syndrome, which could not be explained by Wilson's disease. SLE was evoked despite the fact that it was a child and male. The patient had a fever, no lymphadenopathy, no hepatomegaly, and splenomegaly. A family investigation revealed Wilson's disease with cirrhosis in a 9-year-old brother. The patient’s copper tests confirmed the diagnosis of Wilson's disease, and the kidney biopsy histopathology revealed lupus nephritis class II (WHO classification).

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Objectives
To review the epidemiological, and bio-clinical, characteristics of a c-SLE case series.

Methods
The files of patients diagnosed as c-SLE in the pediatrics department of Monastir, Tunisia from January 2004 to March 2022 were reviewed. Mean and standard-deviation were used to express normally-distributed variables, as verified by the Kolmogorov-Smirnov statistical test.

Results
Fourteen patients were collected. Female to male ratio was 6:1. Mean ages at lupus onset and diagnosis were 9.9 ± 1.4 years, [5–13.8 years] and 10.75 ± 2.9 years [6–14 years] respectively. Only two children had a family history of autoimmune disease.

The initial admission was motivated primarily by skin and musculoskeletal manifestations, in 64.3% and 51.7% of cases, respectively. General signs (fever, asthenia) were observed in 35.7% of cases.

Hematological and gastrointestinal manifestations in 28.6% of cases each. In 3 cases, upper gastric endoscopy was performed prior to admission, in view of abdominal pain and vomiting.

The physical examination noted various abnormalities. Malar rash (50%) and discoid lupus (28.6%) were the most frequent cutaneous manifestations, while skin biopsy was performed in three cases, all in keeping with lupus. The musculoskeletal manifestations were arthralgia (71.4%), arthritis and myositis (14.3%). Hematological manifestations included thrombocytopenia and leukopenia in 4 cases, as well as 3 cases of auto-immune hemolytic anaemia and splenomegaly. Renal manifestations were proteinuria in 7, haematuria in 6, and hypertension in 2 (with renal failure in one of the patients). The renal biopsy that was performed in one subject showed a class 2 lupus nephritis. Pleural effusion was observed in 3, pneumonia in 3, pericarditis in 2, myopericarditis in 1 and central nervous system (CNS) lupus in 1.

Relevant results of the laboratory workup are illustrated in the following table:

| Laboratory test                  | Performed (%) | Abnormal results (%) |
|----------------------------------|---------------|----------------------|
| Erythrocyte sedimentation rate   | 14 (100%)     | 13 (92%)             |
| Antinuclear anti-bodies          | 14 (100%)     | 13 (92%)             |
| AntiDNA antibodies               | 7 (50%)       | 5 (71%)              |
| AntiSm antibodies                | 8 (62%)       | 5 (62%)              |
| Antiphospholipid antibodies      | 8 (57%)       | 5 (62%)              |
| Complement                       | 11 (78%)      | 9 (81%)              |

The formal diagnosis of SLE was established according to the ACR-1997 criteria in 7 cases (50%), the SLICC-2012 in 4 cases (28.6%) and EULAR/ACR-2019 in 3 cases (21.4%). The c-SLE diagnosis was associated with coeliac disease and Hashimoto thyroiditis in two of the subjects respectively.

The therapeutic management was based on corticosteroids in 11 cases, hydroxychloroquine in 3, while cyclophosphamides and immunoglobulin were used for two subjects respectively.

The outcomes were heterogeneous. Among 11 patients with sufficient follow-up, 6 cases of remission and 2 cases of relapse were noted. Major adverse events were not infrequent: one case each of cardiac tamponade, macrophage activation syndrome and severe CNS lupus were observed, all fatal.

Conclusion
Childhood-onset systemic lupus is a challenging disease, both to diagnose and to treat. The development of new criteria of higher specificity and sensitivity has greatly helped identify the incomplete types of lupus and allow for early-stage diagnosis, therefore preventing the serious complications of the disease.