Chronic headache revealing chronic infantile neurological cutaneous and articular syndrome

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INTRODUCTION

- Chronic Infantile Neurological Cutaneous and Articular syndrome (**CINCA**) syndrome is a rare autoinflammatory disease resulting from a mutation in the *NLRP3* gene.
- It is typically characterized by the **triad** of skin rash, arthropathy and central nervous system manifestations [1]

OBJECTIVE

- We report a rare case of a child diagnosed with CINCA syndrome revealed by chronic headache

OBSERVATION

- **11** year-old **Tunisian boy**
- First-degree consanguineous parents
- **Family history** : nothing to report
- **Personal history** :
  - Brief urticarial rash developed in the first hour of live
  - Sensorineural hearing loss diagnosed in the first year of life
- Normal psychomotor développement
- Five years old: progressive tightening headache, with nocturnal aggravation, without nausea or morning vomiting, and no associated visual signs

Examination :

- Mild intellectual disability
- Macrocephaly
- Frontal bossing, saddle back nose (figure 1)
- Persistent papilledema

- **Investigations** (table 1):

Table 1: Main Investigations

Brain MRI (figure 2) :	cortico-subcortical atrophy, arachnoidocele
Biological tests :	▪ Aseptic meningitis ▪ Persistent elevation of acute phase reactants and leukocytosis ▪ Serum dosage of interleukin 1 Beta (2) : elevated at 18.6 pg/ml (normal value< 4 pg/ml).

Figure1: Photograph of the child showing facial deformities : frontal bossing and saddle back nose.

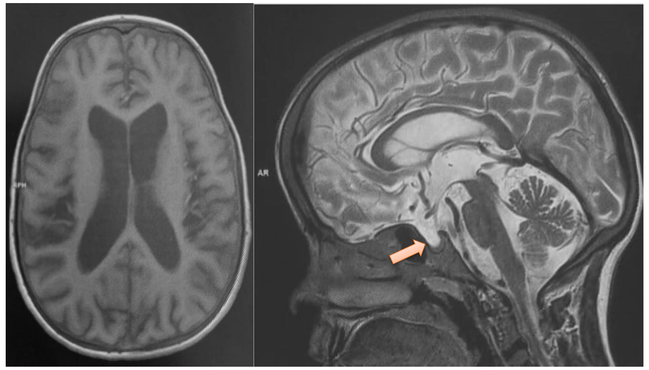

Figure 2: Brain MRI : T1 axial sequence (A) showing a cortico sub cortical atrophy and sagittal T2 sequence (B) showing ventricular dilatation and arachnoidocele (arrow).

- Due to the unavailability of interleukin-1 (IL-1) antagonist treatments (2) in our country, our patient was prescribed a corticosteroid treatment of 1mg/kg/d for one month, followed by a gradual decrease with a significant improvement of his headaches.

DISCUSSION :

- CINCA syndrome is a rare (1) disease for which the prevalence in the general population is not clearly established.
- It's typically presented(2) with neurological symptoms like chronic headaches and developmental delays, skin rash, joint inflammation and arthritis, systemic inflammation with recurrent fevers and elevated inflammatory markers, ocular complications such as uveitis, optic nerve abnormalities and skeletal abnormalities and other features like growth retardation and hearing loss.
- Even in the absence of mutations detectable by direct sequencing, other genetic mechanisms such as mutations in more distant regulatory regions of the gene, somatic mosaics or mutations in other genes involved in the regulation of inflammation could contribute to the symptoms observed which explains that some CINCA patients are " mutation-free “(3) in NLRP3.
- Treatment of CINCA syndrome includes anti-inflammatory drugs such as corticosteroids to reduce inflammation, but their efficacy is very limited. Biological agents targeting IL-1 are available (2) , such as anakinra, canakinumab or rilonacept, which are more effective, and symptomatic treatments to relieve pain.

CONCLUSIONS

- The CINCA syndrome must be considered in patients presenting with the association of **chronic headaches**, **aseptic meningitis, papilledema, hearing loss, and skin rash**
- Early diagnosis is crucial because early prescription of anti-interleukin-1 drugs improves long-term prognosis

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