Unusual cause of hypopituitarism : A Niemann Pick Disease

Dr W.Safi(1), Dr F.Hadj Kacem(1), Dr M.Naifar(2), Dr F.Kallel(3),Dr F.Ayadi(2), Dr M.Mnif Feki(1),Dr M.Abid(1)

1: Endocrine Department, Hedi Chaker Hospital, Sfax- Tunisia

2:Biochemistry Laboratory, UR12ES17 Sfax Medicine School, Sfax- Tunisia

3: Hematology Department, Hedi Chaker Hospital, Sfax- Tunisia

Introduction

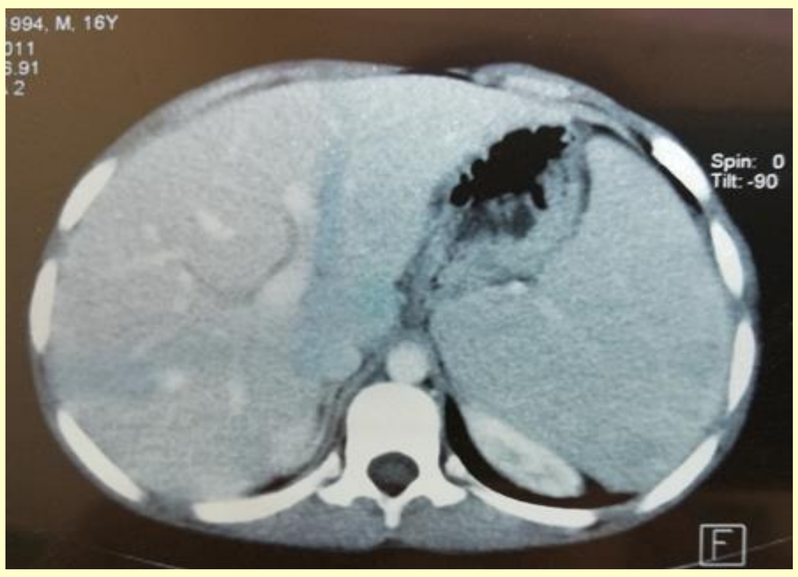
Niemann Pick type B (NMP B) is a rare lysosomal storage disease caused by mutations in the *SMPD1* gene. Typically, it has normal height and weight. In this work, we report an unusual association of a Niemann Pick disease in a child with hypopituitarism.

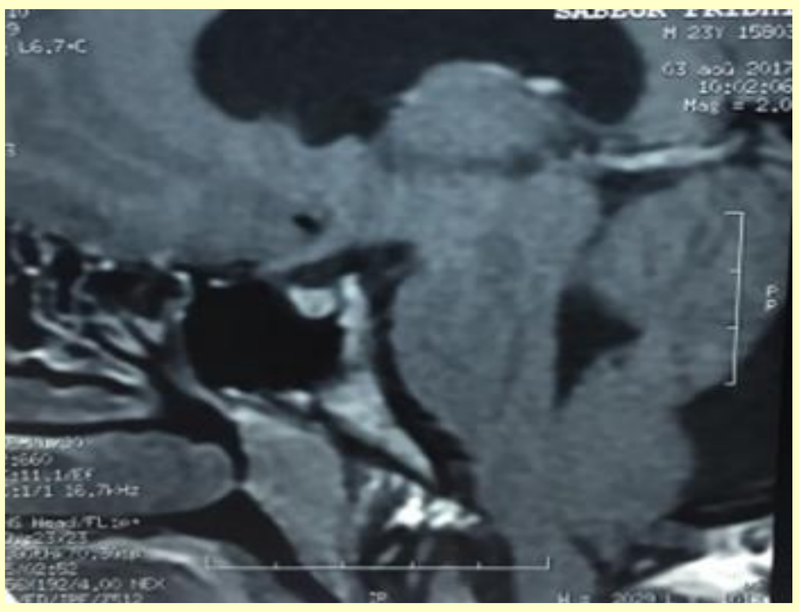
Case

We report the case of a young boy who was hospitalized at the age of 11, in the Hematology Department for splenomegaly (Fig1) and polyadenopathies where the diagnosis of Niemann Pick's disease was retained. At the age of 13, endocrine examination revealed pubertal delay with a Tanner stage: $P_1A_1G_1$ and testis volume of 2 mL, confirmed by a frankly low testosterone level of 0.02 ng/ml, contrasting with low gonadotropin levels: LH 1.5 Ui/l and FSH 2.4 Ui/l with growth and development delay (Weight: 31 kg, Z score: -2.5 SD, hight : 1.30 m, Z score -2.5 SD). Growth hormone was decreased after the GH Stimulation Test, confirming GH deficiency, while IGF1 was within normal reference range, with integrity of other pituitary axes. Cerebral MRI showed an intra cranial arachnoidal cyst of 8 x14 x 30 mm of the posterior fossa. Pituitary gland and sella turcica were normal (Fig2).

Discussion

Typically, the p.Arg610del homozygotes have normal height and weight. Wasserstein et al. compared phenotype with genotype in three patients who were homozygous for the p.Arg610del mutation with normal size for height and weight, and mean Z scores of +0.94 and 0 (1). In contrast, the mean Z scores for all other genotypes, including patients heteroallelic for the p.Arg610del allele, were –1.57 for height and –0.86 for weight. GH deficiency was highly suspected and GH stimulating tests were enrolled. GH response was below the cut-off limit confirming partial GH deficiency. IGF 1 was also tested and was within the reference range. Wasserstein MP et al. studied growth restriction in ASMD and found that serum IGF-1 levels were normal in all p.Arg610del homozygotes and were at or below the 2nd percentile for age and sex for the other genotypes (1). The pathophysiology of the low levels of IGF-1 in ASMD is not known. Liver dysfunction may predispose to low circulating levels of IGF-1, probably the result of diminished production of IGF-1 and IGF-binding proteins.
We did not measure IGF-binding proteins because liver function was conserved.





Conclusion

We conclude that a Niemann Pick disease could be associated with Growth and pubertal delay. Nevertheless, GH deficiency should be investigated.

References

(1) Wasserstein MP, Larkin AE, Glass RB, Schuchman EH, Desnick RJ, McGovern MM. Growth restriction in children with type B Niemann-Pick disease. J Pediatr. 2003 Apr;142(4):424-8.