MEHMO Syndrome

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INTRODUCTION

- MEHMO syndrome is an X-linked rare genetic syndrome associated with mutations in the *EIF2S3* gene
- Characterized by:
  - **M**ental retardation
  - **E**pilepsy
  - **H**ypogonadism
  - **M**icrocephaly
  - **O**besity
- Only 15 patients with MEHMO syndrome have been described in the literature
- MEHMO syndrome has been described with various endocrine manifestations including:
  - Growth hormone deficiency
  - Hypoglycemia
  - Hyperglycemia
  - Hypogonadism

METHODS

We describe 6 patients with MEHMO syndrome, all members of the same family, focusing on their endocrine phenotype. Data obtained through medical record review.

Figure 1

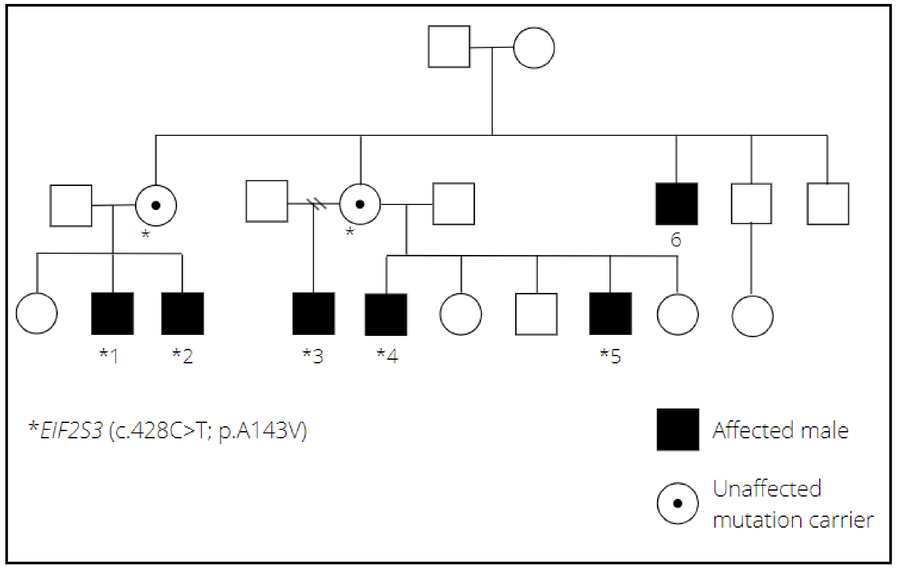

Table 1

Patient	Age	Intellectual Disability	Epilepsy	Microcephaly	SGA	Obesity	Hypogonadism	Hypoglycemia	Diabetes	Growth Hormone Deficiency
1	13y	+	-	+	-	-	-	-	-	-
2	10y	+	+	+	+	+	-	-	+	-
3	18y	+	+	+	+	-	+	+	-	+
4	14y	+	+	+	+	-	+	-	+	+
5	8y	+	+	+	-	+	+	+	+	+
6	36y	+	+	+	+	-	-	-	+	-

RESULTS

- We identified 6 male patients with MEHMO Syndrome: a set of 2 brothers, their maternal cousins (a set of 3 brothers), and their maternal uncle (Figure 1).
- The children's mean (± SD) age is 12.6 years old +/- 3.9 years; the maternal uncle is 36 years old.
- All 5 children and their mothers have an identical hemizygous missense mutation c.428C>T; p.A143V identified in the *EIF2S3* gene on the X chromosome, a novel mutation has not been previously described
  - The maternal uncle did not have genetic testing; the diagnosis was assumed based on family's report of symptoms
- Age at diagnosis ranged from 2 to 12 years old.
- Most common symptoms at presentation: Small for gestational age (SGA), microcephaly, developmental delay, epilepsy
- Endocrine manifestations include hypogonadism, hypoglycemia, diabetes, and growth hormone deficiency (Table 1)

DISCUSSION

- This is the largest case series of patients with MEHMO syndrome described to date
- The novel missense mutation c.428C>T; p.A143V in the *EIF2S3* gene has not been previously found
- The endocrine manifestations found in these patients are similar to those described in other patients with MEHMO syndrome

CONCLUSION

- MEHMO syndrome is frequently associated with endocrinopathies, most commonly glucose dysregulation, hypogonadism, and growth hormone deficiency
- A baseline endocrine evaluation is important for all patients with MEHMO syndrome
- The appropriate surveillance schedule requires more study and identification of more patients

REFERENCES

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