2 Siblings with Short Stature

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Case Presentation
- Two siblings, born of 3rd degree consanguineous marriage.
- Presented with short stature and severe failure to thrive.
- No history of hypoglycemia
- No history of parents or any other relatives with similar complaint

<table>
<thead>
<tr>
<th>DESCRIPTION</th>
<th>SIBLING 1</th>
<th>SIBLING 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>AGE</td>
<td>2 year 7 month old</td>
<td>1 year 5 months</td>
</tr>
<tr>
<td>REFERRAL FOR</td>
<td>FTT, SHORT STATURE</td>
<td>FTT, SHORT STATURE</td>
</tr>
<tr>
<td>CONSANGUINITY</td>
<td>3rd DEGREE</td>
<td>3rd DEGREE</td>
</tr>
<tr>
<td>BIRTH ORDER</td>
<td>1ST</td>
<td>2ND</td>
</tr>
<tr>
<td>BIRTH WEIGHT</td>
<td>3.1 KG</td>
<td>3 kg</td>
</tr>
<tr>
<td>NEONATAL JAUNDICE</td>
<td>NO</td>
<td>NO</td>
</tr>
<tr>
<td>HYPOGLYCEMIA</td>
<td>NO</td>
<td>NO</td>
</tr>
</tbody>
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<tbody>
<tr>
<td>LENGTH/HEIGHT</td>
<td>65 cm &lt; 3rd centile</td>
<td>57 cm &lt; 3rd centile</td>
</tr>
<tr>
<td>WEIGHT</td>
<td>6 kg &lt; 3rd centile</td>
<td>4.6 kg &lt; 3rd centile</td>
</tr>
<tr>
<td>HEAD CIRCUMFERENCE</td>
<td>45 cm</td>
<td>44 cm</td>
</tr>
<tr>
<td>MID PARENTAL HEIGHT</td>
<td>153.45 cm</td>
<td>153.45 cm</td>
</tr>
<tr>
<td>MIDFACIAL HYPOPLASIA</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>DEPRESSED NASAL BRIDGE</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>PROMINENT EARS</td>
<td>YES</td>
<td>YES</td>
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<tr>
<td>MICROGNATHIA</td>
<td>YES</td>
<td>YES</td>
</tr>
</tbody>
</table>

INVESTIGATION SIBLING 1 SIBLING 2

| S. Creatinine | 0.66 mg/dl | 0.69 mg/dl |
| Sodium        | 134 mmol/l | 135 mmol/l |
| Potassium     | 4.87       | 4.23 mmol/l |
| Chloride      | 108 mmol/l | 105 mmol/l |
| CBP           | WNL        | WNL        |
| LFT           | WNL        | WNL        |
| RBS           | 77 mg/dl   | 69 mg/dl   |
| TSH           | 9.35 mcU/ml | 5.5 mcU/ml |
| 2D Echo       | Normal     | Normal     |
| Vit D         | 50 ng/ml   |            |
| Serum GH      | 61.85 ng/ml | 50 ng/ml   |
| IGF-1         | < 25 ng/ml | < 25 ng/ml |

Diagnosis – IGF-1 deficiency. Advised therapy with recombinant IGF-1

DISCUSSION
- First reported by Prof Zvi Laron in 1959 in 3 siblings with severe short stature, born to a consanguineous Jewish family.
- Characterized by clinical features of growth hormone (GH) deficiency and biochemical findings suggestive of GH resistance.
- An overall prevalence of 1/9,000,000.
- Short stature (height SDS between -4 to -10SD) is associated with typical facies, obesity, acromia, high basal GH, and low IGF-1. Patients with Laron syndrome are unresponsive to exogenous GH therapy.
- rIGF-1 in a dose of 75 ug/kg/day sc BD or Single dose
- Prolonged treatment improves linear growth, growth of hands, feet, chin, and nose as well as onset of puberty
- Side effects include water and electrolyte retention and calcuria.
- Limb lengthening – Difficult due to thin bones and weak muscles
- rIGF-1 in India- Not available.
- Normal longevity and live up to 70 years in studies by Laron and Ecuadorian study.
- Signs of early aging such as skin wrinkling and joint pain as well as obesity and poor muscle strength in adulthood.
- Sleep apnea has also been noted related to obesity and a small oropharynx.
- Similar case has been reported by Baumbach et al. with a G236 splice mutation in exon 7 in a Bahamian cohort

REFERENCES


