**CASE HISTORY**

- 21 year old primigravida
- 3 days post-partum
- Traumatic labour / Instrumental delivery
- Severe post-partum haemorrhage - 3 litres blood loss
- 5 units blood transfusion and 2 units FFP
- No problem with Lactation / Breast feeding

**ENDOCRINE REFERRAL**

- Polyuria and polydipsia
- Average urine output 500 ml / hour (10-12L / day)
- Drinking around 10 jugs of water a day
- Bedside observations were stable
- Capillary blood glucose level was 4.7 mmol/L

**PRE-PARTUM HISTORY**

- 2 weeks history of polyuria and polydipsia prior to labour, but patient thought it was pregnancy-related and never thought to seek any medical advice for it.

**INVESTIGATIONS**

<table>
<thead>
<tr>
<th>Tests</th>
<th>Results</th>
<th>Normal values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lab glucose</td>
<td>4.9 mmol/L</td>
<td>3.9 – 6.1</td>
</tr>
<tr>
<td>Sodium</td>
<td>146 mmol/L</td>
<td>132 – 142</td>
</tr>
<tr>
<td>Potassium</td>
<td>3.9 mmol</td>
<td>3.5 – 5.5</td>
</tr>
<tr>
<td>Urea</td>
<td>6.4 mmol/L</td>
<td>2.5 – 7.5</td>
</tr>
<tr>
<td>Creatinine</td>
<td>78 Mmol/L</td>
<td>46 - 92</td>
</tr>
<tr>
<td>Cor. Calcium</td>
<td>2.36 mmol/L</td>
<td>2.2 - 2.8</td>
</tr>
<tr>
<td>TSH</td>
<td>2.63 mIU/L</td>
<td>0.25 – 4.5</td>
</tr>
<tr>
<td>Cortisol</td>
<td>557 mmol/L</td>
<td>200 - 650</td>
</tr>
<tr>
<td>Plasma osmolality</td>
<td>296 mosm</td>
<td>275-295</td>
</tr>
<tr>
<td>Urine osmolality</td>
<td>78 mosm</td>
<td>300 - 1000</td>
</tr>
<tr>
<td>Urinary sodium excretion</td>
<td>24 mmol</td>
<td></td>
</tr>
<tr>
<td>Prolactin</td>
<td>2630 mU/L</td>
<td>102 - 496</td>
</tr>
</tbody>
</table>

**DIAGNOSIS**

**Gestational Diabetes Insipidus (GDI)**

- Symptoms during the 3rd trimester: polyuria and polydipsia
- Passing a large volume (>3L/24h) of diluted urine (osmolality <300 mOsmol/kg)

**MANAGEMENT AND RECOVERY**

- 1 mcg IM-DDAVP: Good response
- Allowed to drink freely
- Strict monitoring of fluid balance and U&Es
- Oral Desmopressin (only for one day)
- Full recovery on day 5 post-partum
- Urine output reduced to 2420 ml/24h
- Serum sodium down to 136 mmol/L
- Discharged - GP follow up in 2 weeks: no symptoms

**GESTATIONAL DIABETES INSIPIDUS**

- A rare pregnancy-related endocrinopathy
- Affects 1 in 30,000 pregnancies
- First reported cases by the Italian E. Momigliano in 1929 (31 cases of pregnancy-related diabetes insipidus)
- May occur in an apparently healthy woman, during any stage of pregnancy, usually during the 3rd trimester
- Excessive placental vasopressinase in 3rd trimester which breaks down ADH
- Transient, resolves after delivery of the placenta (may last around 4-6 weeks following labour)
- Can be associated with pre-eclampsia, HELLP syndrome and acute fatty liver
- May recur in subsequent pregnancies
- An abrupt change in the voiding pattern during the last trimester of pregnancy manifesting as hypotonic polyuria, and excessive water intake represent the hallmark of the disease
- Most cases can be treated with desmopressin
- Hydrochlorothiazide is the 2nd line if resistant to DDAVP
- If untreated can lead to significant morbidity and mortality (rapid onset hypernatraemia leading to central pontine demyelination and baby’s death)

**CONCLUSION AND LEARNING POINTS**

- This was an unusual case of Gestational Diabetes Incipidus
- Frequently under-diagnosed because polyuria is often considered normal during pregnancy
- Excessive placental vasopressinase in 3rd trimester which breaks down ADH
- Can be associated with pre-eclampsia, HELLP syndrome and acute fatty liver
- It’s very important to diagnose and treat GDI early because it can lead to significant morbidity and mortality (rapid onset hypernatraemia leading to central pontine demyelination and baby’s death)

**REFERENCES**

- Renela Gambito et al, Case Reports in Nephrology (2012)
- Nikolay Aleksandrov et al, Journal of Obs, MARCH 2010