“A true detective story”

Nephrology Study Day

9th November 2018

Judith van der Voort

- Story of baby LK: born 20.10.17
- Born at NVD at 40/40
- HIE with poor Apgars: 0-6-6
- Meconium aspiration
- Possible infection

- NICU admission for 2 weeks
- Therapeutic hypothermia
- Intubation and ventilation
- Phenobarbitone for convulsions (one dose)
- Full septic screen
- 14 Days of antibiotics
- Close follow up for hypercalcemia and fat necrosis in the neck

Home monitoring

	4.11.17	7.11.17	14.11.17
Na	137	140	138
K	5.9	5.9	4.9
Urea	3.2	3.4	3.3
Creat	37	36	35
Ca	2.71	2.85	2.61

- 19.12.17:
  - first immunisations
- 20.12.17:
  - allergic reaction, rash, mum gives a dose or two of Piriton
- 21.12.17:
  - Didn’t pass urine and vomited 3 times
- 22.12.17:
  - 2 am, further vomit and some diarrhoea, goes to A&E
  - Normal exam, HR 160/min, BP 118/63, no evidence of dehydration
  - 3 am 10 minute focal seizure, becomes generalised, given rectal diazepam. BM 5.1

- Management:
- 2 fluid boluses of N/S 10 ml/kg
- Full septic screen and antibiotics given
- Results:
  - Na 115
  - K 6.2
  - Urea 8.1
  - Creat 63
  - Ca 2.16
  - Mg 0.78
  - CRP 69

- Adrenal Insufficiency????
- Maybe yes?
  - Low serum sodium
  - High serum potassium
- Probably no:
  - Normal female genitalia
  - No dehydration
  - Normal glucose
  - High BP (?)
  - Urine sodium < 20 mmol/l
  - Cortisol 502, subsequently 1120

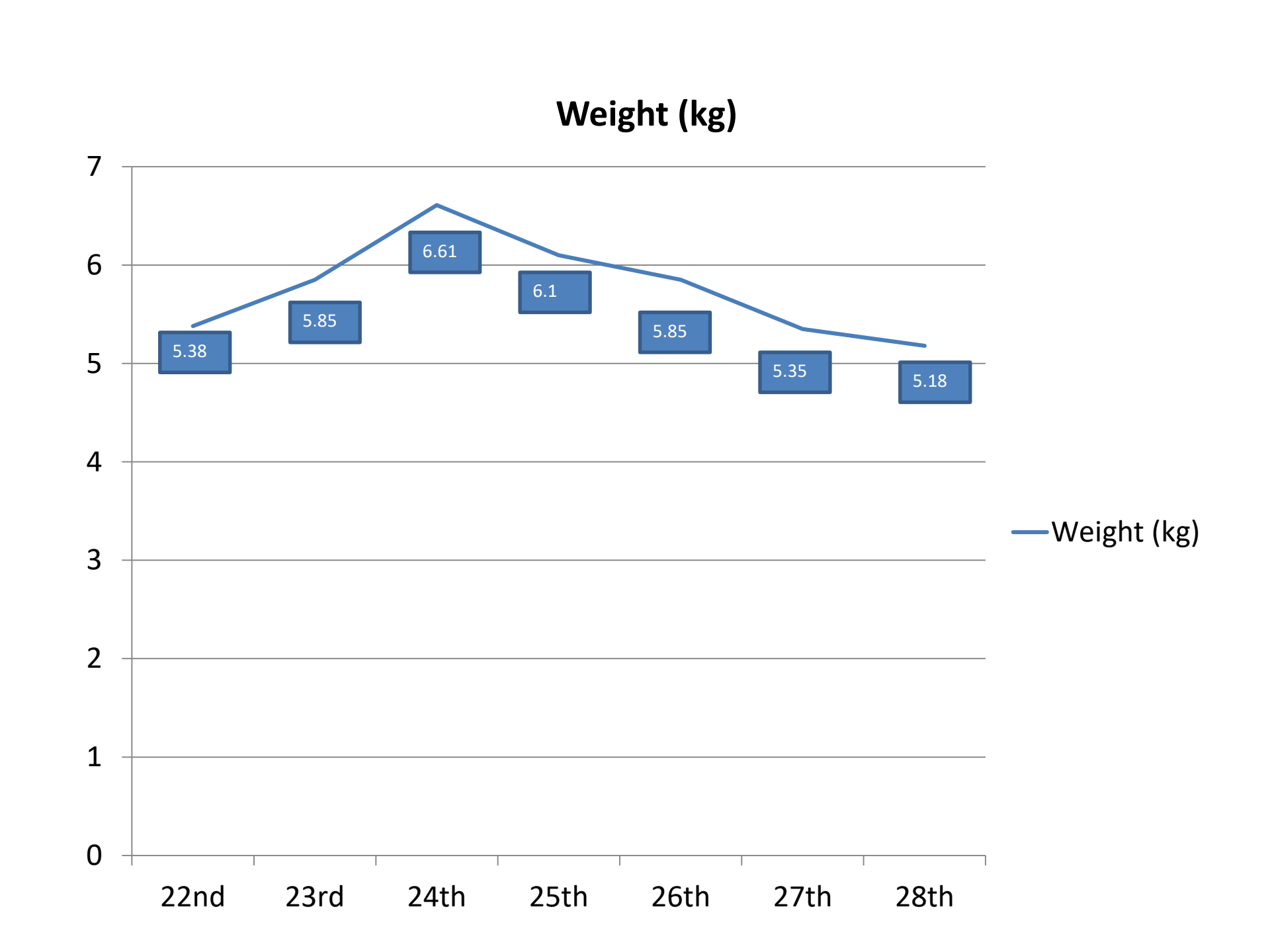
- Hyponatremic Dehydration??
- Maybe yes?
  - History of D&V
  - Urine Na < 20 mmol/l
  - Both urea and creat increased, but urea more so
- Probably no:
  - Clinically not dehydrated
  - BP high
  - Urine osmolality low 229 mosm/kg

- SIADH????
- Maybe yes:
  - Hyponatremia
  - Clinically not dehydrated, maybe a bit puffy
  - No urine output
- Maybe no:
  - Urine not very concentrated: osmolality 229
  - Urine Na not usually low
  - Why AKI? Not a feature of SIADH

- Acute Glomerulonephritis???
- Maybe yes:
  - Slightly puffy
  - Highish BP
  - AKI
  - 3+ Blood and 3+ protein in the urine (only obtained after a day or so and after failed catheterisation attempts)
- Probably no:
  - Very young
  - No history of infection
  - C3 and C4 normal, ASOtitre normal

- Further management:
  - Sodium supplements: initially iv, then po (±20 mmol/day)
  - Fluid restriction (urine output 0.9 ml/kg/hr but hard to measure)
- 24.12.17
  - BP remains high 127-130 systolic,
  - Captopril started
  - Exam: sl puffy, hungry, started on feeds

	22.12 03.00	22.12 04.00	22.12 15.00	23.12	24.12	25.12	26.12
Na	115		119	132	131	146	144
K	6.2		5.8		4.4		5.8
Urea	8.1		7.9	8.6	6.2	2.9	1.2
Creat	63		64	48	40	33	29
pH	7.06	7.16	7.29	7.39	7.34	7.38	7.41
pCO2	8.63	7.15	4.53	3.66	4.53	4.89	4.85
BE	-11.2	-9.1	-9.3	-8.0	-6.7	-3.2	-1.6


Weight (kg)
7
6
5
4
3
2
1
0
5.38
5.85
6.61
6.1
5.85
5.35
5.18
22nd
23rd
24th
25th
26th
27th
28th
Weight (kg)

- 25.12.17
  - Hypernatremic with BP 132-163 systolic
  - Sodium and bicarb supplements are reduced and eventually stopped
  - Captopril increased
  - Admitted to HDU
  - BP 152/82
  - Labetalol infusion
  - Capropril
  - Hydralazine
  - U/S kidneys plus dopplers of renal vessels normal
  - Aldosterone and renin send
- 26.12.17
  - ECHO: no evidence of chronic HT
  - Diurese: 14 ml/kg/hr
  - Blood pressure normalises
  - Weaned off all medication and has remained entirely well

- Healthy girl
- Acutely with anuria, AKI, seizure, high BP, hyponatremia, worsening BP,
- Increase in weight, diuresis
- All normalises
- There has to be an explanation!!

- Immunisations??
  - SIADH,
  - cause of PIGN.
- Allergic reaction??
  - trigger
- Cystic Fibrosis: sweat test normal
- Chlorphenamine (Piriton)??
  - common or very common side effect: urinary retention.
  - Phoned mother: dose of 5 ml (2 mg) twice in 12 hours given