



A 55-Year-Old Female with Raised Potassium Levels

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Case History 3

A 55-year-old lady presents to you with back ache after a fall at home.

Chest X ray is done that shows partial Sacral S1 fracture, however after seeking an opinion from Neurosurgical and orthopaedics team, they advise mobilize as per pain allows.

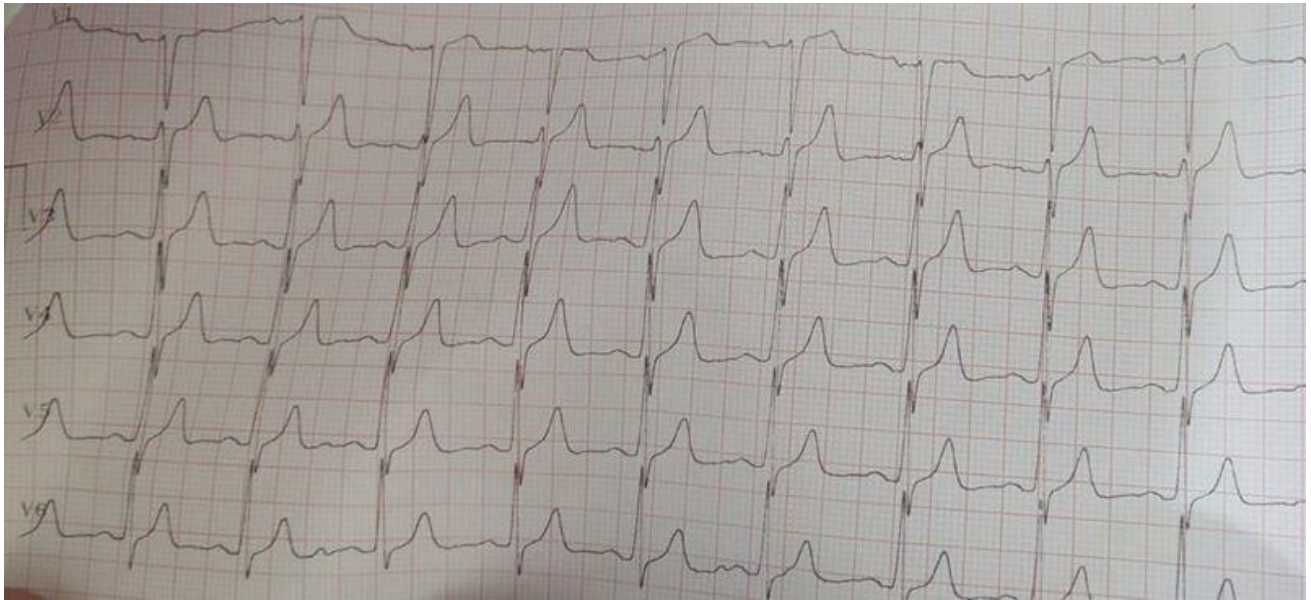
You note that on conducting a Full blood count, the results are normal and Electrolytes show her potassium levels are 5.7 mmol/l

Sodium and chloride levels are normal.

Her inflammatory markers and Urea + Creatinine / Renal function tests are normal.

You decide to conduct protein electrophoresis and Urine for Bence Jones proteins / Myeloma screen, but that turns out to be negative as well.

You undertake an ECG that is shown below:



What should be next management steps?

This patient has hyperkalemia as can be seen in the blood test where her potassium level is 5.7 mmol/l. ECG also shows typical finding of hyperkalemia.

Administer Calcium Chloride 10 ml of 10 % over 10 minutes slowly:

This stabilizes the myocardium and prevents against arrhythmias due to hyperkalemia.

10 units of insulin Actrapid in 50 ml of 50 % dextrose over 30 minutes:

This will move excess potassium ions into the cells.

Salbutamol nebs 5 mls qds.

You decide to review her medications and find out she is taking the prescription below :

She has Type 2 Diabetes Mellitus and is on Metformin 1000 mg twice a day for that.

Her BM levels are normal including her HbA1c.

She is taking the following treatment

Doxazosin once a day.

Omeprazole 20 mg once a day

Vit D / Adcal one tablet twice a day.

Paracetamol 1 Gm qds.

Tab Solifenacin 5 mg OD

Which further steps will you take:

The patient is taking 3 medications that can cause hyperkalemia :

Metformin:

The patient has stable BM / Blood glucose levels , it might be a good idea to reduce the dose of Metformin to 500 mg once a day and keep monitoring blood glucose levels.

Omeprazole:

Omeprazole can cause high potassium levels.

It might be a good idea to substitute Omeprazole with another anti gastritis medication that do not cause high potassium levels such as famotidine.

Doxazosin:

This patient is on Doxazosin which has been started to control her Blood pressure.

It can cause hyperkalemia and hence should be replaced by another medication such as Amlodipine that will not affect her serum potassium levels.

Conduct serum Cortisol levels :

New research shows cortisol level, instead of ACTH level, is correlated with plasma potassium levels.

A high cortisol level may be the principal cause of hypokalemia.

These should be done and depending on the results , appropriate treatment should be undertaken.

After doing all of the above , you notice her potassium levels become normal , however after 2 days again they become 5.6 mmol/l.