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PSEUDOHYPERKALEMIA ASSOCIATED WITH POST-SPLENECTOMY THROMBOCYTOSIS

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Pseudo hyperkalaemia is defined as a difference between serum and plasma potassium concentration of more than >0.4 mmol/L, in the absence of clinical manifestation. It can be due to several factors including prolonged tourniquet application, haemolysed sample, and increased cell count such as thrombocytosis or hereditary spherocytosis. Method: We describe a case of discrepant serum and plasma potassium levels in a middle- aged man with underlying prefibrotic primary myelofibrosis, who underwent emergency splenectomy for traumatic splenic injury. His serum potassium levels in plain tubes ranged from 5.5 to 6.1mmol/L, while plasma potassium levels in lithium heparin tubes ranged from 3.6 to 4.6mmol/L. All his blood samples reached the laboratory without delay, centrifuged using our laboratory standard procedure and were not haemolysed (H-index <10). His highest platelet level was 568 x 109 /L while white cell count was 27.92 x 103 /µL. He was treated with oral sodium polystyrene sulphonate despite being clinically stable and normal electrocardiogram. Serum potassium remained high while plasma potassium remained within normal range. Diagnosis of pseudo hyperkalaemia was made. Pseudo hyperkalaemia in patients with thrombocytosis can be seen in serum sample due to the tube constituents. Serum tube containing silica promotes coagulation, where platelet aggregates will degranulate and cause release of intracellular potassium. More intracellular release of potassium occurs in case of thrombocytosis. Whereas in a heparin tube, clotting does not occur therefore, intracellular potassium is not released and reflects the true potassium level. We highlighted the case of pseudo hyperkalaemia due to thrombocytosis, detected on serum samples. Lithium heparin tube should be used in patients with thrombocytosis instead of plain tube to avoid the diagnosis of hyperkalaemia.