A case of Primary hyperparathyroidism and subsequent parathyroidectomy

HOSP #		WARD	Medical Ward
CONSULTANT	Dr. Jody Rusch	DOB/AGE	59 Y Male

Abnormal Result

Hypercalcemia with hypophosphatemia

Presenting Complaint

History

This is a patient with parathyroid adenoma (and resulting longstanding hypercalcemia and hypophosphatemia, which is typical). Adenoma was removed yesterday, acc. to what I can see on a frozen section. Phosphate is dropping even more 0.42 mM (0.78 – 1.42) (on bloods taken this afternoon) and it will likely become significantly lower even.

Examination

Laboratory Investigations

Episode No	[redacted]	MRN	[redacted]	HPRN		Routine	
Mr M[redacted]				M	59 y	10/06/1960	
Clotted blood;							
F.N.	[redacted]	Alt		RN		Collection	18/04/2020 16:00
Hos	Groote Schuur Hospital wc GSH			☎	021 404 9111	Received	18/04/2020 16:34
Wrd	G12 Medical Ward			☎	404 3243 / 3547	Registered	18/04/2020 17:07
Doc	DR FAULMANN			☎		ePR	Detail

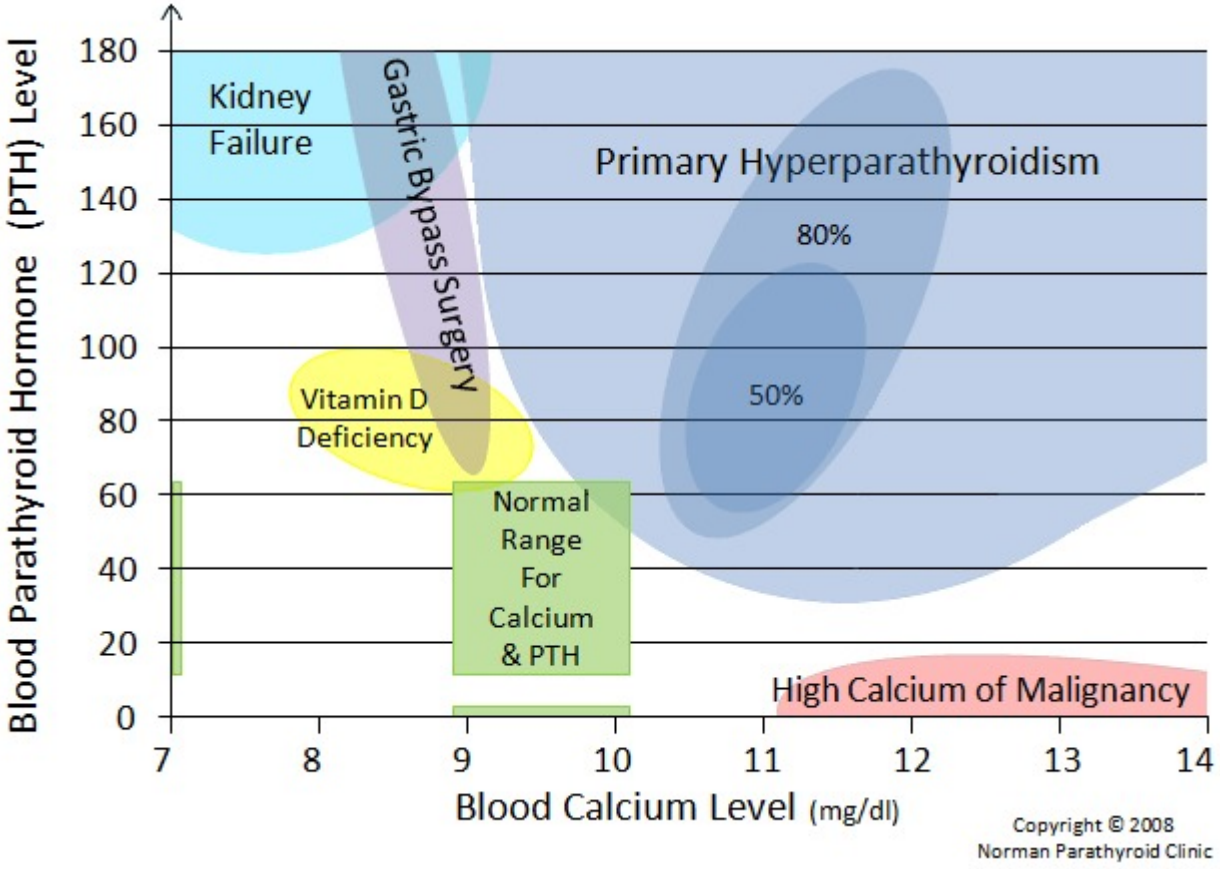
Visit Test Set(s)

(A) LD <A entry>
(A) SIND <A entry>
<SAZC003> (A) ALB <A entry>
<SAZC003> (E) TBIL # <A entry>
<SAZC003> (A) CBIL <A entry>
<SAZC003> (A) ALT <A entry>
<SAZC003> (E) AST # <A entry>
(* Curr.) (# In List)

Update | Authorise | Amend | Fully Authorise | Clear | Cancel | << | Notes | Graph | >>

Test Set	Staff Notes	Test Item	Result	Units	Normal Values	Previous Result 1	Previous Result 2	Previous Result 3	Previous Result 4	Previous Result 5
CA		Calcium	2.90	mmol/L	2.15 - 2.50	3.49 17/04/2020 13:25	3.52 16/04/2020 07:30	3.75 15/04/2020 10:00	3.69 14/04/2020 08:30	3.69 13/04/2020 08
		Corrected calcium		mmol/L	2.15 - 2.55					
MG		Magnesium	0.65	mmol/L	0.63 - 1.05	0.70 17/04/2020 13:25	0.64 16/04/2020 07:30	0.73 15/04/2020 10:00	0.68 14/04/2020 08:30	0.71 13/04/2020 08
PO4		Inorganic phosphate	0.42	mmol/L	0.78 - 1.42	0.86 17/04/2020 13:25	0.62 16/04/2020 07:30	0.72 15/04/2020 10:00	0.71 14/04/2020 08:30	0.71 13/04/2020 08
ALB		Albumin	33	g/L	35 - 52	35 21/03/2020 13:00				
TBIL		Total bilirubin	3	umol/L	5 - 21	<3 21/03/2020 13:00	<3 20/03/2020 17:00			
		Total bilirubin auto com								
CBIL		Conjugated bilirubin (DI	<1	umol/L	0 - 3	<1 21/03/2020 13:00	<1 20/03/2020 17:00			
ALT		Alanine transaminase (/	12	U/L	10 - 40	10 21/03/2020 13:00	10 20/03/2020 17:00			
AST		Aspartate transaminase	60	U/L	15 - 40	10 21/03/2020 13:00	12 20/03/2020 17:00			
ALP		Alkaline phosphatase (/	281	U/L	53 - 128	338 21/03/2020 13:00	361 20/03/2020 17:00			
GGT		Gamma-glutamyl transfe	75	U/L	<68	42 21/03/2020 13:00	46 20/03/2020 17:00			
LD		Lactate dehydrogenase	390	U/L	100 - 190					
SIND		Serum haemoglobin inc	0			0 17/04/2020 13:25	0 16/04/2020 07:30	0 15/04/2020 10:00	0 14/04/2020 13:30	0 14/04/2020 08
		Serum bilirubin index	0			0 17/04/2020 13:25	+- 16/04/2020 07:30	0 15/04/2020 10:00	+- 14/04/2020 13:30	+- 14/04/2020 08
		Serum lipaemia index	0			0 17/04/2020 13:25	0 16/04/2020 07:30	0 15/04/2020 10:00	0 14/04/2020 13:30	0 14/04/2020 08
		Serum haemoglobin va	6.00			3.00 17/04/2020 13:25	4.00 16/04/2020 07:30	1.00 15/04/2020 10:00	5.00 14/04/2020 13:30	2.00 14/04/2020 08
		Serum bilirubin value	0.00			0.00	1.00	0.00	1.00	1.00

PTH was initially significantly raised, although the renal function was normal. This means that there is likely hypercalcemia due to primary hyperparathyroidism.



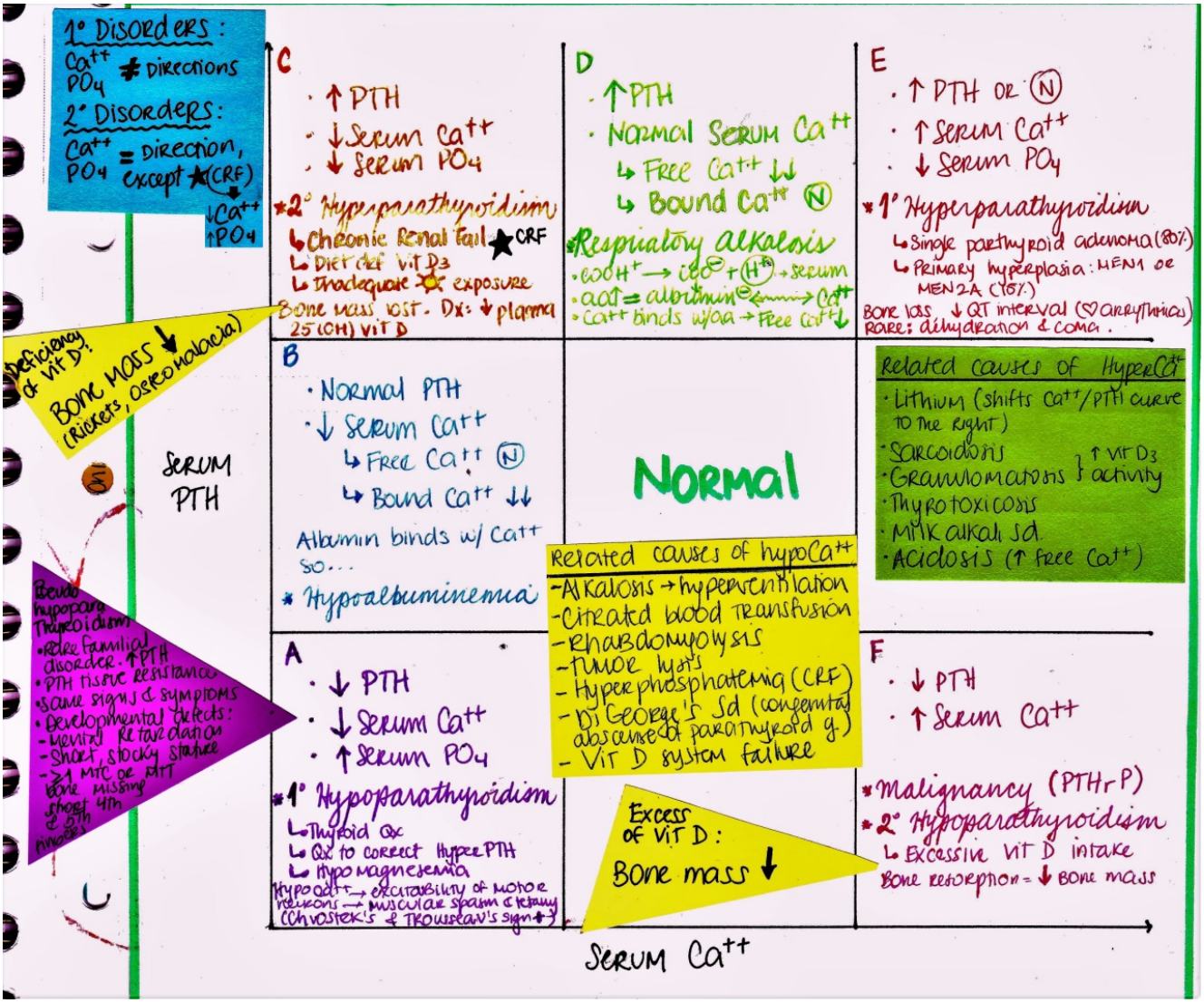


Chart drawn by 100lyric

Other Investigations

Final Diagnosis

Take Home Message

Phosphate supplementation may be quite important as there was longstanding autonomous PTH secretion, depleting stores of phosphate via phosphaturia (also PTH induced). There will likely not be much PTH secretion for some while, hence Vit. D activation will seize and little phosphate absorbed from the GIT due to longstanding lack of phosphate transporters. FGF-23 secretion will also seize and with the lack of PTH, the bone

will not resorb and the remodeling process will consume the phosphate in the blood. Most mechanisms to increase phosphate physiologically will likely be dysfunctional at this time. Because he will not adequately absorb phosphate from the GIT (because of failure to activate Vit. D, he may need supplementation of phosphate IV).

Kidneys will however be a bit less phosphaturic (due to lack of PTH), thus he may respond quite well to IV phosphate.