Case 3:

45 year old obese male, BMI 36kg/m^2, hypertensive with known history of kidney stones and sarcoidosis in spontaneous resolution, had pre operative bariatric assessment and severe vitamin D deficiency was treated. New complaints of severe palpitations, very dry mouth and mental fogginess!

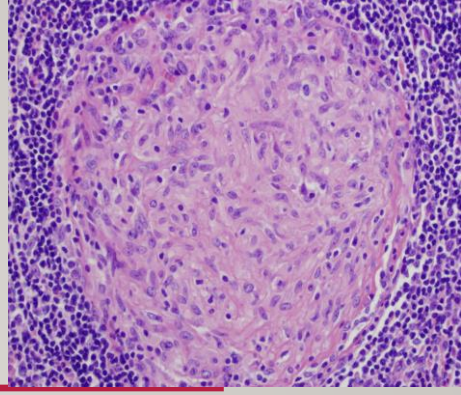
Blood tests	Results	Reference ranges	Previous level (3 month ago)
Corrected calcium	3.00	2.2-2.6mmol/L	2.4
Phosphate	1.61	0.8-1.4mmol/L	1.2
Magnesium	0.85	0.7-1.0mmol/L	0.85
Vitamin D	85	80-150nmol/L	20
PTH	1.1	1.3-6.8pmol/L	8.1
Creatinine	102	64-104 umol/L	52
Urea	6.8	2.0-6.6mmol/L	3.8

Blood test	Results	Reference range
Serum ACE	51	8-52 U/L
1,25 (OH)2 vitamin D^3	208	43-144pmol/L

Other relevant contributory factors leading to hypercalcaemia were discovered:

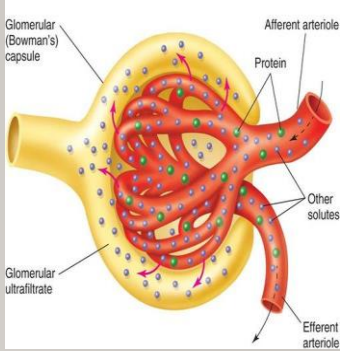
- Patient was on thiazide diuretic for hypertension.
- Low oxalate and high calcium diet (high intake of dairy products, sun dried mushrooms) for prevention of calcium oxalate kidney stones.

DIAGNOSIS & MANAGEMENT



- Active Sarcoidosis
- Chest X ray showed-paratracheal lymph nodes.
- Granulomatous conversion of 25 Vitamin D to active moiety 1,25 $(OH)^2$ vitamin D_3 leading to symptomatic hypervitaminosis D and hypercalcaemia with acute AKI.
- Immediate cessation of vitamin D supplements, thiazide diuretic, calcium rich diet and aggressive hydration.
- Symptoms improved and hypercalcaemia resolved gradually over time.
- Bariatric surgery to be considered on a later date with special attention to any vitamin D supplementation if required.

EGFR:TREAT DIFFERENTLY IN MORBIDLY OBESE PATIENTSX



- Morbidly obese patients can have low serum creatinine due to low muscle mass.

- A seemingly normal creatinine level may indeed represent impaired renal function.

CASE 4

- 60 year old female patient with Duodenal switch surgery 8 years back.
- Other comorbidities-past history of unprovoked PE and on warfarin.
- Presented with history of easy bruising on low impact injuries which progressed to spontaneous haemorrhages without injury.
- INR was elevated to 5.
- Patient had been on holiday with irregular dietary patterns.

	Results	Normal reference range
Vitamin K	**<0.10ug/L**	(0.15-1.55)
	Pivka II >10.0 au/mL	(0.00-0.20)
	Very low vitamin K body stores	
Prothrombin time	**14.8**	9-11

- Patient was given i.v. Phytophenadione 5 mg injection.
- Currently on 10mg Menadiol per day for 30 days.
- Repeat level of vitamin K - 1.24 ug/L. **(Normal)**
- Spontaneous bruising and INR improved.
- Patient on vitamin K oral supplements under regular monitoring.
- Collaborated with anti-coagulation team to educate patient about proper management of her diet to avoid fluctuations of vitamin K levels while being on warfarin.

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Original Article

Guidelines for the follow-up of patients undergoing bariatric surgery

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Summary

Bariatric surgery can facilitate weight loss and improvement in medical comorbidities. It has a profound impact on nutrition, and patients need access to follow-up and aftercare. NICE CG189 Obesity emphasized the importance of a minimum of 2 years follow-up in the bariatric surgical service and recommended that following discharge from the surgical service, there should be annual monitoring as part of a shared care model of chronic disease management. NHS England Obesity Clinical Reference Group commissioned a multi-professional subgroup, which included patient representatives, to develop bariatric surgery follow-up guidelines. Terms of reference and scope were agreed upon. The group members took responsibility for different sections of the guidelines depending on their areas of expertise and experience. The quality of the evidence was rated and strength graded. Four different shared care models were proposed, taking into account the variation in access to bariatric surgical services and specialist teams across the country. The common features include annual review, ability for a GP to refer back to specialist centre, submission of follow-up data to the national data base to NBSR. Clinical commissioning groups need to ensure that a shared care model is implemented as patient safety and long-term follow-up are important.

Guidelines have been incorporated in NICE Quality standard QS127
BOMSS (British Obesity & Metabolic Surgery society nutritional guidelines

Other common biochemical and metabolic issues associated with bariatric surgeries:

- Iron deficiency anaemia, Non-anaemic depleted iron stores, iron deficiency in B thalassaemia trait and hypoalbuminaemia patients
- Hypomagnesaemia associated with hypocalcaemia-RYGBP
- Hypophosphatemia-RYGBP
- Hypalbuminaemia-RYGBP & DS
- Dumping syndrome-RYGBP
- Drug interactions especially OCPs and antimicrobial levels-RYGBP
- Drug levels esp anti-epileptics, anti-psychotics-RYGBP
- Selenium deficiency and exacerbation of joint issue-DS & RYGBP
- Vitamin A deficiency & night blindness-DS & Mini-gastric bypass
- Vitamin K deficiency, raised INR -DS
- Pregnant bariatric surgery patients.
- Kidney stones (calcium oxalate)-DS , RYGBP & Mini-gastric bypass

SUMMARY

Positive clinical outcomes post bariatric surgeries govern increased referral rate for surgeries- allowing more patients to get the much needed surgery!

- ***Bariatric surgery patients can have <u>complex clinical presentations due to coexisting multiple nutritional deficiencies requiring increased vigilance!</u>***

- ***Multidisciplinary team including bariatric surgeons, physicians, chemical pathologists, dieticians, nurses, physiotherapists and psychologists play a pivotal role in the holistic management of bariatric surgery patients.***

- ***Increased awareness of altered gut anatomy, physiology and biochemistry post bariatric surgery and associated <u>avoidable</u> medical complications, for all involved in the patient care.***

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- Dr Villy Vage and SOReg-N organisers.
- All my colleagues in Bariatric MDT and Chemical Pathology, HUH and other bariatric units in the UK.
- Last but not the least our bariatric patients who have contributed immensely towards my learning and allowed me to contribute in their healing!

Many thanks to all of you for your time and attention!

Have a lovely day!

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