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THE CURIOUS CASE OF THE HIDDEN PARATHYROID GLAND: TWO CASE SERIES

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INTRODUCTION/BACKGROUND
The main challenge in managing primary hyperparathyroidism is localization of hyperfunctioning parathyroid gland. This step is crucial prior to parathyroidectomy to ensure effectiveness of surgical treatment and reducing the risk of re-operation.

CASE
We encountered 2 cases with difficulty in localizing the parathyroid gland. The first case, 34-year-old female, presented with renal colic and noted to have bilateral renal calculi and hypercalcemia (calcium 2.94 mmol/L, phosphate 0.64 mmol/L). The second case, 46-year-old female, presented with body weakness and incidental finding of hypercalcemia (calcium: 2.84 mmol/L, phosphate: 0.52 mmol/L). Both have high serum iPTH of 98.5 pg/ml and 83.9 pg/mL, respectively. Bone mineral density revealed total Z-score of – 0.7 and – 2.1, respectively. Their kidney ultrasound showed bilateral medullary nephrocalcinosis. Both cases were diagnosed with primary hyperparathyroidism.

For the first case, initial neck ultrasound and sestamibi scan failed to localize any parathyroid adenoma. FDG-PET scan showed no evidence of uptake elsewhere. CT of the neck with delayed venous phase revealed single nodule seen at the upper border of left thyroid gland. A repeat neck ultrasound showed a single hyperechoic nodule in concordance with findings in the CT of the neck.

In the second case, neck ultrasound revealed 2 intrathyroidal lesions at bilateral lower pole of the thyroid gland. Sestamibi scan showed no evidence of hyperfunctioning parathyroid tissue. CT of the neck with delay venous phase revealed similar intrathyroidal nodular lesion seen in the ultrasound. However, no hypodensity was seen in delayed venous phase which was not a suggestive feature of parathyroid adenoma.

Left superior parathyroidectomy was planned for the first patient. Meanwhile, an exploratory bilateral inferior neck surgery is scheduled for the second patient.

CONCLUSION
There are few reasons contributing to a false-negative sestamibi scan. In addition, neck ultrasound is operator-dependant. Hence, alternative imaging modalities are important to help with parathyroid gland localization.

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PARATHYROID CARCINOMA PRESENTING AS PRIMARY HYPERPARATHYROIDISM IN ADOLESCENCE

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INTRODUCTION/BACKGROUND
Parathyroid carcinoma is an extremely rare cause of primary hyperparathyroidism in adolescence. Despite being malignant in nature, the diagnosis if often delayed and is already severe at presentation.

CASE
We present a 16-year-old male with background of delayed developmental milestones presenting with recurrent seizures. On physical examination, there were no syndromic features, bony deformities or neurological deficits. Laboratory examination revealed severe hypercalcaemia (3.64 mmol/L), low serum phosphate (0.4 mmol/L), elevated serum ALP (2121 U/L), normal range for 16-year-old male: 68-430 U/L) and a normal renal profile. Serum intact parathyroid hormone (iPTH) was elevated (186 pg/ml, normal range: 15-57 pg/ml). The 25-hydroxy vitamin D was normal (75.59 nmol/L). Thyroid function test was also normal. Ultrasound of the neck revealed a hypoechoic lesion posterior to the right thyroid gland measuring 1.6 x 2.5 x 2.9 cm. Neck CT confirmed an enlarged right parathyroid gland measuring 1.9 x 3.0 x 2.6 cm with no evidence of adjacent organ infiltration. The 99mTechnetium (Tc) sestamibi scan was not performed due to patient's poor cooperation. Hypercalcaemia was managed with intravenous saline, iv pamidronate 90 mg and sc denosumab 60 mg. He underwent right parathyroidectomy and hemithyroidectomy with central lymph node dissection. Intra-operatively, the right inferior parathyroid was grossly enlarged and adhered to the right thyroid lobe and distal part of the right recurrent laryngeal nerve. Histopathology examination of the parathyroid gland confirmed a nodular mass weighing 5 g and measuring 30x28x9 mm with central cervical lymph node infiltration. The cytomorphological features with increased mitotic activity (11 per 50 hpf) and the presence of vascular invasion strongly favoured

the diagnosis of parathyroid carcinoma. Post operatively, the course was complicated with hungry bone syndrome. At discharge, the patient's iPTH and calcium level was reduced to 6.66 pg/ml and 2.20 mmol/L, respectively.

CONCLUSION

Size of parathyroid lesion, severe hypercalcaemia, significantly raised ALP and iPTH levels are clues to indicate parathyroid carcinoma as the cause of primary hyperparathyroidism.

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COVID-19 MOVEMENT CONTROL ORDER RELATED OSTEOPOROTIC FRACTURE AND VITAMIN D DEFICIENCY IN AN ADOLESCENT MALE

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INTRODUCTION/BACKGROUND

COVID-19 pandemic had caused major impacts on various aspects of our life. In Malaysia, Movement Control Order was imposed in March 2020. For almost 2 years, school-going children and adolescents were not able to attend schools physically and their physical activity was confined to their room or house on most days.

CASE

We describe a case of a 14-year-old male, previously active in sports, who sustained a low trauma fracture at the right femoral neck in November 2021 following a prolonged period of extreme sedentary life along with poor dietary intake during the COVID-19 pandemic period. He underwent open reduction and screw fixation for the fracture. Postoperatively, he was initially treated with suboptimal physiotherapy due to worry of fragility fracture. He was thin with a low BMI (15.62 kg/m^2) and significant loss of muscle bulk in all limbs. Further laboratory tests showed vitamin D deficiency (15.3 nmol/L) and the dual energy x-ray absorptiometry (DXA) showed low Z-score for total spine (-2.2) and total hip (-3.9). He was treated with activated vitamin D and vitamin D_3 replacement. He was later referred to a sports physician for individualized post-operative rehabilitation. By then, he had a 2 cm shortening of the affected limb, which required a customized shoe for correction of the limb length discrepancy. With the customized shoe, he was able to progress his physical activities gradually, from brisk walking to slow jog then later running and cycling outdoors. Successive clinic visits showed remarkable improvement in physical fitness, sports participation and normalization of vitamin D levels. With guidance from a sports physician, he was able to resume sports activities eventually without limitation or difficulty. Repeated DXA scans within one year showed significant improvement.

CONCLUSION

Physical activity and vitamin D are important essentials in bone growth and bone health in adolescents.

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A RARE CASE OF NONFUNCTIONING APPENDICEAL NEUROENDOCRINE TUMOUR (ANET) WITH BASE INVOLVEMENT NEEDING HEMICOLECTOMY

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INTRODUCTION/BACKGROUND

Appendiceal neuroendocrine tumour (ANET) is the commonest appendiceal tumour found in 0.2–0.7% of surgical resections for suspected appendicitis. Peak incidence is at age 40-50 years with slight female preponderance. If diagnosed at a lower stage, survival is extremely good; local disease has 5- year survival rate (5-YSR) of between 95–100% and regional disease has between 85–100% 5-YSR. However, cases with distant metastasis present with relatively poor survival figures with 5-YSR less than 25%.

We report a rare case of a patient with ANET with involvement of the base of the appendix needing further anatomical and functional imaging and right hemicolectomy.

CASE

A 45-year-old female presented with acute right iliac fossa pain of less than 24 hours of duration with vomiting which led to a diagnosis of presumed appendicitis. She underwent laparoscopic appendectomy and intraoperatively was found to have adhesions with the abdominal wall and the appendix was only mildly inflamed. Histologic examination confirmed neuroendocrine tumour of the