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Research Paper Medical Science

Atypical presentation of Hyperparathyroidism A case report

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ABSTRACT

A case report on a patient who was diagnosed to have hyperparathyroidism. Patient came with complaints of low back ache, generalised weakness, and difficulty in walking. After thorough clinical examination and serial investigations she was diagnosed to have primary hyperparathyroidism.

Treatment- surgical excision of parathyroid adenoma and was on calcium supplements

Fallow up-regular fallow up on monthly interval all her investigations came back to normal

Results -had a significant recovery. Patient was able to do her routine activity.

Key word : Hyperparathyroidism, Surgical Excision, Calcium Supplements

Introduction

Parathhormone is secreted by chief cells of the parathyroid gland.The principal regulator of Patathormone secretion in the Extracellular fluid (ECF) is ionized calcium concentration.The regulation of PTH is mediated by calcium sensing receptor (CASR)

Plasma Parathormone concentrations exhibit diurnal variation.They are stable during the afternoon and evening.They rise around 50% around 2:00 am and subsequently fall below 50% of the afternoon values by 9:00am.

Parathyroid hormone binds to cell surface receptors in its target tissues.The two principal target tissues are bone and kidney where it activates adenylate cyclase and phospholipase C

Actions of Parathormone:

On bone:

Stimulates osteoclastic activity hence enhances the resorption of calcium from the bones Resorption of calcium occurs in two phases-

a) Rapid phase

b) Slow phase

Rapid phase- occurs within minutes

Causes increased permeability of osteoclasts and osteoblasts for calcium

Slow phase- Occurs by activation of osteoclasts

When the osteoclasts get activated they release proteolytic enzymes and acids leading to digestion of the organic matrix

On kidneys

a) Reduces proximal tubular resorption of phosphate

b) Increases the distal tubular reabsorption of calcium

C) Formation of 1, 25-dihydroxycholecalciferol from 25-hydroxycholecalciferol

On GI tract

Parathormone increases the absorption indirectly by forming 1,25-dihydrocholecalciferol in the kidneys.Parathormone causes activation of Vitamin D

Parathormone-controls extracellular calcium and phosphate concentrations

Excess activity leads to hypercalcemia

Reduced activity leads to hypocalcemia

Figure 1:

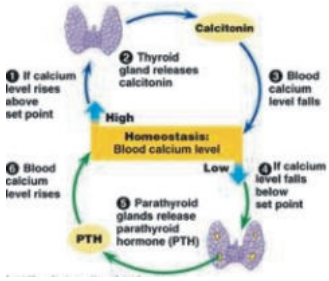
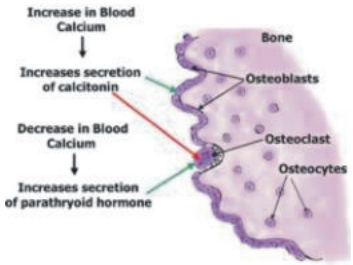


Figure.2



A Case Report

Role of Calcium and Parathyroid Hormone in a Patient with weakness of both the upper and lower limbs

Case back ground:

A 42 year old patient from Sullia Karnataka Presented with weakness of both the upper and lower limbs

History of presenting illness:

Patient was apparently normal 4 years ago later she noticed weakness of both the upper and lower limbs;it was insidious in onset and gradually progressive. She approached many local hospitals where she was advised conservative treatment. Weakness gradually progressed and she was later referred to our hospital.

Past history:

Patient gives history of fall 8 years ago following which she sustained a closed injury to her back. No history of any surgery in the past.Patient is not a known case of diabetes mellitus, hypertension, and tuberculosis

Menstrual History-She attained menarche at 14 year

Family History- Both of her brothers were suffering from similar complaints

Personal history-

Diet-mixed

Appetite normal

Sleep normal

Bowel / bladder habits normal

Substance abuse nil

General physical examination-

Patient is moderately built and nourished conscious and cooperative

No pallor, icterus, cyanosis, clubbing, lymphadenopathy

Bp: 130/80, pulse: 88bpm

CVS, RS, CNS, PA: no abnormality detected

Local Examination:

Inspection: No abnormality seen in the neck

Palpation : Nodular swelling in the region of lower pole of left lobe of thyroid measuring of about 3×2cm, moving with deglutition , non tender , firm , deep to SCM . No other palpable swelling in the neck

Normal carotid pulses, trachea centrally located

Figure 3 : Local Examination of the Lumbar Spine

Inspection: Kyphoscoliosis to the left side present.

No scar sinus, swelling

No step/gibbus

Figure 4

Palpation:

No local rise of temperature

Diffuse tenderness present over the dorsal spine

Movements: could not be elicited

Neurology:

Patient is alert and conscious

Higher mental functions are normal

No neck rigidity

Kernincks and brudzinkis sign is negative

Cranial nerve examination: normal

Tone and bulk normal

Motor examination: both upper limbs grade iv

Both lower limbs: grade iii

Reflexes normal

Table 1:

INVESTIGATIONS	RESULTS
HB	-10.9gms %
TC –	7500 cells/cu mm
DC	n-60%, l- 36%, e -3%, m-1%
ESR –	100 mm/hr
PCV-	35.3%
Platelet count –	2.39 lakh / cu mm
Blood group –	A+ve
Urine –	wnl
RBS –	96mg%
B. Urea –	28 mg%
S. Creat –	1.1 na139 k4.3 cl – 101meq/l
Serum albumin:	20/9-3.2 10/11-3.2 11/11/2010- 3.4 gm/dl
Serum calcium:	20/9- 12 9/11-12.4 16/11- 12.8 23/11/2010 - 11.2 mg/dl
Serum phosphorus	24/9/2010- 2.5 mg/dl
Alkaline phosphate	24/9- 1700 11/11/2010- 1700 u/l
PTH	29/9/10:-1596.9 pg/ml
Urine spot:	96.3mg/dl
Urine calcium :	48.6mg/dl
25 –OH Vitamin	D3- 16.5 ng/ml (11.1-42.9)
SGOT:	26 U/L
SGPT:	08 U/L
Total protein:	6.3 gm/dl
Serum albumin:	3.2 gm/dl
Serum globulin:	3.1 gm/dl
Total bilirubin :	0.8 mg/dl
Direct bilirubin :	0.4 mg/dl
Indirect bilirubin:	0.4 mg/dl
HIV, HbsAg –	negative
Chest X-ray –	Normal
ECG -	Normal
Peripheral smear –	normocytic hypochromic blood picture
Usg neck-	left inferior parathyroid adenoma
Usg abdomen –	multiple bilateral renal calculi
Urine metanephrosis: .	15 (0-0.9)

X ray-

Figure 5: Classical subperiosteal cortical resorption of the middle phalanges

Figure 6: Biconcave vertebral body due to the bulging of disc 'cod fish spine'

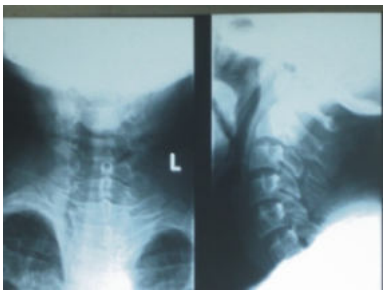


Figure 7: Pseudo fractures in the looser zones

Figure 8: Stippling calcification 'pepper potskull' (salt pepper) appearance

Figure 9: Generalized rarefication with cystic lesions, otitis fibrosacystica and brawns tumor

Figure.10:

She was diagnosed to have Primary Hyperparathyroidism and excision of the parathyroid adenoma was done

Figure 11:

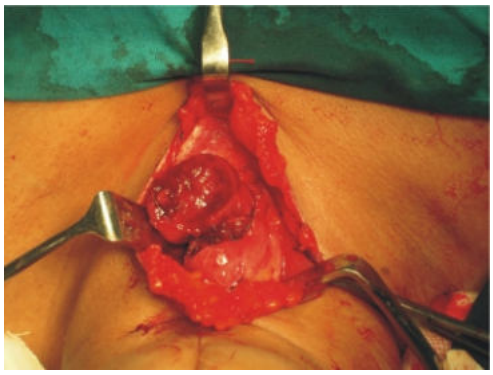


Figure.12:

Post operative
Patient was started on oral calcium and multivitamins
During her postoperative fallow-up
Following were the investigations
Table.2:

INVESTIGATIONS	RESULTS
PTH	2/12/10: 17.8 pg/ml (14-72)
Serum calcium	2/12/10:8.9mg/dl
Urine calcium:	2.4
PTH	2/12/10: 17.8 pg/ml (14-72)
Serum calcium	2/12/10:8.9mg/dl
Urine calcium:	2.4
Urine creatinine:	22.6
Subsequent fallow up was done on monthly bases2/1/11	Patient was symptomatically better Vitals stable General condition fair Neurology – power grade 4 on all four limbs
Serum calcium	2/1/11:8.8mg/dl
Urine calcium:	2.4
PTH	2/1/11: 17.0 pg/ml (14-72)
Subsequent follow up was done on monthly basis 2/3/11	Patient was symptomaticallybetter Vitals stable General condition fair Neurology –power grade 4 on all four limbs
Serum calcium	2/3/11:8.7mg/dl
Urine calcium:	2.4
PTH	2/3/11: 17.0 pg/ml (14-72) 2/5/11
Patientwassymptomatically better Vitals- stable General condition fair Neurology – power grade 4 on all four limbs	
Serum calcium	2/5/11:8.8mg/dl
Urine calcium:	2.4
PTH	2/5/11: 17.4 pg/ml (14-72 1/7/11
Patientwas symptomaticallybetter Vitals stable General condition-fair Neurology –power grade 4 on all four limbs	
Serum calcium	1/7/11:8.9mg/dl
Urine calcium:	2.2
PTH	1/7/11: 17.6 pg/ml (14-72

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