

Physical signs of hypocalcemia

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CASE REPORT

A 43-year-old female presented to the emergency room with perioral numbness, facial paresthesia and cramps of bilateral hands and feet. Three days prior, she had undergone total thyroidectomy for multinodular goiter. Her symptoms persisted despite taking 10 tablets of 750 mg Tums (antacid containing calcium carbonate). Her other medications included levothyroxine, liothyronine and high dose ergocalciferol weekly. Physical examination revealed Chvostek sign (Video 1) and Trousseau sign (Figure 1 and Video 2). Labs revealed serum calcium of 7.2 mg/dL (normal range 8.6–10.3 mg/dL), ionized calcium 0.84 mmol/L (normal range 1.15–1.33 mmol/L), phosphorus 6.1 mg/dL (normal range 2.1–5 mg/dL), parathyroid hormone 2 pg/mL (normal range 12–88 pg/mL), vitamin D2 24.4 ng/mL (normal range > 20 ng/mL), albumin 3.9 g/dL (normal range 3.5–5.7 g/dL), bicarbonate 28.6 mEq/L (normal range 21–31 mEq/L), magnesium 1.7 mg/dL (normal range 1.9–2.7 mg/dL). Her symptoms resolved with intravenous calcium gluconate. She was started on oral calcitriol, ergocalciferol, magnesium oxide and Tums and was discharged on same.

Video 1: Chvostek sign.

Video 2: Trousseau sign.

Videos URL: vjinternalmedicine.com/2017-articles-archive/100001VAM07BT2017-BT/100001VAM07BT2017-BT-full-text.php.



Figure 1: Trousseau sign.

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DISCUSSION

Hypocalcemia occurs in about 27.4% of patients after total thyroidectomy [1]. Chvostek and Trousseau signs are signs of hypocalcemia which occur because of neuromuscular irritability from hypocalcemia. Chvostek sign manifests as the twitching of facial muscle on tapping over the area of facial nerve [2]. Trousseau sign manifests as carpal spasm in upper extremities as a result of

ischemia induced by inflating sphygmomanometer cuff to suprasystolic blood pressure for 25–60 seconds [2, 3]. Unlike Chvostek sign which is neither sensitive (absent in one-third of cases with hypocalcemia) nor specific (present in 10% population with normal calcium level) for hypocalcemia, Trousseau sign is much more sensitive and specific for hypocalcemia as it is present in 94% cases with hypocalcemia and just 1% of people with normal calcium level [2]. However, in a study by Hosseini et al, Chvostek and Trousseau signs were found respectively in only 11.8% and 23.5% patients with hypocalcemia after total thyroidectomy. The same study reported that the average time of onset of hypocalcemia was 41.25 ± 11.5 hours after thyroidectomy [4] suggesting that these patients should be closely monitored during this period.

CONCLUSION

Chvostek and Trousseau signs are physical signs of hypocalcemia which may occur after thyroidectomy. Serum calcium level, PTH level and physical examination may help detect hypocalcemia after thyroidectomy.

Keywords: Chvostek, Hypocalcemia, Trousseau, Thyroidectomy

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The corresponding author is the guarantor of submission.

Conflict of Interest

Authors declare no conflict of interest.

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