HIGH CLINICAL SUSPICION IS REQUIRED TO DIAGNOSE HYPER PARATHYROIDISM

Suresh Reddy Thupakula¹, Alok Mazumdar²

¹Post Graduate, Department of General Surgery, Seven Hills Hospital, Visakhapatnam. ²HOD, Department of General Surgery, Seven Hills Hospital, Visakhapatnam.

ABSTRACT

INTRODUCTION

Patients with primary hyperparathyroidism (elevated parathyroid hormone-PTH) generally have nonspecific complaints. The calcium levels may be normal. Due to these vague complaints, patient diagnosis is often delayed and patient gets treated symptomatically for these complaints. Hence, a high degree of suspicion is required to diagnose by the treating physician. We report a case of right inferior parathyroid adenoma with primary hyperparathyroidism presenting with elevated PTH with normal calcium level and vague complaints, being treated initially by physician for vague nonspecific complaints.

KEYWORDS

Hyperparathyroidism, Parathyroid adenoma, Normocalcemic hyperparathyroidism.

HOW TO CITE THIS ARTICLE: Thupakula SR, Mazumdar A. High clinical suspicion is required to diagnose hyper parathyroidism. J. Evid. Based Med. Healthc. 2016; 3(10), 292-294. DOI: 10.18410/jebmh/2016/71

INTRODUCTION: Parathyroid hyperplasia is the third most endocrine disorder after diabetes and thyroid diseases. Females are most commonly affected.^{1,2} It is difficult to understand why hyperparathyroidism is not being recognized more frequently. It requires high degree of clinical suspicion.³ Solitary parathyroid adenoma is the commonest cause of primary hyperparathyroidism.⁴ Patients presenting with low backache, joint pains, generalized muscle pain, fatigue should be evaluated, keeping in mind the diagnosis of hyperparathyroidism. Once diagnosed it can be treated by minimal invasive parathyroidectomy. Histologically parathyroid adenomas are composed of functioning parathyroid tissue containing a mixed population cell population, consisting primarily of chief cells.⁴ We present one such case where delay in diagnosis has lead to considerable morbidity to the patient.

CASE REPORT: A 55 year old female patient, who presented to us with generalized muscular pain, bilateral knee joint pain and low backache since 3 years. She had visited many doctors and was being treated symptomatically and also on ayurvedic medication (indigenous medicine) for last 2years without any relief. She finally consulted an Endocrinologist, who suspected, evaluated her to find-elevated Parathyroid hormone-924.8pg/ml (14-72pg/ml), elevated Alkaline phosphatase level-2106 IU/L (40-306 IU/L). However the calcium level is 10.1 mg/dl (8.5-11mg/dl), low vitamin D level-5.94ng/ml (30-100ng/ml).

A Computerised tomographic scan of neck demonstrated nodular lesion in right lobe of thyroid, features in favour of parathyroid lesion (fig. 1). 99m-Technetium sestamibi

Submission 07-01-2016, Peer Review 21-01-2016, Acceptance 29-01-2016, Published 04-02-2016. Corresponding Author: Dr. Suresh Reddy Thupakula, D. No. 29/1440, Vidyanagar 6th Lane, Kothapeta, Vinukonda, Guntur-522647, Andhra Pradesh. E-mail: sureshreddy@doctor.com DOI: 10.18410/jebmh/2016/71 (MIBI) scan also showed parathyroid hyperplasia involving right inferior gland (fig. 2). She also had history of hypothyroidism for the last 5 years and was on levothyroxine $75\mu g$.









Patient underwent a minimally invasive parathyroidectomy (limited exploration of neck also known as Focused parathyroidectomy) under general anaesthesia

Case Report

Jebmh.com

in which complete removal of the right inferior parathyroid was done (fig. 3, 4). The specimen was 2x2cm reddish brown in colour. Post-operative recovery was uneventful and PTH level in postoperative period became normal (60pg/ml). Histopathology report suggestive of parathyroid adenoma (fig. 5, 6).



Fig. 3



Fig. 4



Fig. 5



Fig. 6

DISCUSSION: Hyperparathyroidism is most commonly seen in women, the most common presentation being non-specific symptoms like fatigue, depression, lethargy, etc.² About 36% of patients presents with nephrolithiasis. Osteoporosis accounts for 15% which may manifest as mild initially followed by severe osteitis fibrosa cystica.⁵ In our case the presentation is of vague non-specific symptoms of generalized muscular pain, bilateral knee joint pain and low backache.

Hyperparathyroidism is usually associated with hypercalcemia and elevated PTH level. 15% of patients may have normal calcium levels but elevated PTH level.⁽⁶⁾ Our case too it was "normocalcemic hyperparathyroidism". This is one reason which makes the diagnosis difficulty at times. However these patients are also prone to develop bone and renal manifestations.

Diagnostic workup includes serum Calcium, Parathyroid hormone, Vitamin D, Phosphorus, Alkaline phosphatase level, urinary calcium. Localisation of gland is done initially by Ultrasound of neck region. CECT neck or 4D CT scan may also help in localisation of abnormal gland. The gold standard test for diagnosis is 99m-Technetium sestamibi (MIBI) scan. In certain cases preoperative venous PTH sampling is also done for localisation of abnormal gland.

The surgical practice has changed from bilateral neck exploration as there were no advanced radiological imaging available to localize the abnormal gland to Focused Parathyroidectomy invasive or minimally parathyroidectomy.7 In Focused or Limited Parathyroidectomy the main aim is to localise of the abnormal gland and to perform the surgery through a limited incision directly over the area of abnormal gland, as in our case. Preoperative localization of the abnormal gland helps in Focused Parathyroidectomy. Intraoperative PTH measurement combined with surgery gives a 98% chance of cure.⁸ Another advantage over bilateral four gland exploration is that it minimize the risk of post-operative hypoparathyroidism and recurrent laryngeal nerve injury.

Follow up of patients post operatively is easy and requires monitoring of PTH, screening Calcium level, Vitamin D at regular intervals. Patient at 6 months and one year is doing well with normal biochemical parameters and symptom free.

CONCLUSION: One should be aware that these nonspecific symptoms could be also due to hyperparathyroidism with the advent of biochemical assays to measure serum calcium and parathyroid hormone, clinicians could identify the disease in patients before the onset of overt physical manifestations because of end organ disease. There is no reason why the successful experience of the relatively few groups who recognize this condition routinely cannot be duplicated elsewhere.

Jebmh.com

REFERENCES:

- 1. Shukla S, Kaushal M, Shukla S. Primary hyperparathyroidism: retrospective 10-year study of 32 cases. Indian Journal of Surgery 2008;70(4):169-174.
- 2. Mousumi Som, Jeffrey S Stroup. "Primary Hyperparathyroidism and Pregnancy." Proceedings Baylor University. Medical Center 2011;24(3):220–223.
- 3. Marden B. Recognition of hyperparathyroidism editorial in AJS. 1958;Vol 96.
- Piggott R, Waters P, Ashraf J, et al. Water-clear cell adenoma: A rare form of hyperparathyroidism. International Journal of Surgery Case Reports 2013;4(10):911-913.
- Anurag Ranjan Lila, Vijaya Sarathi, Varsha Jagtap, et al. "Renal manifestations of primary Hyperparathyroidism." Indian Journal of Endocrinology and Metabolism 2012;16(2):258–262. PMC. Web. 2 Jan. 2016.

- Stuart H, Harvey A, Pasieka J. Normocalcemic hyperparathyroidism: preoperatively a disease, postoperatively cured? The American Journal of Surgery 2014;207(5):673-681.
- Lombardi C, Raffaelli M, Traini E, et al. Video-assisted minimally invasive parathyroidectomy: Benefits and long-term results. World J Surg 2009;33(11):2266-2281.
- Mohebati A, Shaha A. Imaging techniques in parathyroid surgery for primary hyperparathyroidism. American Journal of Otolaryngology 2012;33(4):457-468.