



Primary Hyperparathyroidism: Still an Overtly Symptomatic Disease

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Abstract

Introduction: Primary hyperparathyroidism (PHPT) is a condition in which there is inappropriate increase in serum PTH in spite of increase in serum calcium. It is the commonest cause of hypercalcemia in an outpatient setting. Though it is mostly asymptomatic at presentation in high income countries, it is still overtly symptomatic in our part of the world (1).

Materials and Methods: A retrospective study of 46 patients who underwent surgery for PHPT from 1st January 2014 to 31st December 2014 was done and data was recorded and analysed.

Observation and Results: A total of 46 patients diagnosed with PHPT underwent surgery during the mentioned period. 26/46 were males and 20/46 were females. 26/46 (56.2%) presented before 5th decade of life. The commonest organ system involved at presentation was renal followed by musculoskeletal systems. After biochemical confirmation and localisation imaging, 28/46 patients underwent focused parathyroidectomy, 10/46 underwent full cervical exploration and 8/46 underwent combined surgery (due to concomitant thyroid pathology). The mean gland weight was 2.79 gm.

Conclusion: In conclusion, in our study, the disease presentation is overtly symptomatic and most often involving younger age group of patients. Renal system followed by musculoskeletal were commonly involved in our study.

Keywords: PHPT- Primary hyperparathyroidism, focused parathyroidectomy

Introduction

Primary hyperparathyroidism (PHPT) is a condition where there is an inappropriate increase in serum PTH in spite of elevated levels of serum calcium. PHPT is one of the differential diagnoses for hypercalcemia. It is the commonest cause of hypercalcemia in the outpatient setting(1).

PHPT presents as asymptomatic disease in the high income countries which is primarily due to the advent of autoanalyser and routine measurements of calcium in annual health check up. However this is not true for the middle and low income countries where most of the presentation is still in form of overt symptoms. In India, PHPT is usually diagnosed when the symptoms are more florid. The famous pentad of 'painful bones, kidney stones, abdominal groans, psychic moans, and fatigue overtones' still holds true in an Indian scenario.(1-3)

In this study, we present a retrospective study of 46 cases of PHPT managed over a period of one year at the department of Endocrine Surgery at Christian Medical College and Hospital, Vellore, a tertiary care centre.

Materials and Methods

A retrospective review of records of 46 patients who underwent surgery for PHPT from 1st January 2014 to 31st December 2014 was done and data was recorded and analysed. Clinical data recorded included age at presentation, gender of the patient, spectrum of clinical presentation, weight of excised gland and biochemical data which included pre operative serum calcium, serum PTH and Vitamin D, post operative serum calcium, PTH.

All patients, after biochemical confirmation, underwent imaging to localise the disease which is mostly ultrasound scan of the neck and Sestamibi scan. If the imaging was concordant (both imaging modalities localised to single affected gland), then they underwent focused parathyroidectomy else they underwent a full cervical neck exploration. In cases which were known to be familial like MEN1 syndrome, the patients were planned for upfront full cervical exploration with 3 gland excision and bilateral cervical thymectomy.

Results

A total of 46 cases that underwent surgery during the mentioned period were retrospectively analysed.

Of the 46 cases, 26(57%) patients were males and 20 (43%) were females.

The age at presentation showed that 26/46(56.52%) of the patients were before 5th decade of life and 39/46(84.78%) presented before 6th decade of life (Figure1).

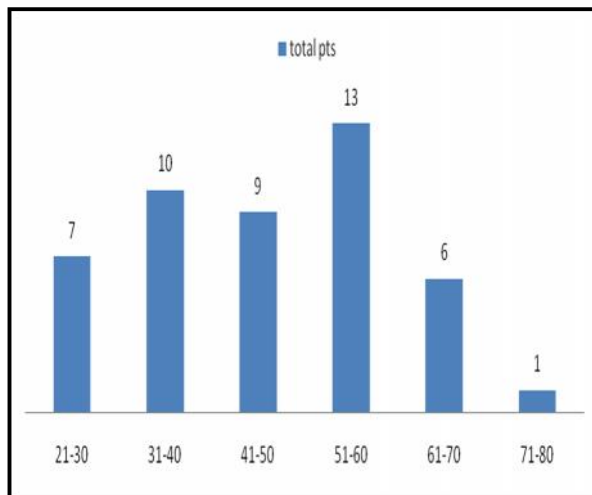


Figure 1: Age at presentation

Most common clinical presentation in this group of patients was renal symptoms followed by musculoskeletal symptoms. In this group of patients, 28 patients had renal symptoms, 21 had musculoskeletal symptoms, 10 had GI symptoms, 5 had neuropsychiatric symptoms and 5 patients were asymptomatic for disease at presentation (Figure 2).

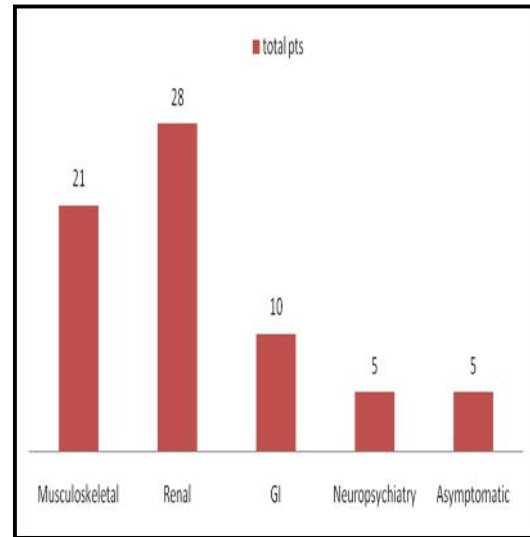


Figure 2 : Clinical presentation

Amongst the renal symptoms, symptomatic renal calculi followed by recurrent urinary tract infections were common. In the group of patients with musculoskeletal symptoms, most of the patients had bony pains, some had fractures and some had 'brown tumors'. 3/10 patients in the GI symptoms group presented with pancreatitis. Amongst the neuropsychiatric symptoms, forgetfulness, short temper and insomnia were the common presentations. It was observed that many patients had more than one end organ involved at presentation (Figure 3). As 5 patients were asymptomatic at presentation, they were recorded as 0 target organ involvement.

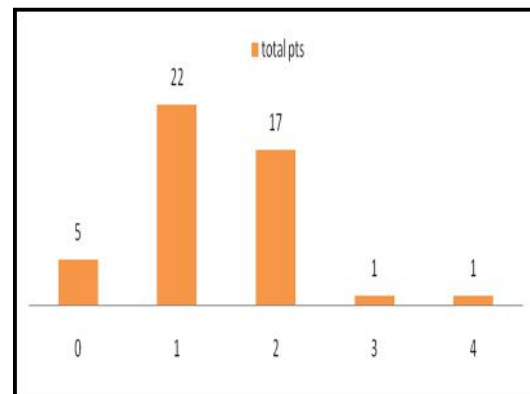


Figure 3: Total target organs involved

Out of the 46 parathyroid surgeries done in the aforementioned period, 10/46 were full cervical exploration, 28/46 were focused parathyroidectomy and 8/46 were combined with thyroid surgery due to concomitant pathology. 22/28 of the focused parathyroidectomies were done under local anaesthesia (Figure 4).

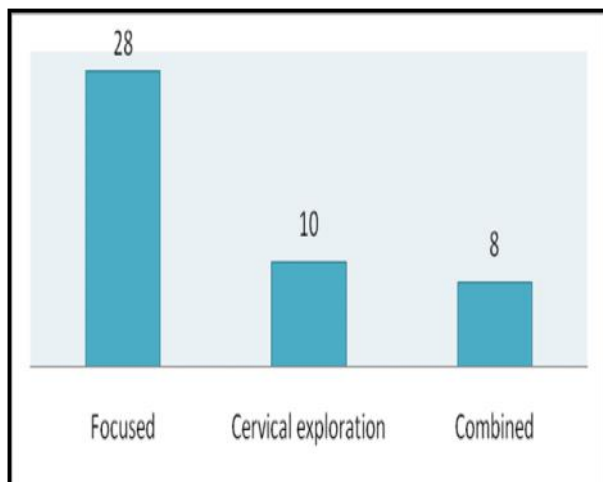


Figure 4: Types of surgery

2/46 patients in our study had failed procedure at first attempt. However they underwent re- exploration at a later date and both attained biochemical normalisation at end of procedures.

The data regarding the weight of the excised glands were recorded. This revealed that quite a few of the glands measured more than 2gm i.e 18 out of 52 glands that were excised. The mean gland weight in our study was 2.79 gm (some patients had hyperplasia and hence more than one gland was excised) - Figure 5.

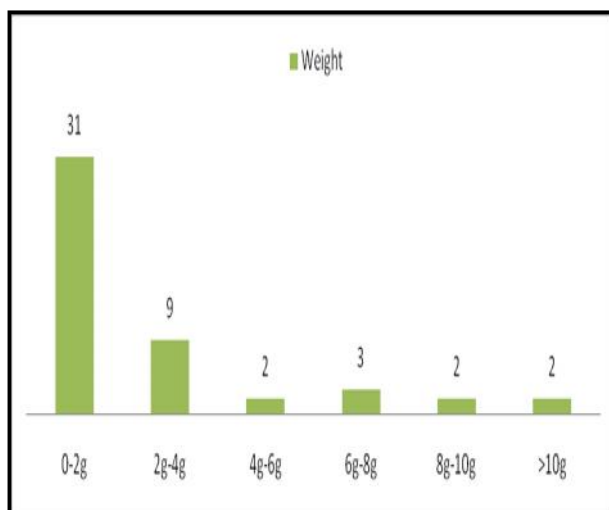


Figure5: Weight of the gland excised

The following table (Table 1) represents the mean pre and post operative serum calcium and serum PTH. Almost all patients had their Serum Vitamin D measured at presentation, the mean of which was 17.78ng/ml.

BIOCHEMICAL VALUES	PRE OPERATIVE	POST OPERATIVE
S.CALCIUM (mean)- mg/dl	11.29	9.22
S.PTH(mean)- pg/ml	456.64	9.12
S.VITAMIN D (mean)- ng/ml	17.78	

Table 1: Biochemical values

Discussion

In our study, the male: female ratio was 1.3: 1. This is different from what is documented in literature where the females are usually affected twice as commonly as males(1). More than half of our patients presented before 5th decade of life which is also different from the high income countries where the common age at presentation is 5th and 6th decade(3).

As shown in the results, the clinical spectrum of presentation in our group of patients is still symptomatic. Only 5/46 patients were in the asymptomatic group. Most of the patients had one or more target end organ involvement at presentation. Amongst the clinical presentation, the renal symptoms were most common. It is quite different from the high income countries where the majority of patients are asymptomatic at presentation. However there are studies done in India which show results similar to ours (1,3).

In our study if the pre operative localisation imaging was concordant and there was no associated thyroid pathology, the procedure of choice was focused parathyroidectomy. In our study, about 61% of the patients underwent a focused parathyroidectomy which is higher than documented in similar studies where it was 38%(3).

The mean gland weight in our study was higher than those documented in similar studies(4).

Conclusion

In conclusion, it was noted that in our group of patients, PHPT was seen at a younger age, more in males than females. Also that the clinical presentation is still in form of overt symptoms with renal system being most common system involved in our study.

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