

# Fish Bone that Hooked an Adenoma-Primary Hyperparathyroidism

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## ABSTRACT

Primary hyperparathyroidism (PHPT) usually presents with one of the classical symptoms of hypercalcemia - painful bones, psychic moans, abdominal groans or renal stones. It is well known that many a times PHPT can be asymptomatic. Asymptomatic parathyroid disease is identified on screening, when calcium is found elevated or when bone density is found to be unusually low. Impacted fish bone being a reason for neck imaging and thereby leading on to a diagnosis of PHPT is uncommon. Here we present the unusual way in which a left inferior parathyroid adenoma was diagnosed in a 51 year old lady.

**Keywords:** Parathyroid adenoma, Hypercalcemia, Hyperparathyroidism, Foreign body, Fishbone.

## INTRODUCTION

Primary hyperparathyroidism (PHPT) is an endocrine disorder characterized by hypercalcemia and excessive secretion of parathyroid hormone (PTH).<sup>1</sup> It is most commonly caused by a single or multiple adenoma of the parathyroid gland. Patients with PHPT tend to develop complications such as reduction of bone mineral density leading to fractures, nephrolithiasis, and gastric ulcer.<sup>1</sup> In the management of PHPT, parathyroidectomy of the abnormal gland is the gold standard for effective treatment.<sup>2</sup>

Asymptomatic PHPT mainly affects women in their 5<sup>th</sup> decade. The disease usually presents within the first decade of menopause and is often asymptomatic.<sup>3</sup>

PHPT has become an asymptomatic disease in the Western world with the introduction of routine calcium screening. However,

asymptomatic disease was not observed in India<sup>4</sup> until recently.

## CASE REPORT

A 51 years old lady presented to the gastroenterology department with complaints of foreign body sensation in the throat for 3 days. She reported that her symptoms started after she consumed fish, and had felt something getting stuck in her throat, but could not find it on examination. She had dysphagia and hence came for an evaluation. She was evaluated with computerized Tomography scan (CT) of her neck which showed a well-defined curvilinear, hyperdense, vertically oriented foreign body, with broad superior end, impacted in cervical esophagus, at the level of C7-D1 vertebrae. There was no pneumomediastinum or mediastinal collections. She was taken up for oesophago-

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gastro duodenoscopy and foreign body retrieval under monitored anesthesia care. A fish bone was removed successfully. However the CT scan showed nodules in the thyroid region (Figure 1). For better delineation, ultrasonography (USG) was performed and this showed multiple isoechoic nodules with few nodules showing partial colloid degeneration in both lobes of the thyroid gland, the largest measuring 1.6 x 0.9 cm in the right and 0.4 x 0.3cm in the left. There was also a well defined oval hypoechoic nodule measuring 2.0 x 0.9cm in the posterior aspect of the left lobe, abutting its lower pole, which was suspicious of a Parathyroid adenoma.

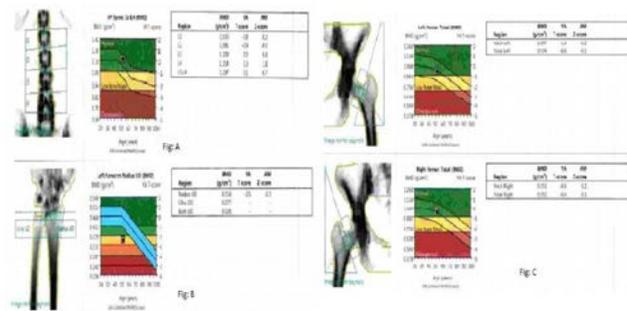
She was then referred to the Endocrinology department for further evaluation and management.

She had a history of minor renal calculi 15 years ago. She never had fractures in the past and there was no family history of multiple endocrine neoplasia. She did not have galactorrhea. She was perimenopausal and her last menstrual period was 4 months ago. She was not on any calcium supplements. There was no family history of renal calculi or thyroid dysfunction. She was not on any other vitamins or medications. She is married and has three children and last childbirth was 15 years ago.

She was advised to do calcium parameters which showed hypercalcemia, hypophosphatemia, high parathyroid hormone (PTH), and vitamin D deficiency. (Table 1)

Bone densitometry showed normal density at the hip and spine but low density with T score -2.5 at left wrist Figure 2. This suggested differential osteoporosis in the

SI no.	Test	Result	Normal range
1	Calcium	11.42 mg/dL	8.70 - 10.70
2	Albumin	4.46 g/dL	3.50 - 4.80
3	Phosphorus	2.43 mg/dL	2.50 - 4.50
4	Vitamin D	17.6 ng/mL	30.0 - 100.0
5	PTH	202.2 pg/mL	6.0 - 80.0
6	Cortisol	148 ng/mL	52-350
7	Prolactin	84 µIU/mL	66-490
8	Alkaline Phosphatase	59 U/L	30 - 120
9	Calcium, Spot urine	9.70 mg/dL	
10	Creatinine, Spot urine	33.3 mg/dL	15.0 - 278.0
11	Calcium/creatinine ratio	0.29	0.00 - 0.33



**Figure 2: Bone Mineral Density by Dual Energy Xray Absorptiometry**

cortical bone which is usually seen in hyperparathyroidism. She was evaluated for MEN and this was ruled out. PHPT was confirmed and she was subjected to a functional parathyroid scintigraphy. Sestamibi scan showed a MIBI avid hypermetabolic lesion in relation to the left lower pole of the thyroid gland, suggestive of a left inferior parathyroid adenoma. This was concurrent with the ultrasonogram. She was advised to start on Vitamin D supplements and good hydration. Meanwhile, surgery was planned and she underwent the same uneventfully. On exploration of the neck, a left inferior Parathyroid adenoma was identified and multiple small bilateral thyroid nodules. Excision of the Parathyroid adenoma and total thyroidectomy was done (Figure 3). Postoperatively, serum parathyroid hormone was very low, but recovered to normal range by the second postoperative week.



**Figure 1: CT images of the neck showing the impacted fish bone as well as thyroid nodules.**

**DISCUSSION**

Parathyroid adenoma, a benign tumor is the commonest cause of hypercalcemia. Primary hyperparathyroidism (PHPT) can occur as an isolated entity or as part of multiple endocrine neoplasia (MEN).



**Figure: 3** Left inferior Parathyroid Adenoma seen intraoperatively.

Most patients present with symptoms of hypercalcemia, whereas very few are detected on screening (bone disease 77%, renal disease 36%, and 5.6% asymptomatic).<sup>4</sup>

Incidence appears to correlate with age, with the highest rates found beyond 55 years, and it is 3–4 times more frequent in females than in males. Overall incidence displays great variability within populations. Various studies worldwide estimate annual incidence rates of around 2–4 per 10,000 individuals, although other estimations have reached up to 80–90 per 10,000 with great fluctuations over time.<sup>5</sup> In asymptomatic patients, the diagnosis is made on serum calcium screening, however in this case the diagnosis was made when the patient was evaluated for an impacted fish bone.

## CONCLUSION

Asymptomatic parathyroid adenoma is not very common. However, evaluation of an impacted fish bone leading to the diagnosis and treatment of an adenoma is indeed a rarity.

## ACKNOWLEDGEMENT

This patient presented to the gastroenterology department of Believers Church Medical College Hospital, Thiruvalla, underwent evaluation and surgery at the same place. We

acknowledge all the staff and colleagues at Believers Church Medical College Hospital, who supported us to look after this patient. This patient was diagnosed by the Authors themselves.

## CONFLICT OF INTEREST

The authors declare that there is no conflict of interest.

## ABBREVIATIONS

**PHPT:** Primary hyperparathyroidism; **PTH:** Primary HyperParathyroidism; **CT:** Computerized Tomography; **C7-D1:** Cervical Dorsal Vertebrae; **USG:** ultrasonography; **MEN:** Multiple Endocrine Neoplasia; **MIBI:** Sestamibi scan.

## SUMMARY

This case report presents an unusual way in which an asymptomatic parathyroid adenoma was diagnosed.

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