CASE REPORTS

MINIMAL INVASIVE PARATHYROIDECTOMY IN A PATIENT OF PARATHYROID ADENOMA - A CASE STUDY

Syed Hashim Ali Inam, Hamza Jamil, Syed Khurram Shahzad*

Army Medical College/National University of Medical Sciences (NUMS) Rawalpindi Pakistan, *Army Cardiac Center, Lahore/National University of Medical Sciences (NUMS) Pakistan

ABSTRACT

Frequently, the kidney stones are treated without determining the root cause of kidney stones which leads to recurrence of the kidney stones. This is a case report of a forty nine years old male who developed nephrolithiasis secondary to parathyroid adenoma. This tumor was removed through a modern and an efficient technique called minimal invasive parathyroidectomy which proved to be more efficient and safe compared to the old techniques.

Keywords: Hyperparathyroidism, Minimal invasive parathyroidectomy, Parathyroid adenoma.

INTRODUCTION

Nephrolithiasis is the sixth most common disorder in Pakistan that requires surgery[1]. Previously, parathyroidectomy was performed by making an open incision on neck[2]. Inspection of all 4 glands was a requirement of the open incision procedure, with surgical excision of the defected gland. With the progress, the world is aiming at less invasive methods. Minimal invasive parathyroidectomy is a modern technique that ensures decreased recovery time, increased cosmetic outlook, and minimum complications[3,4]. The basic idea behind minimal invasion is that 90% of the primary hyperparathyroidism patients have only single diseased gland. The idea is to localize the diseased gland pre-operatively which is achieved by myocardial perfusion imaging (MIBI) scan and ultrasonography of the neck. The success rate of this technique when done through skilled surgeon reaches 90%[5].

CASE REPORT

We present a case of forty nine years old male who presented to urology OPD of AFIU with complaints of "Pain in the right lumbar region". Physical examination was unremarkable. Ultrasound KUB showed Multiple Radio dense opacities in right pelvis-suggesting multiple calculi in distal third Right Ureter. Faintly radio dense opacity is noted in Right Renal Area, small faintly radio dense opacity is also noted in Left Renal Area-suggesting bilateral Renal Calculi. Lab reports showed elevated calcium levels (10.7 mg/dL) decreased phosphate levels (0.7 mmol/L). Hypercalcemia and renal stones led to suspicion of hyperparathyroidism. Parathyroid hormones was also elevated (25.4 pmol/L). Differential diagnosis included chronic kidney failure, failure of the body to respond to PTH and vitamin D disorder. Ultrasonography neck showed 12mm x 10mm lesion in the left lobe of thyroid gland. Contrast Enhanced MRI Neck showed a well-defined small nodular lesion in the left lobe of thyroid gland posteriorly measuring 12 x 10 mm appearing hypo-intense on T1WS and hyperintense on T2WS and STIR sequence and showing contrast enhancement on post gadolinium sequences. MIBI scan was done which showed fairly large focus of intense tracer uptake at the level of lower pole of left thyroidal lobe. There was relatively diminished and heterogeneous tracer uptake. 2.5 hours delayed images demonstrate complete tracer washout from thyroid with persistent abnormal focal radiotracer retention in left lower parathyroid gland suggesting parathyroid adenoma. Past medical history, Carotid Doppler and chest x-ray were insignificant.

Correspondence: Dr Syed Khurram Shahzad, Classified Cardiologist, Army Cardiac Center, Lahore Pakistan
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Extra corporeal shock lithotripsy was done for the right kidney stones which led to the excretion of right renal calculus mass in two weeks. Minimal invasive parathyroid surgery was planned on date 30th June, 2015 under perioperative ultrasound guidance and perioperative PTH assay. Minimal Invasive Parathyroidectomy was performed. A focused lateral mini-incision approximately 2.0 cm in length was applied on left side

Figure-1: Ultrasound abdomen.

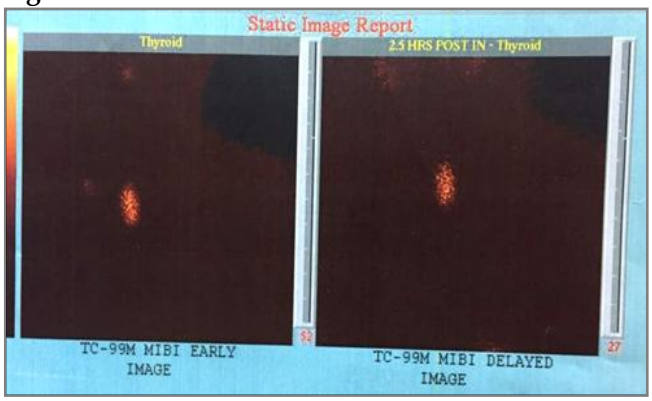

Figure-2: Parathyroid MIBI scan.

of the neck and left parathyroid gland was excised without the use of video endoscope. Excised specimen was sent for histopathology.

The surgery lasted 40 minutes. Patient made an uncomplicated recovery and was discharged the next day. Post-operative course was marked by an episode of hypocalcemia which was treated by calcium supplements and vitamin D supplements. Follow up ultrasound, PTH levels and calcium levels after one month were normal.

The excised specimen on histopathology had smooth cut surface, weighing 3 grams and measuring 3.8 x 1.9 x 0.7 cm. Section revealed a partially encapsulated benign tumor having a solid and focally nodular growth pattern composed of chief and oxyphil cells having mildly pleomorphic nuclei with inconspicuous nucleoli on microscope. No evidence of malignancy was seen.

DISCUSSION

Parathyroid tumors account for 2-5% of all cases of hyperparathyroidism[6]. Standard treatment of parathyroid tumor consisted of an open (4-gland) parathyroid exploration approach until the 1990s, when advancements in the diagnostic localization techniques made less invasive (less than 4-gland) exploration possible[4]. Many specialists prefer minimal invasive parathyroidectomy[7].

Minimal invasive parathyroidectomy offers a high success rate of >98% and low complication rate of approximately 1% when carried out by well-trained surgeons[3]. Focused excision of a single diseased parathyroid gland, which is guided by pre-operative diagnostic studies, and is performed through an incision measuring ≤2.5 cm[8-10].

This case report study signifies the importance of modern minimal invasive technique which should be applied in health care centers of Pakistan because it enables direct access to the parathyroid glands, maximizing cosmetic outlook and minimizing tissue damage. Proper screening should be done in cases of renal stones to determine the underlying cause to prevent its recurrence, morbidity and mortality.

CONFLICT OF INTEREST

This study has no conflict of interest to declare by any author.

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