Ectopic Parathyroid Adenoma in Thymus

Abstract
The atypical location of the adenoma of the parathyroid gland occurs not frequently. The most common place of the ectopia is the thymus. Many diagnostic methods have to be used to establish the point of the abnormal locality of the parathyroid gland adenoma. Among them are USG, CT, MRI and technetium 99m scan. We reported on the young woman with the unusual clinical case – the two parathyroid gland adenomas, one of which was located in thymus. The second adenoma was found only after primary surgical elimination of the first one, and absence of the hormone level normalization. It was located in thymus. The second surgery procedure was performed - thoracoscopic thymectomy. The patient completely recovered.

Keywords: Adenoma of the parathyroid gland; Ectopia; Thymus

Introduction
Adenoma of the parathyroid gland is a frequent cause of hyperparathyroidism. Ectopic location of the parathyroid gland occurs in 6-16% [1]. The most common location of ectopia is thymus, the next retroesophageal region and thyroid gland. There are many diagnostic methods to trace the parathyroid adenoma. These are – USG, CT, MRI and technetium 99m scan. We report on a 35 year old woman with two adenomas of the parathyroid gland one of them was located in thymus.

Case Report
The 35 year old woman was admitted to the division of thoracic surgery diagnosed with the Ectopic parathyroid gland adenoma in thymus. Special symptoms were not revealed. The level of parathyroid hormone was 765.2 pg/ml 9N 15.0-65.0 pg/ml, the level of ionized serum calcium was 1.82 mmol/l (1.16-1.32 mmol/l).

Analyses were performed in Synevo laboratory (www.synevo.ua)

Three months before the adenoma of right parathyroid gland was discovered by USG and the increased level of parathyroid hormone-615.8 pg/ml, ionized calcium-2.06 mmol/l. The patient had been operated in the division of head and neck tumors. The right lobe of thyroid gland and the parathyroid enlarged gland were eliminated. The histological examination showed adenoma of parathyroid gland.

The patient was operated first time in other hospital. There is a lack of the information of the reason of the performing the right lobe thyroid gland resection. The second adenoma was not detected in previous examinations. The technetium 99m scan was not performed. But instead of the decreasing level of the parathyroid hormone after two weeks following surgery the control had shown the increasing of the hormone level. Consequently the USG, CT, MRI and technetium 99m scan were performed.

The USG showed only post surgery condition- right thyroid lobe was eliminated, left parathyroid glands without pathology. CT-the ectopic parathyroid gland in thymus Figure 1. MRI-in the tissue of non involute thymus the knot formation 15x10x14 mm is visualized which is suspected as ectopic parathyroid gland Figure 2. According to the technetium 99m scan - the signs of ectopic parathyroid gland in the left side of thymus are present Figure 3.

The left side videothoracoscopic thymectomy was performed. The histological examination showed the parathyroid gland.
adenoma in the tissue of thymus. Figure 4. During the postoperative period no complications were presented. The level of parathyroid hormone one week after surgery decreased to 89.2 pg/ml.

**Discussion**

Primary hyperparathyroidism is more common among female then among male in the proportion 3 to 1. It is mostly caused by solitary adenoma (80-85%), double adenoma occurs in about 4% and multiple adenoma of parathyroid gland could be found in 10 to 15% of primary hyperparathyroidism [2]. According all said patients should be examined accurately in order to reveal all pathological lesions. The technetium 99m scan should be included to the examination plan as one of the high sensitive method [1-3]. The combination of CT or MRI with the technetium 99m scan can improve the diagnostic of the ectopic parathyroid adenoma with..
The evaluation of the parathyroid adenoma during surgery is important. The frozen section or gamma probe can be used [5]. But in case of ectopic adenoma the thin slice CT with contrast can be very helpful to localize the pathological lesion [6].

There are many surgical technics to eliminate the ectopic parathyroid adenoma. Thoracotomy, sternotomy or endoscopic methods can be used. We performed the thoracoscopic technology as the less traumatic. The goal of the surgery was the elimination of the non involute thymus with the parathyroid adenoma. The surgery was performed very carefully to prevent injuring of the nervi frenici, and vessels. We used the electrosurgical instruments prepare the thymus. No complications occurred during surgery. The endoscopic surgical technology can be successful used in the treatment of the ectopic parathyroid gland in the thymus.

Conflict of Interest
None.

References


