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Case Report

Bilateral Renal Cell Carcinoma and Thyroid Carcinoma with Tertiary Hyperparathyroidism, Clinical Case

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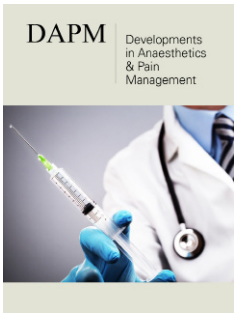
ISSN: 2640-9399



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Submission: October 28, 2020

Published: December 21, 2020

Volume 2 - Issue 1

How to cite this article: Chernyshev VA, Volchenko LV, Ulyanin MY, Mukhamedyarova GK and Sigal AM. Bilateral Renal Cell Carcinoma and Thyroid Carcinoma with Tertiary Hyperparathyroidism, Clinical Case. Dev Anesthetics Pain Manag. 2(1). DAPM. 000526. 2020.
DOI: 10.31031/DAPM.2020.02.000526

Introduction

Multiple primary tumors (MPT) are independent emergence and development of two or more neoplasms in one patient. In the structure of multiple primary cancer of the genitourinary organs in men most frequently there is a combination of two malignant neoplasms of the genitourinary organs (29,2%) with tumors of the gastrointestinal tract (25,0%) and tumors of head, neck and skin (25,5%), respectively [1]. While for men with multiple primary cancer of the genitourinary organs, the development of malignant neoplasms of the prostate glands (33% of cases), the bladder (29,4%) and the kidneys (21,4%) is somewhat less common, for women the kidneys (67,8%) and much less frequently of the bladder (22,6%) [2]. When planning the treatment of primary multiple malignant tumors, it is necessary to evaluate with special objectivity the possibilities of each method of anticancer treatment, the factors limiting its use, and the risk of complications. It is impossible to achieve a high degree of direct impact, suppression of the growth of one or all tumors at any cost without taking into account the prognosis for each of them. In particular, in the practice of oncologists in the treatment of bilateral renal cell carcinoma, the question arises about the possibility of using targeted therapy in patients with end-stage chronic renal failure who are on hemodialysis. However, clinical trials prior to 2017 did not lead to approval of targeted therapy in this group of patients [3,4].

Report

The article presents a case of diagnosis and surgical treatment in a patient who is in the end stage of chronic renal failure with developed tertiary hyperparathyroidism, with bilateral renal cell carcinoma, thyroid carcinoma, with successful use of targeted therapy.

Keywords: Bilateral renal cell carcinoma; Targeted therapy; Thyroid carcinoma; Chronic kidney failure; Tertiary hyperparathyroidism

Material and Methods

In September 2012, a patient of 50 years old turned to the Republican clinical oncology center of the Ministry of health of the Republic of Tatarstan. At the time of treatment, the patient complained of weight loss, weakness, pain in the right side and a painful tumor in the left half of the lower jaw up to 4xcm in size. It is known from the anamnesis that in 1989 the patient was diagnosed with polycystic kidney disease, chronic glomerulonephritis. In 2001, the patient suffered from hemorrhagic fever with renal syndrome with the outcome of terminal chronic renal failure. From then on, patient S. was on long-term hemodialysis 3 times a week. During the examination of the abdominal cavity and retroperitoneal space a multi-chamber cystic solid formation of 116x80 mm was found in the right kidney, as well as foci of destruction in the right scapula up to 7mm, in the medial part of the iliac wing up to 22mm, in the body of the left iliac bone up to 15mm. While running bone scintigraphy, uneven accumulation of radiopharmaceutical in the pelvic bones and in the lower jaw on the left was revealed. After FNA-biopsy of the lower jaw was revealed a cytological picture

of osteoblastoclastoma or bone cyst. The level of parathyroid hormone (PTH) at that time was 1390Pg/ml, the level of total blood calcium 2.52mmol/l, and alkaline phosphatase 217u/l. The patient had the following comorbidities: arterial hypertension grade 3 (risk 4), dilated cardiomyopathy, chronic heart failure grade 2a (class 2), mitral valve regurgitation 1-2 degrees, tricuspid valve regurgitation 2 degrees, nephrogenic anemia of the 1st stage, polycystic kidney disease.

In October 2012, the patient underwent an operation in the urology Department of the Republican clinical hospital in Kazan: right-sided nephrectomy. According to the histological examination (No. 41471-80): renal cell carcinoma, mixed-cell variant, was detected (pT3). The patient was diagnosed with cancer of the right kidney pT3N0M0, stage 3, clinical group 2. Taking into account changes in the bones with the formation of foci of parathyroid osteodystrophy and laboratory parameters, a concomitant diagnosis was established: secondary/tertiary hyperparathyroidism, parathyroid osteodystrophy. Ultrasound examination of the neck revealed an increase in the parathyroid glands on both sides from 8 to 12mm, the structure of the thyroid gland was diffusely heterogeneous with nodules up to 8 mm due to concomitant autoimmune thyroiditis, and the cervical lymph nodes were not changed.

In order to improve the standard of living and normalize the phosphorus-calcium metabolism and blood biochemical parameters, the patient was shown surgery to remove all hyperplastic parathyroid glands. In December 2012, the patient underwent an operation: total parathyroidectomy with auto transplantation of part of the lower right parathyroid gland into the muscle fibers of the extensors of the right forearm. During the operation, during the revision of the thyroid gland, the manifestation of thyroiditis were determined, but according to the histological examination (No. 27883/2012), it turned out that in addition to the changes due to nodular hyperplasia of the left lower and right parathyroid glands, the "left upper parathyroid gland" turned out to be a metastasis of papillary thyroid cancer to the paratracheal lymph node. Postoperative laboratory parameters significantly decreased: PTH to 216Pg/ml, total calcium to 2.05 mmol/l and ionized calcium to 1.22mmol/l. After 1 month, the patient was prepared for re-operation on the thyroid gland, while the PTH level increased to 458Pg/ml. In January 2013, the operation was performed: thyroidectomy with central lymph node dissection (level 6), removal of the dystopic left upper parathyroid gland. During the histologic examination the papillary tumor was revealed in the lower pole of the thyroid's left lobe up to 1cm with extracapsular extension, also there was 2 out of 5 metastatic paratracheal lymph node and parathyroid adenoma. In the postoperative period, the level of PTH decreased to 23.2Pg/ml, ionized calcium to 0.95mmol/l, and total calcium to 1.91mmol/l. A year later, in January 2014, by a dispensary observation and ultrasound of the abdominal cavity and retroperitoneal space revealed a tumor of the left kidney and a tumor formation in the bed of the removed right kidney.

In February 2014, the patient underwent surgery in the oncology center (Kazan): left-side nephrectomy with resection of the left adrenal gland, removal of metastasis of the right kidney bed with the liver resection. During the operation, the revision revealed a tumor in the left kidney up to 4 cm in size with multiple cysts, at the level of the right adrenal gland a tumor up to 2cm with ingrowth into the liver. According to the histological examination (No. 4335/2014): papillary carcinoma of the left kidney, type 2, without extracapsular extension (pT2N0M0), polycystic kidney disease, metastasis of renal cancer to the liver, there were no sign of metastases in lymph nodes. Thus, the patient was given a new diagnosis: papillary carcinoma of the left kidney with metastasis in the right kidney bed, pT1N0M1, condition after right-side nephrectomy for renal cancer pT3N0M0. Papillary carcinoma of the left thyroid lobe pT3N1M0, after surgical treatment. Chronic renal failure (stage 5), at the stage of chronic hemodialysis. Tertiary hyperparathyroidism, condition after total parathyroidectomy. In January 2015, by a dispensary examination according to the CT of the abdominal cavity, metastases of renal cancer were found along the abdominal wall and again in the bed of the removed right kidney. After one month in Republican clinical hospital (Kazan) was performed surgery: laparotomy, removal of metastatic lesions of the abdominal wall and the bed of the right kidney.

According to the results of histological examination, metastases of renal cell carcinoma were found in 8 foci. In August 2015, the next medical examination in oncological center according to results of ultrasound and CT of the abdominal cavity showed a tumor formation in the bed of the right kidney 10mm, in the subhepatic space and in the projection 6 and 7 segments of the liver with sizes up to 27 and 23mm, respectively, tumor in the perinephric space on the right was regarded as metastatic lesions. By the decision of the doctors' Concilium of may 11, 2015, despite the presence of such a serious concomitant condition as terminal chronic renal failure and long-term hemodialysis, for the first time in the Republic of Tatarstan (probably in Russia), a decision was made to conduct targeted therapy. The drug of choice was Sunitinib at a dosage of 50mg, which had a significantly higher median survival rate in patients with metastatic renal cancer [3,4]. From December 2015 to October 2017, patient S. received targeted therapy with Sunitinib in the amount of 14 courses with the preservation of creatinine levels up to 600 mmol/l and urea up to 20 mmol/l. Determined stabilization process until mid-October, 2017, when during a routine examination according CT was identified a negative dynamics in the increase in the size of metastatic foci and the appearance of a new lesion in a right leg aperture size up to 9 mm. An another doctor's Concilium was held on October 31, 2017, where it was decided to conduct a second-line targeted therapy with Afinitor (Everolimus) with proven effectiveness and low frequency of side effects as a second-line drug [5], with a decision on further surgical intervention. From January 2018 to may 2018, patient S. received targeted therapy with this drug at a dosage of 10 mg, maintaining acceptable levels of creatinine and blood urea with continued hemodialysis 3 times a week. Then, on May 17,

2018, the patient underwent surgery to remove the metastatic foci of renal cancer with liver resection and cholecystectomy. According to the results of histological examination, 8 foci were identified as metastases of renal cancer. In October 2018, during a routine dispensary examination, according to the CT of the abdominal cavity, metastases of the abdominal wall were found in the amount of number 3, up to 3cm in size. After a year of follow-up with stabilization of the process, the patient died of an ischemic stroke in July 2019.

Conclusion

A case of 7-year life expectancy of a patient with primary multiple tumors (bilateral renal cancer, thyroid cancer) against the background of an end-stage chronic renal failure and hemodialysis with the development of tertiary hyperparathyroidism and multiple surgical interventions for multiple recurrence of renal cancer and long-term targeted therapy with an acceptable quality of life is presented. Analyzing this clinical case, we can conclude how important a personalized approach is in oncology, in particular if we are talking about cancer patients with end-stage chronic kidney failure who require special anticancer treatment: it is necessary to take into account all the features of patient management, timely diagnose the progression of the disease, carefully monitor laboratory biochemical parameters of blood, and most importantly together with doctors of related specialties, ensure a decent standard of living and its maximum duration.

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