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Case report

Synchronous prostate and rectal cancer, a case report

Villegas-Otiniano Paola^a, Vásquez-Medina Jimena^a,
Benites-Zapata Vicente Aleixandre^{b,*}

^a School of Medicine, Universidad Peruana de Ciencias Aplicadas, Lima, Peru

^b Unidad de Investigación para la Generación y Síntesis de Evidencias en Salud, Universidad San Ignacio de Loyola, Lima, Peru

ARTICLE INFO

Article history:

Received 24 January 2018

Received in revised form

10 May 2018

Accepted 9 August 2018

Available online 12 September 2018

Keywords:

“Synchronous”

“Neoplasms”

“Cancer”

“Rectum”

ABSTRACT

The incidence of multiple primary neoplasms has been increasing over the years. Within this group, the coexistence of primary prostate cancer and primary colorectal cancer is one of the most frequent. The objective of this case report is to present the case of a 76-year-old male patient who presented the diagnosis of prostate cancer and synchronous rectal cancer. To this end, his clinical history in the oncological service of the Hospital Militar Central del Perú (tertiary hospital) has been reviewed.

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1. Introduction

Prostate cancer is a cancer with the highest incidence in men in Peru (21.2%)¹ and the second most common in the world (14.8%).¹ Likewise, colorectal cancer is the fourth cancer with the highest incidence in men in Peru (7.2%)¹ and the second in the world (9.2%).¹ Despite these high figures, the incidence of the coexistence of both primary neoplasms is low.

The coexistence of two primary neoplasms in different organs or the existence of two cell type tumors in the same organ are known as Multiple Primary Tumors (MPT).² Their

incidence is estimated between 5% and 8% of all cancers.² In a study made in the Third Xiangya Hospital of Central South University (Changsha, China) 1311 records of patients with colorectal cancer were reviewed, 761 were male, and it was found that only 2 had synchronous prostate cancer.³ Even though synchronous cancer is not frequent, the association between prostate and rectal cancer is the most common in this group. A Spanish article published in 2015,² assessed the frequency and association between malignant tumors and their simultaneous occurrence to find that of 82 patients who showed the coexistence of primary neoplasia, the most frequent association was prostate-colorectal (26%).

* Corresponding author at: Vicerrectorado de Investigación, Universidad San Ignacio de Loyola, Av. la Fontana 750, Lima 15024, Peru.

E-mail address: vbeniteszapata@gmail.com (V.A. Benites-Zapata).

<https://doi.org/10.1016/j.rpor.2018.08.002>

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Fig. 1 – Photomicrographs of rectal biopsy.

With this article we aim to make the first case report of synchronous rectal and prostate cancer in Peru, so we can raise awareness of the diagnosis and add to the cases previously recorded all over the world.

2. Case report

A 77-year-old male patient from Piura, Peru, with a history of alcohol consumption, smoking, and with a diagnosis of arterial hypertension, diabetes mellitus type II, asthma and perianal fistula with 30 years of evolution which has been treated surgically with a fistulectomy in 1982.

In February 2017, a biopsy of the lesion was performed in the rectum, with a conclusive pathology of infiltrating mucinous adenocarcinoma with lymphovascular invasion that reached below the squamous epithelium.

In March, auxiliary tests were carried out. The laboratory showed a CEA of 5.4 (normal value <6.9) and a PSA of 24.8 (normal value <4.4); while the abdominal Magnetic Resonance Imaging (MRI) examination was negative for metastasis and the pelvic MRI confirmed the presence of a posterior rectal paramedial fistula of 1.8 × 0.9 cm in diameter which extended to soft tissues with organized collection towards the intracoccygeal space.

In April, a colonoscopy was performed, in which a lesion was found that extended beyond the pectineal line to the posterior face, elevated and infiltrative of 5 × 3 cm (Fig. 1).

The biopsy was taken, resulting in histopathology tubular adenoma with low-grade dysplasia. Subsequently, a prostate biopsy was performed, with a conclusive histopathology result of adenocarcinoma acinar infiltrate of prostate GLEASON 7 (3+4) (Fig. 2). He was referred to the tertiary hospital to decide on oncological management.

During May a laparoscopic loop colostomy was performed, which got complicated and the patient was re-admitted for intervention with a pre-operative diagnosis of necrosome colostomy and a subsequent realization of a Hartman colostomy.

Subsequently, during the same month a bone scintigraphy was performed, with a negative result.

A Medical Board composed of three oncologists, an oncologist-urologist and a specialist in radiotherapy was set up to decide on management. They conclude to apply pre-operative chemotherapy for rectal cancer and dysfunctional colostomy prior to radiotherapy. Radiation therapy and leutinizing hormone-releasing hormone (LHRH) analogs were also indicated as a treatment for high-risk prostate cancer.

In July the chemotherapy treatment with capecitabine and two phases of radiotherapy began. External radiotherapy of 7000 cGy was administered in 35 applications, which was divided into two phases. In the first phase, it received 4600 cGy in 23 applications with 6 MV chip energy; in 4 pelvic fields, anterior, posterior, right lateral and left. In the second phase he received 2400 cGy in 12 fractions in a direct perineal field until he completed 7000 cGy (SSD technique and 95% isodose). In August, leuprolide was included in the treatment. The end of the treatment for the month of September was proposed, and the evaluation of the radiology department concluded that the tolerance to treatment had been moderate and suggested follow-up controls with the treating doctor.

In the month of November, control MRI was performed, the posterior wall of the rectum was found in the MRI of the rectum to show thickening of blood collection suggestive of hematoma 69 × 36 × 92. In the same way, a prostate gland of heterogeneous appearance was found, with discrete effacement of its trailing edge with reaches of adjacent fat. It was decided to perform proctoscopy, evidencing an ulcerated lesion of 15 mm in diameter with raised edges with two

Fig. 2 – Photomicrographs of prostate biopsy.

fistulous holes of 2 mm. Laboratory tests showed a CEA of 4.7, LDH of 314 and a blood count of 15,330 leukocytes, 11.5 of Hemoglobin, and a CA of 19–9 of 9.22. Physical examination showed induration of the perianal region and presence of purulent blood secretion. The presence of perianal abscess and hospitalization of the patient for antibiotic coverage was considered. Abscess did not diminish with antibiotics, so an exploratory and drainage surgical intervention was scheduled.

No acute toxicities occurred, apart from the decrease in sexual desire reported through the psychological evaluation in the month of December.

3. Discussion and conclusions

The incidence of cancer all over the world is increasing, including the detection of multiple primary tumors.⁴ This is the consequence of improved clinical awareness, advances in diagnostic technology, a change of lifestyle with a diet that includes more red meat and processed food, smoking, sedentarism and obesity, and an increase of life span that allow patients to develop more than one primary cancer.

Likewise, the tumors presented by the patient are those that have the highest incidence in men and this increases with age. We emphasized the importance of a complete medical examination when any of these diseases is detected, especially digital rectal examination; and ask for an established test required for patients of that age: PSA and upper and lower endoscopy.

Regarding the treatment, the bibliography indicates that at the beginning each disease is evaluated separately⁵ and later the treatment is established as symptomatic or curative.^{5,6} Our patient has both diseases in advanced stages so his treatments have been given with the aim of improving his quality of life by treating the symptoms and prolonging it.

The Guideline for the Management of Clinically Localized Prostate Cancer of 2007⁶ recommends hormone therapy combined with standard-dose external beam radiotherapy in

doses around 70 Gy for men with Gleason score 7 cancer or higher or PSA level in excess of 10 ng/mL – treatment that was given to our patient. Likewise, the guide recommends follow-up at 6-month intervals for five years after treatment is completed.

On the other hand, recent studies have shown that Androgen Deprivation Therapy (ADT) increases the risk of cardiovascular disease and diabetes.⁶ From this, we must assess the risk benefit of this treatment, specifically Leuprolide (analog of LHRH), since our patient has a history of diabetes mellitus II and arterial hypertension, which can aggravate both diseases. So far, both diseases have been controlled.

ESMO rectal cancer guidelines for diagnosis, treatment and follow-up,⁷ suggest that radiochemotherapy should be performed prior to surgery. In our patient, radiotherapy has already been applied with the previously described characteristics, but he has been scheduled to undergo exploratory and curative surgery of an ulcer on the anal margin that has recently appeared.

In 2014, Charalampos Seretis et al. made a comprehensive review of previous case reports of synchronous prostate and rectal cancer that were published,⁸ it included a total of 23 cases. They mention that the majority of the patients had symptoms that correlate with colorectal rather than prostate lesions, and auxiliary exams were needed with abnormal values of PSA for suspected prostate malignancy. Also, the vast majority opted for surgical intervention with curative intent as the first step of the treatment, and only 4 of the 23 cases opted for chemoradiotherapy before a resection surgery.

Besides, LAVAN et al.⁹ conducted a case review of 10 patients with the purpose of evaluating the treatments performed and the toxicities that could have been generated. They found that, if their recommended dose of pelvic external beam radiotherapy of 45–50.4 Gy with 5-fluorouracil (5FU) was given and a prostate total dose ranged from 70.0 to 79.2 Gy, no acute toxicities occurred, excluding AS-induced erectile dysfunction. Increasing the dose to the prostate may result in

significant late morbidity; while the GI toxicities correlate with doses >70 Gy.

Ultimately, GI toxicity is a function of technique, dose, treated volume and reported end point. A lower EBRT boost to the prostate would minimize GI toxicity because in the absence of a demonstrable OS benefit from dose escalation, it may be difficult to justify higher doses to the prostate in the light of potential dose-dependent toxicity. Most importantly, we recommend that any prostate boost be considered and justified considering patient age and comorbidity, likelihood of future metastatic rectal cancer and risk category of prostate cancer.

In conclusion, we consider it important to report the present case since the incidence of synchronous cancers is increasing in the world, and although etiology is not well established, it must be taken into account when diagnosis is made by the treating doctor. On the other hand, it is important to make an integral evaluation of the patient to decide on an adequate management. As we know, chemotherapy drugs and hormonal treatments can have a series of side effects; therefore, they must be taken into account and a previous evaluation of other diagnoses that the patient presents must be carried out in order to avoid aggravating other pathologies such as, in this case, endocrine and cardiovascular.

Conflict of interest

None declared.

Financial disclosure

The authors declare were self-financed.

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