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Synchronous Rectal Adenocarcinoma and Urothelial Carcinoma of the Bladder: Fortuitous Association or Oncogenetic Predisposition?

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Abstract **Case Report**

Synchronous primary cancers involving the rectum and the bladder are quite rare and poorly reported in the literature. We report the case of a 58-year-old non-smoking patient who presented with proctalgia with diarrhea and rectal bleeding, as well as pollakiuria and hematuria. Pelvic magnetic resonance imaging showed the presence of two tissue masses involving the rectum and the bladder, in addition to a bone lesion in the pelvis. The biopsy of the three sites (rectum, bladder and bone) was in favor of a rectal adenocarcinoma and urothelial carcinoma of the bladder, with absence of signs of malignancy for bone involvement. The PET-Scan did not show any distant lesion. The patient was treated with a trans-urethral resection of the bladder, and concomitant radio-chemotherapy for the rectum. We are going to do a review of the literature concerning this association.

Keywords: Proctalgia, bladder, Synchronous primary cancers, radio-chemotherapy, Rectal biopsy.

INTRODUCTION

Synchronous primary cancers are poorly described, especially the association of bladder and rectum cancer. The data in the literature are still rare, thus the exact data on the incidence of this association. We will illustrate this with the case of a patient suffering from these two pathologies simultaneously, without, however, having risk factors for carcinogenesis.

CASE PRESENTATION

58-year-old patient, non-smoker, with no history of family cancer, followed for hypertension under calcium channel blockers and angiotensin II receptor antagonists, operated for a right hemigoiter, who consults for proctalgia with diarrhea, rectal bleeding, as well as pollakiuria associated with hematuria evolving for two months, in a context of preservation of general condition.

A pelvic Magnetic resonance imaging objectified the presence of a tissue process of the 03 levels of the rectum, located 05 mm from the upper pole of the circumferential sphincter apparatus associated with left internal iliac adenomegaly: T3cN2b. In addition to another tissue process of the lower left supratrigonal bladder distinct from the above-described lesion of 33 mm with infiltration of perivesical fat: T3. In addition, we note the presence of lesions of the bones of the pelvis, in particular the left ischium, and the right pubic body.

Rectal biopsy was in favor of a moderately to well differentiated Lieberkhunian rectal adenocarcinoma (CDX2 (+); β-catenin (+); GATA3 (-); P63 (-)).

The bladder biopsy was in favor of an invasive high-grade urothelial carcinoma (GATA3 (+); P63 (+); CDX2 (-); β-catenin (-)).

Bone biopsy showed no signs of malignancy.

The 18FDG PET-Scan showed very intense hypermetabolic parietal thickening (SUVmax=21.4) of the 56 x 43 mm² rectum extending over 90 mm, in addition to a pathological hypermetabolic nodular thickening at the level of the postero-superior wall of the rectum. bladder (SUVmax=22.8) of 28 x 27. The rest of the exam was normal.

The therapeutic strategy was taken in a multidisciplinary consultation meeting (Urology, Visceral surgery, Radiology, Nuclear medicine, Medical oncology, radiotherapy, etc.), hence the decision of a

trans-urethral resection of the bladder (TURBT), and for rectal tumor concomitant radio-chemotherapy (CCR).

DISCUSSION

Cases of primary cancers have been reported, either synchronous or metachronous, although metachronous cancers far exceed those that are synchronous. It should be noted that the presence of several primary cancers is correlated with a higher mortality rate.

The median five-year overall survival for mono-neoplasia is 61%, while it is 11% for multiple neoplasia (p<0.005).

The male sex is associated with a risk of mortality (p=0.04).

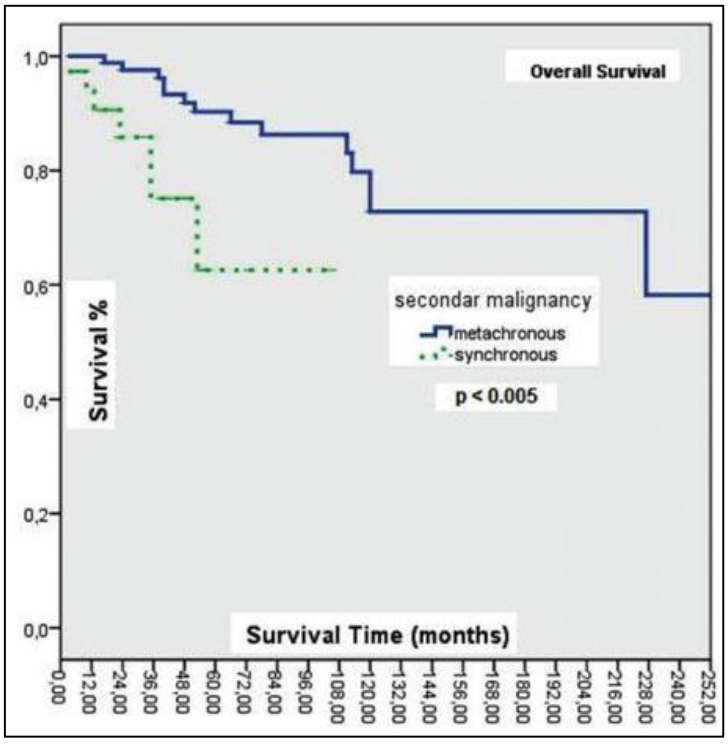

Figure 1.: The relationship between overall survival and type of malignancy [1]

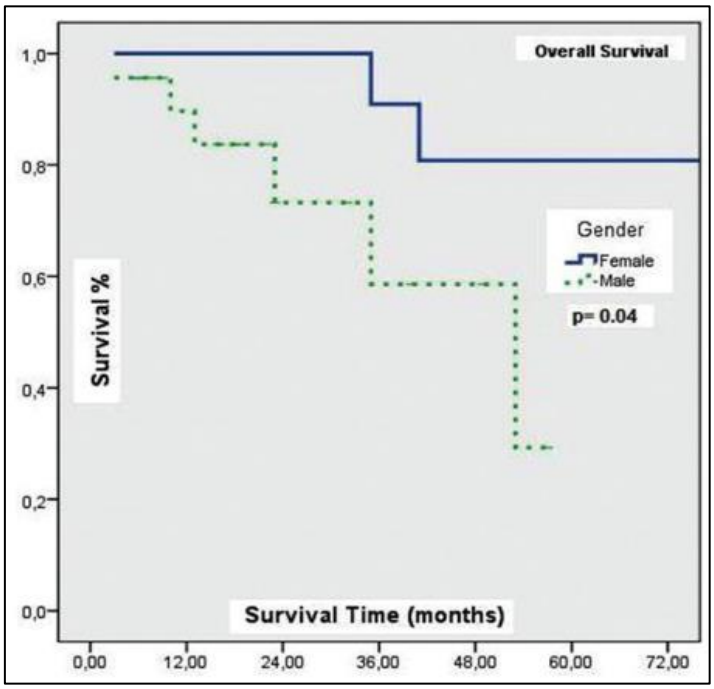

Figure 2 : The relationship between overall survival and gender [1]

Along the same lines, Warren and Gate established three criteria for designating a case as multiple primary neoplasms : (1) Each of the tumors must be confirmed histopathologically, (2) each must be geographically separate and distinct, and the lesions must be separated by normal mucosa, (3) the likelihood that one is the metastasis of the other must be excluded [2].

For the incidence of synchronous primary cancers of the bladder with other organs is clearly increasing, the Mayo Clinic had recorded a frequency which rose from 3.3% in 1929, 4.5% in 1937 and 5.1% in 1953, these results can be explained by the high life expectancy, as well as the lifestyle (sedentary lifestyle, food, etc.) and progress in terms of diagnosis and therapy [3].

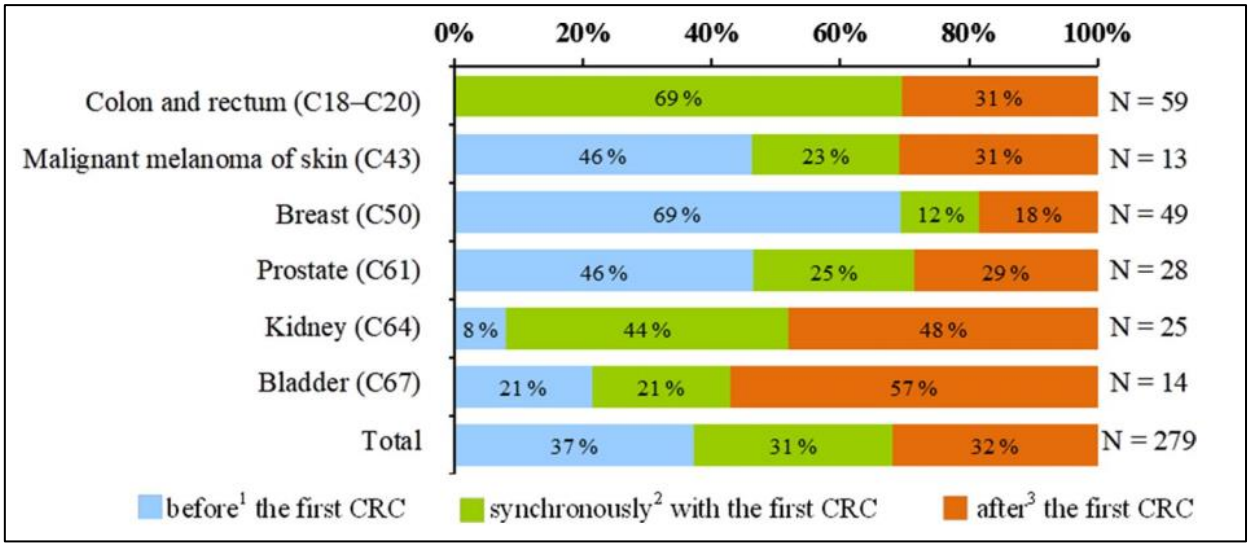

Figure 3 : Appearance of second primary cancers at the time of diagnosis [4]

According to the study by Jana Halamkove *et al*., the prevalence of synchronous primary colorectal and bladder cancer is 21% (n=14) [4].

Genetically, there is no similarity between the genesis of the two cancers.

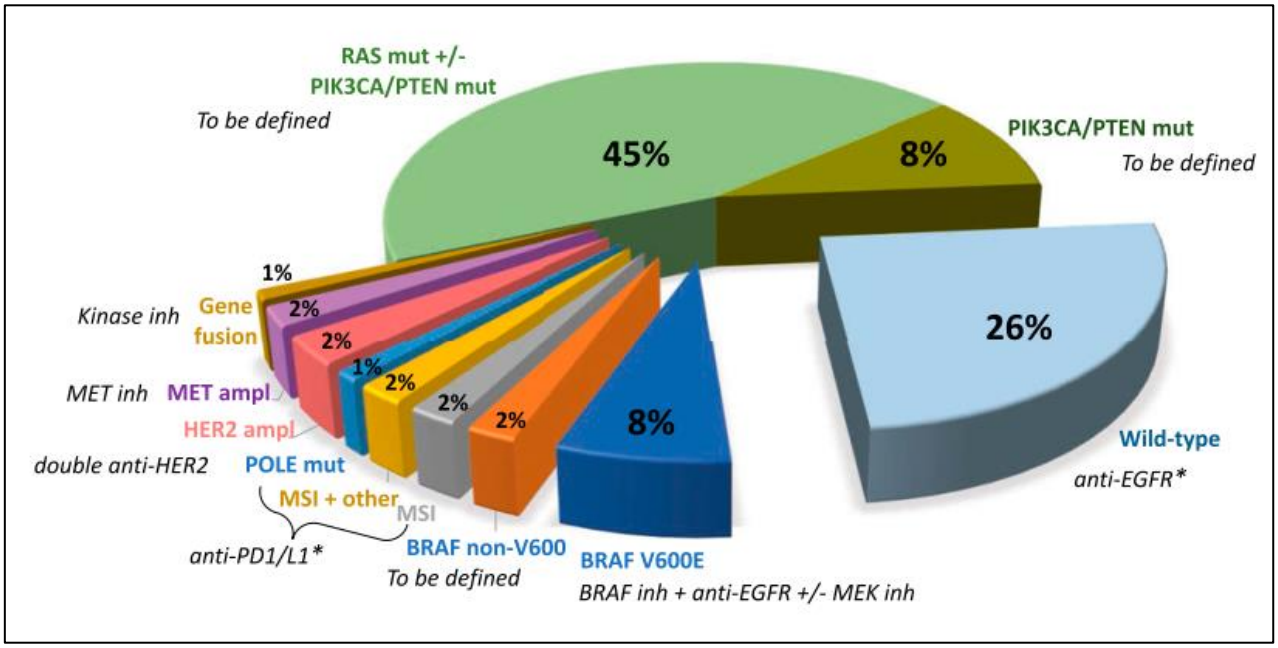

Figure 4 : Genomic markers in metastatic colorectal cancer with existing or potential corresponding therapies [5]

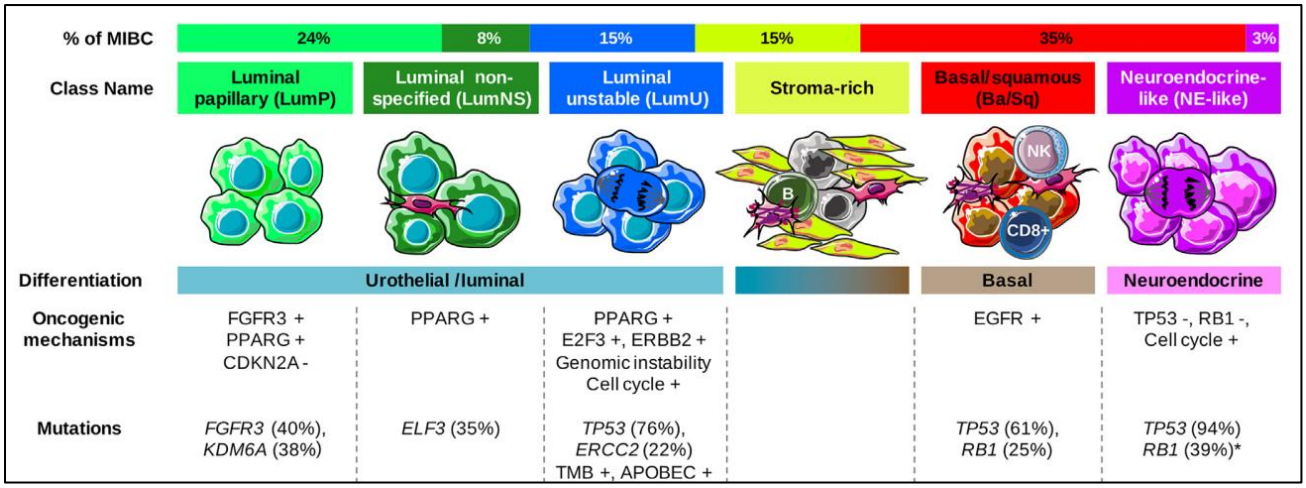

Figure 5 : Genomic markers in bladder cancer [6]

CONCLUSION

Despite the fact that several causes are incriminated in multiple primary cancers, namely alcohol and tobacco exposure, lifestyle, increased life expectancy, treatment with chemotherapy or radiotherapy, the etiopathogenic mechanisms are not elucidated concerning synchronous cancers of bladder and rectum.

Generally synchronous tumors are small, requiring surgical treatment. For our patient the surgical treatment is heavy including a cystoprostatectomy associated with an abdominopelvic amputation with a permanent digestive stoma which will alter his quality of life, especially since he is young and healthy, this gesture which was categorically refused by the patient.

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