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KRUKENBERG SYNDROME: A CASE REPORT

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Abstract: **Objective:** To relate the clinical case of a Krukenberg Tumor with the theory of the subject. **Methods:** This is a case study based on research on the subject. **Case details:** Patient, female, 60 years old, was admitted to Santa Casa de Franca complaining of constipation associated with pain in the hypogastrium and right iliac fossa for 1 month. He reported hyporexia, weakness and loss of 5 kg in 1 month. On physical examination of the abdomen, a hard region measuring approximately 10 cm was found in the right hemiabdome. Abdominal magnetic resonance imaging showed a solid-cystic mass with septations in the right hemiabdome of approximately 16 cm. Abdominal tumor was questioned and exploratory laparotomy was indicated. Patient underwent Hartmann rectosigmoidectomy, with total hysterectomy and adnexectomy. Final diagnosis of stage IV colon cancer with bilateral ovarian metastasis: Krukenberg tumor. **Conclusion/ Final considerations:** Krukenberg's tumor is uncommon in medical practice, hence the importance of studies on it to enrich the literature and help correct diagnoses.
Keywords: Tumor, Krukenberg, ovary, colorectal.

INTRODUCTION

Krukenberg, is a rare ovarian neoplasm secondary to a gastrointestinal and colorectal tumor, often bilateral, bulky and asymptomatic, with the vast majority being metastatic (URBAN CA, et al., 1999). Gastric cancer and colorectal cancer together account for approximately 90% of primary tumor sites (BAS Y, et al., 2018; KUBECEK O, et al., 2017; JEUNG YJ, et al., 2015). It is estimated that the presence of ovarian cancer is between 1% and 2%, with an unfavorable prognosis and a low survival rate (ASSIS LAN, et al., 2019).

CASE DESCRIPTION

Female patient, 60 years old, hypertensive, using angiopressin and losartan, admitted to Santa Casa de Franca, reporting intestinal constipation with bowel movements every 5-7 days, with hard stools and in small amounts associated with pain in the hypogastrium and right iliac fossa about 1 month ago. He reported hyporexia and weakness associated with a loss of 5 kg in 1 month. He denied bleeding and any urinary changes. She reported a family history of Intestinal Neoplasia in a first-degree cousin and also a family history of Breast Cancer.

On physical examination, she was in good general condition, pale +/4+, anicteric, acyanotic, afebrile, respiratory and cardiovascular systems without alterations, limbs without edema and numbness. Flat, flaccid abdomen, RHA present, painless on deep palpation; in the right hemiabdome, presence of a hardened region of approximately 10cm, little mobile, massive on percussion, Blumberg, Giordano and Murphy negative.

Complementary tests: hematocrit 11.4, leukocytes 228000, rods 8, platelets 603,000, amylase 27, total bilirubin 0.2, creatinine 1.1, urea 58, alkaline phosphatase 771, gamma GT 122, potassium 4.0, sodium 134, TGP 176, TGO 113, INR 1.3, urine I: white blood cells 12000, red blood cells 540000. CEA 3.5, CA 125 335

Computed tomography of the abdomen with contrast was requested, which showed a solid-cystic mass with heterogeneous content inside, and thickening of the rectal walls was questioned. On rectal examination, no palpable masses, blood or melena were identified. A Ca 125 dosage was also requested for a more thorough analysis of the condition. The diagnostic hypothesis was an ovarian tumor. There were no alterations in the upper digestive endoscopy and in the colonoscopy, showing the presence of a stenosing lesion about 20cm from the anal

verge, extrinsic invasion that prevented the passage of the device, but in the biopsy, there was no neoplasm. Transvaginal ultrasound and gynecology and obstetrics evaluation were scheduled.

In the abdominal magnetic resonance imaging, a mass of solid-cystic formation with septations was found in the typography of the right hemiabdome of about 16cm, an abdominal tumor was questioned and an exploratory laparotomy was indicated.

Patient underwent Hartmann rectosigmoidectomy, with total hysterectomy and adnexectomy. A large volume ovarian mass (~17x14x8.5cm) not attached to other planes was found, an ovarian mass on the right (~10.5x5.5x5.0cm) not adhered to other planes, medial sigmoid wall adhered to the uterine wall, with the presence of a solid mass invading both organs. Absence of liver, splenic, gastric, bladder, small bowel loops, cecum, ascending and transverse colon lesions. The rectal stump was buried with a linear stapler at ~10cm BA, tubular drain No. 2 was positioned in the pelvic cavity, with outlet in the right iliac fossa. Started metronidazole 500mg 8/8h and ciprofloxacin 400mg 12/12h postoperatively. There were no complications during and after the surgical procedure performed.

The anatomopathological microscopic examination showed adenocarcinoma with a moderately differentiated tubular pattern with adhesion to the uterine wall without direct neoplastic infiltration in the uterus, free proximal, distal and circumferential surgical margins, present vascular invasion with metastasis to 2 lymph nodes of the 32 examined. Presence of diverticulosis and associated acute diverticulitis, uterine cervix with nonspecific chronic cervicitis and squamous metaplasia, leiomyomas without atypia in the myometrium, inactive endometrium without atypia, and adhered fallopian tube without lesions. In the ovaries, bilateral rectal adenocarcinoma metastasis, friable to the touch, causing substenosis of the apparatus, and uterine tube without the presence of Neoplasia. Pathological staging: pT4a pN1B pM1. Final diagnosis of stage IV colon cancer with bilateral ovarian metastasis: Krukenberg tumor. The patient was referred for oncological follow-up with chemotherapy treatment.

DISCUSSION

Krukenberg's disease is a rare phenomenon, especially in Western countries, and for this reason, there are few cases reported in the Brazilian medical literature. It represents from 1% to 5% of ovarian tumors that affect women in the fourth decade of life (URBAN CA, et al., 1999). Among the works found, 13 articles were chosen to be studied and reviewed. The most common type among these are signet-ring cell tumors without tubular formations. The patient in question developed a less common pattern: the tubular.

When signet-ring cells are present, subdivision into those with mucinous or non-mucinous material is necessary. The latter is also divided into three other subtypes: stromal signet ring, benign, unilateral and without epithelial differentiation; sclerosing stromal cells, whose characteristic is to contain lipid; and finally, clear cell adenocarcinoma of the ovary, in which there is glycogen. As for tubular tumors, there is a need for differential diagnosis with other ovarian tumors such as those with annular pattern, endometrioid carcinoma and tumor of Wolffian origin. (AZIZ M, KASI A, 2022; WU F, et al., 2015; FERREIRA CR, 2007).

The pathophysiology is not completely understood. However, as in most metastatic diseases, hematogenous and lymphatic pathways are the main hypotheses. Another route is transcoelomic, that is, direct passage of cells to adjacent organs. Possibly, all of these

are involved in the spread of the tumor in question. (AZIZ M, KASI A, 2022; SHAH B, et al., 2017) The most frequent primary site is the stomach (70%), followed by the colorectal, the latter being the focus of the patient's tumor that motivated this study; both account for 90% of cases. (KUBECEK O, et al., 2017; PAREJA HBJ, et al., 2021)

Symptomatology faces two scenarios: absence of signs and symptoms or, then, nonspecific complaints, which, added to the rarity of cases, causes the diagnosis to be postponed. In the case of this patient, complaints suggestive of neoplasia can be observed, such as excessive weight loss, but this is a common denominator for all types of malignant tumors. The other complaints are related to the gastrointestinal system, such as constipation, hard and small-volume stools and abdominal pain. Specific gynecological signs and symptoms are not described. (CASIMIRO MSR, 2018)

In view of this perspective, laboratory and imaging tests were necessary to suspect it, as in most Krukenberg tumors. The exams of choice are abdominal ultrasounds and computed tomography scans, which show an ovarian mass, most commonly solid, but which may also be cystic. In this case, a pelvic mass with cystic and heterogeneous content was found, which, together with the result of the digital rectal examination, which revealed the absence of a palpable mass, blood or melena, raised the suspicion of a probable ovarian tumor. Magnetic resonance imaging showed a solid-cystic mass in the right hemiabdome measuring approximately 16 centimeters. The follow-up adopted from then on was exploratory laparotomy. (UBILLA CV, et al., 2006)

Along with imaging methods, dosages of tumor markers (such as Ca 125, CEA, Ca 19.9, among others) also play an important role in the interpretation of clinical and radiological findings, as well as in the diagnostic differentiation, as it is a rare disease and that presents a nonspecific clinic. (VALENTE V, MASSABKI OS, 2011; SOCIEDADE BRASILEIRA DE PATOLOGIA, 2019; BAKER P, OLIVA E, 2005; BAKER P, OLIVA E, 2008; DUSKA LR, KOHN EC, 2017; COLLEGE AMERICAN PATHOLOGISTS, 2012)

For this type of tumor, treatment consists of different moments: surgery and adjuvant chemotherapy and/or radiotherapy. Despite the low survival rate, it is extremely important to integrate care and strict follow-up, as well as the patient's adherence to treatment, so that the psychological and physical impacts are minimized, in order to also improve the quality of life after treatment. (CASIMIRO MSR, 2018; XIE H, et al., 2021; ROSA NETO FC, et al., 2018)

Therefore, it is concluded that Krukenberg Tumor (KT) is a very uncommon disease in medical practice. Therefore, it is important to pay attention to possible differential diagnoses involving the symptoms presented by KT, in the same way that it is necessary to expand research on the subject in order to fill in and enrich the literature; and always remember this diagnostic hypothesis, because the sooner the doctor recognizes the tumor, the more chances of increasing survival and therapeutic success he will have.

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