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Should the Discovery of an Ovarian Tumor Systematically Indicate an Upper Digestive Endoscopy: Krukenberg's Tumor: Case Report in Senegal and Literature Review

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Abstract

Introduction: Krukenberg tumors (TK) are defined as ovarian metastasis of gastrointestinal tract cancer. **Presentation:** We report a case of Krukenberg tumor in a 60-year-old female who presented with chronic periumbilical pain and moderate ascites on admission. Ultrasound and CT scan showed a left ovarian tumor with secondary peritoneal and hepatic tumors. Histological test of the ovarian lesion was in favor of a kitten-ring cell adenocarcinoma. However, the occurrence of uncontrollable vomiting during hospitalization motivated upper digestive endoscopy procedure which showed a gastric tumor of the same histological type as the ovarian tumor, thus making us uphold the likely diagnosis of Krukenberg tumor. **Conclusion:** Krukenberg tumors always constitute a diagnostical challenge, especially for the primary origin of the tumor, hence the benefit of a systematic gynecological examination considering any digestive neoplasia and vice versa, gastrointestinal radiological and endoscopic exploration is also deemed necessary before any ovarian tumor.

Keywords

Krukenberg Tumour, Metastases, Digestive Endoscopy

1. Introduction

Krukenberg syndrome is defined by unilateral or bilateral ovarian metastasis of a glandular epithelioma characterized by mucin producing signet ring cells. The

primary tumor's origin is in 90% of cases from the gastrointestinal tract. These are very rare tumors, with poorly elucidated etiopathogenesis and often poor prognosis [1]. We report a case of unilateral Krukenberg tumor diagnosed in a 60-year-old female.

2. Observation

We report the case of a 60-year-old female with history of diabetes on metformin 500 mg/d and known high blood pressure on Amlodipine 10 mg (1 tab/d). She was admitted for hypogastric abdominal pain for 04 months with heaviness feeling, moderate intensity, radiating towards the left iliac fossa associated to chronic constipation with 2 stools of normal aspect per week. The clinical picture developed in a context of unquantified weight loss, physical asthenia, and alleged fever. Physical examination showed free moderate ascites, a firm, tender and irregular hypogastric mass, clinical anemia and 38˚ fever.

Biological tests showed hyperleukocytosis of 14610 el/m^3, hypochromic microcytic anemia of 8.4 g/dl and a non-specific biological inflammatory syndrome with high CRP level of 92 mg/l. Paracentesis revealed a citrine yellow liquid, of which cytochemical examination showed high protein liquid with a protein level of 38 g/l and a hypercellularity of 1042 leukocytes with lymphocyte predominance. GeneXpert test and adenosine deaminases tested in the ascites fluid were negative. Testing for malignant cells in the fluid was positive. The ACE level was three times higher than normal. The abdominopelvic ultrasound showed a voluminous multipartitioned pelvic mass of 123 × 117 mm with malignant left ovarian location. An ultrasound-guided ovarian biopsy was performed, and the pathological examination of the lesion was in favor of an adenocarcinoma with signet ring tumor cells. Thoraco-abdominopelvic scanner performed as part of the extension assessment was in favor of an ovarian tumor with probable secondary hepatic and peritoneal locations (**Figure 1**). The diagnosis of ovarian cancer with secondary peritoneal and hepatic tumors was initially upheld and the patient was to undergo palliative chemotherapy after MDT meeting. However, the clinical course was marked by the occurrence of uncontrollable vomiting which prompted an upper gastrointestinal endoscopy procedure which showed an ulcer-budding antral tumor taking the pylorus and extending to the cardia and the lower third of the esophagus (**Figure 2**). Biopsies were performed on the lesions and the anatomopathological examination of the biopsy fragments were in favor of a poorly differentiated and invasive signet ring independent cell adenocarcinoma of the stomach (**Figure 3**). In total, the diagnosis of a gastric tumor with secondary pulmonary, peritoneal and ovarian tumors (Krukenberg) was finally upheld. The patient subsequently underwent gastro-entero-anastomosis and was then referred to medical oncology for her palliative chemotherapy. She died 2 months after starting chemotherapy.

3. Discussion

Krukenberg tumor is a rather mysterious entity of ovarian metastasis whose

physiopathogenical mechanisms remain unclear. The incidence of these secondary tumors remains rare, representing approximately 3% to 5% of ovarian metastases [1] [2]. The starting point is the gastrointestinal tract in 90% of cases with a clear predominance of gastric cancers (78%). It occurs mainly in multiparous women, in period of gynecological activity in more than 70% of cases with an average age varying between 30 - 50 years [2].

Our case was a 60-year-old postmenopausal and multiparous woman. The primary tumor was of gastric origin and the ovarian secondary tumor was unilateral. From a pathophysiological point of view, the big question remains the way of neoplastic dissemination that may exist between a gastrointestinal cancer and the ovary. Thus, several hypotheses have been ventured, including the retrograde lymphatic dissemination pathway, chemotaxis, immunotactism and hormonal tactism of tumor cells with ovarian cell receptors [3].

The clinical signs of Krukenberg tumor are not specific. At a late stage, the discovery of a pelvic mass and/or ascites dominates the clinical picture and is the most common diagnostical situation [4]. In our case, gastrointestinal symptoms appeared after the gynecological ones. However, the tumor is fortuitously discovered in most cases, during an extension assessment of a primary gastrointestinal cancer or during surgery. From histological findings, the presence of signet ring epitheliomatous cells disseminated in the stroma, isolated or grouped in acinar clusters with PAS positive mucus, giving a pseudo-sarcomatous appearance, is characteristic of Krukenberg tumor [5] [6]. However, difficulty lies in the conclusion of a primary or secondary ovarian tumor. Several variables must be studied, particularly immunohistochemistry, which the CK7(-)/CK20(+) profile is more in favor of a primary gastrointestinal tumor and the bilateral nature of the ovarian tumors in favor of ovarian metastasis [6].

In our observation, the anatomopathological examination of the gastric lesion was in favor of a signet ring cell adenocarcinoma, as well as histology of the ovarian tumor. However, immunohistochemistry was not performed in our case because of its inaccessibility in our regions.

On imaging, ovarian metastasis appeared in the form of mainly tissue mass, site of a few well-limited intramural cystic images. Treatment of Krukenberg tumor is always surgical. It is based on excision of the primary tumor as early as possible, followed by total hysterectomy with bilateral oophorectomy. Some recommend, in metachronous metastases, iterative surgery with curative aim to allow prolonged survival [7]. When the lesion is unilateral and suspicious, the adnexectomy must be bilateral because there is a risk of having a metachronous tumor on the remaining ovary. Adjuvant chemotherapy holds some efficacy when combined to several drugs (Cisplatin, 5 FU, Adriamycin). On the other hand, the place of other adjuvant treatments (Cobalt therapy, hormone therapy) and immunotherapy is highly debated if not with no benefit [8] [9]. In our clinical case, the patient underwent palliative gastro-enteroanastomosis and then palliative chemotherapy. The prognosis of these tumors remains gloomy, the median survival in literature

is overall 12 months. Some factors are considered of poor prognosis by authors: late diagnosis at the stage of symptoms, the presence of ascites, the young age of the patient during the childbearing period, a concomitant pregnancy, a poor chronology of surgical procedures [10]. In our case, the survival was of 2 months and the factors of poor prognosis were the presence of ascites and the late stage of the diagnosis.

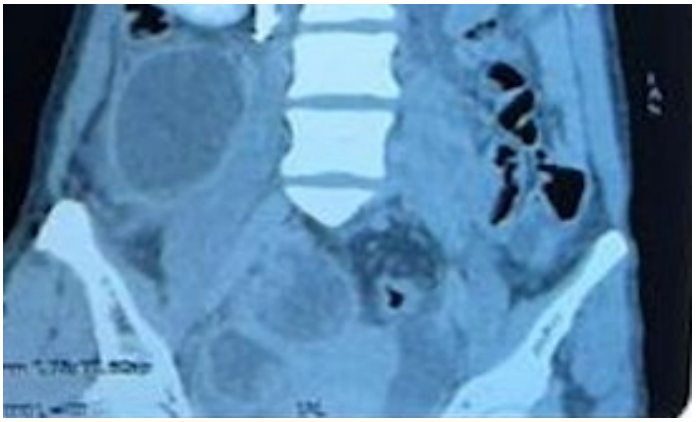

Figure 1. Frontal section of the ovarian tumor on CT scan.

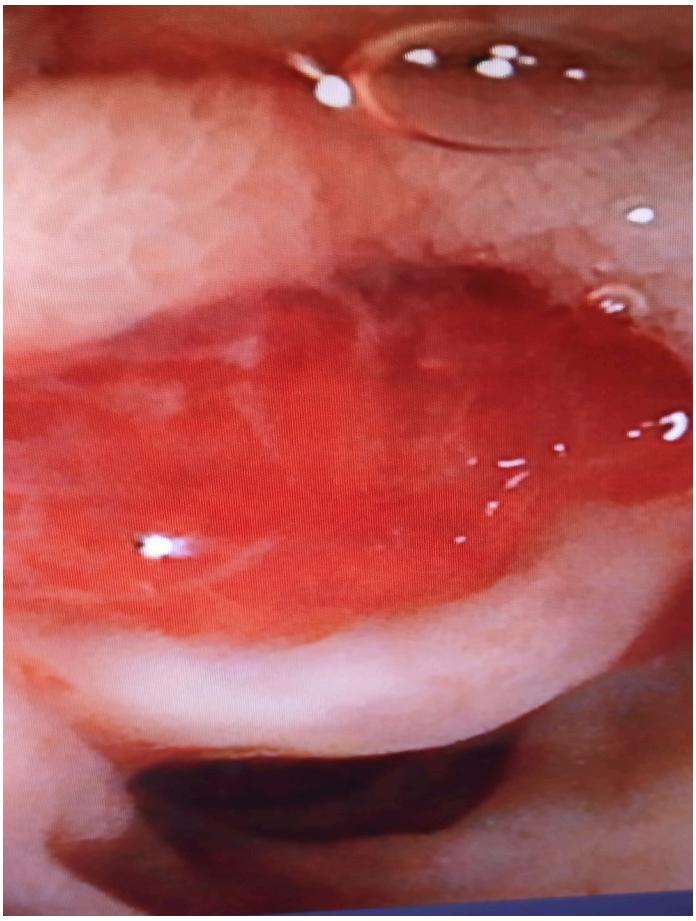

Figure 2. Ulcer-budding and stenosing tumor of the antrum.

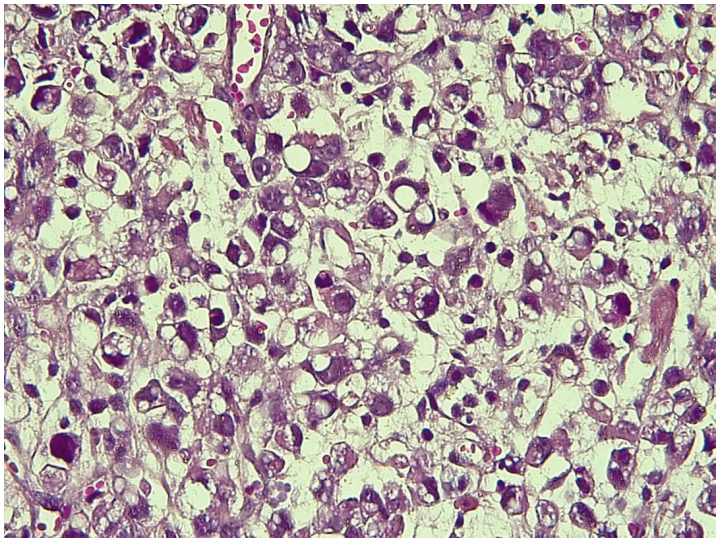

Figure 3. Gastric signet ring cell tumor.

4. Conclusion

Krukenberg tumor is a rare secondary ovarian tumor whose primary location is often of gastric origin. The difficulty lies in identifying the origin of the primary tumor in the absence of immunohistochemistry. Our observation illustrates the interest of a complete gastrointestinal exploration in case of the discovery of a malignant ovarian tumor.

Provenance and Peer Review

All authors have read and approved the document.

Consent

Patients gave consent to report cases.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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