

Krukenberg Tumour of the Ovary

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Rapid Communication

Ovarian metastasis was described the first time by Friedrich Ernst Krukenberg in 1896. Even if the historical timeline dates back to sir James Paget who had described the process in 1854 [1]. The tumor was metastasizing from gastric cancer. Consequently, all metastatic ovarian cancers had been referred to as Krukenberg tumors [2]. Actually, Krukenberg tumors account for approximately 15% of malignant neoplasms involving the ovary and are bilateral in 80% of cases [3]. The primary tumors are usually in the stomach (70%), colon, pancreas, biliary tract and breast (mainly invasive lobular carcinoma). Rare cases originating from carcinomas of appendix, ampulla of Vater, uterine cervix, and urinary bladder have been reported.

The mode of spread of the tumor cells to the ovaries are direct, hematogenous or through lymphatics [4]. Krukenberg tumours are considered as a late stage disease and their prognosis is very poor. It is crucial to distinguish these tumors from primitive ovarian carcinoma because of the differences in their treatment strategies, chemotherapy protocols and prognosis [5]. Clinically, the unilateral tumor, the lower tumor staging, and the clinical history of adenofibroma or cyst adenoma are more in favor of primary carcinoma of ovary. Ultrasound is used as the first imaging approach to evaluate these masses whereas Multidetector Computed Tomography (MDCT) and Magnetic Resonance Imaging (MRI) are considered the techniques of choice to detect them. For the characterization, laparoscopy and biopsy are necessary. The detection of a solid or mixed cystic ovarian mass associated with a suspicious gastrointestinal anomaly should be considered as a metastatic tumor until proven otherwise [6].

These secondary tumors may morphologically resemble the primary ovarian carcinomas, making the differential diagnosis difficult between these entities [7]. One of the most important morphological features is the presence of signet ring cells in Krukenberg tumours which is rare in primary ovarian mucinous tumors [8]. Immunohistochemical staining may contribute to differentiate between them since CK20 positivity,

usually, favours a metastatic gastrointestinal carcinoma [7]. Indeed, the tumors negative for CK7 and immunoreactive for CEA or CK20 are more likely to be of colorectal in origin whereas the immunoreactive tumors to both CK7 and CK20 origin mostly from gastropancreatobiliary tract [4,9]. Treatment strategies of Krukenberg tumours should be discussed in a multidisciplinary board team especially when ovary is the single metastasis from colorectal or gastric cancers. The optimal treatment of Krukenberg tumors is to date unclear. The role of surgical resection has not been adequately addressed but if metastasis is limited to the ovaries, surgery may improve survival [10].

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