

Krukenberg Tumor in a Young Woman: A Rare Presentation

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Abstract: Krukenberg tumors mostly occur after 40 years. Metastatic ovarian tumors in young age are very rare and reported to be 2% of all the cases. A 30 year old woman, parity-2, presented with pain abdomen, abdominal distension and amenorrhea. On examination 18 weeks lump was palpable firm to hard in consistency and mobile. On ultrasonography bilateral ovarian tumors were reported. Total abdominal hysterectomy with bilateral salpingo-oophorectomy was performed. Microscopic examination revealed signet ring cells with glandular differentiation, diffusely invading the parenchyma. Diagnosis of KRUKENBERG tumor was made. Endoscopic biopsy confirmed the diagnosis of adenocarcinoma stomach. This case is reported because of its rarity in younger age group.

Keywords: ovaries, krukenberg, metastasis

1. Introduction

Krukenberg tumors are named after Friedrich Ernst Krukenberg. Krukenberg tumors are often (over 80%) found in both ovaries, consistent with their metastatic nature. Metastatic cancer to ovary accounts for 1-2% of all ovarian cancers. [3] The average age of presentation is 40-46years. It is rarely seen in younger age group and only few such cases have been reported. We present here a secondary malignancy in the ovary that has metastasized from gastrointestinal tract in a 30 year old female.

2. Case Report

A 30 year old woman, with parity-2 presented with abdominal distension, pain abdomen and amenorrhea. On examination, 18weeks mass was palpable, firm to hard in consistency, non-tender and mobile. Her urine pregnancy test was negative. Ultrasonography revealed bilateral enlargement of ovary. CA125 was normal. The patient underwent total abdominal hysterectomy with bilateral salpingo-oophorectomy. The resected tumour measured 12×10×8cm on right side and 9×7×10cm on left side. The external surface of the tumour was tense, cystic, bosselated and firm to hard in consistency. The cut section of the tumour was solid, homogenous and white, with mucinous areas.



Figure 1: Bilateral salpingo-oophorectomy specimen



Figure 2: Cutsurface of the tumor show solid white mucinous areas

3. Microscopy

Predominance of the signet ring cells with foci of glandular differentiation and solid sheets diffusely invading the ovarian parenchyma. The tumour cells were enlarged and hyperchromatic. At some places, areas of extracellular mucin with mucin lakes were seen. During followup, endoscopic biopsy confirmed the diagnosis of adenocarcinoma stomach.

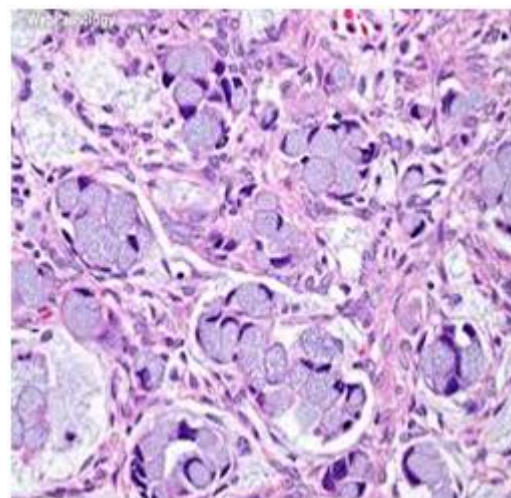


Figure 3: Signet ring cells arranged in glandular pattern

4. Discussion

Krukenberg tumour most commonly metastasizes from gastric carcinoma, particularly adenocarcinoma of stomach. [2] The other sites implicated for Krukenberg tumour are breast (invasive lobular breast carcinoma), appendix, colon, small intestine, rectum urinary bladder, gallbladder, biliary tract pancreas, ampulla of vater and uterine cervix. [3] The mode of spread of the tumour cells to the ovaries are direct, hematogenous or through lymphatics.

Primary ovarian mucinous carcinoma and a metastatic mucinous carcinoma can be differentiated on the basis of clinical features, morphological and pathological findings. The presence of signet ring cells is one of the most important morphological features of metastatic mucinous carcinoma of ovary, which are rare in primary ovarian mucinous tumours. The feature favouring secondary mucinous carcinomas are, surface tumour deposits, a nodular growth pattern, and lymphovascular permeation.

The features more in favour of primary carcinoma of ovary are unilateral tumour, lower tumour staging, and background of adenofibroma or cyst adenoma. [3] The immunohistochemistry may help in diagnosing Krukenberg tumour from primary ovarian neoplasm, but needs to be applied with discretion. The tumours that are immunoreactive for CEA or CK20 an negative for CK7 are more likely to be of colorectal in origin. [3]

However, the tumours that are immunoreactive to CK7 and CK20 are more likely to be of gastropancreatobiliary in origin. CK7 and CK20 are usually not reactive in primary carcinoma. The rarity of this case is due to the rarity of gastric cancer in young women. Indeed, only 0.4 to 0.5% of gastric cancers occurs in women aged less than 30 years. The prognosis is worse if the primary tumour is identified after ovarian metastasis.

Chemotherapy and radiotherapy have no significant role in the management and clinical course of Krukenberg tumours. As no curative treatment is available, some authorities advocate bilateral oophorectomy during surgery of the primary tumour. This treatment option requires further study and evaluation for better outcome.

5. Conclusion

Krukenberg tumours are very rare in younger age group. There poor prognosis emphasizes the importance of early diagnosis and treatment. Better awareness in younger patients is important for timely detection, fertility sparing treatment and survival.

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