

## **Krukenberg tumor - an unusual case.**

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### **I. Introduction**

Krukenberg tumor is a metastatic adenocarcinoma of ovary [2]. It is rare, accounts for 30-40% of those tumors which secondarily metastasize to ovary. Metastasis is from gastric adenocarcinoma, specially from pylorus-70% followed by bowel-10%, breast-4%, biliary system-3%, appendix-3% and remaining 3% from lungs, pancreas, bladder, renal pelvis and rarely from cervix [1, 3]. 80% cases have bilateral ovarian involvement [4]. Radiological evaluation may mimic other metastatic or primary ovarian tumors thus leading to difficulty in diagnosis [1]. They commonly occur in age group between 30-40 years and after menopause. We present a case of 20 year old unmarried girl with gross ascites and pleural effusion with bilateral krukenberg tumor.

### **II. Case**

20 years old unmarried girl with 3 months history of rapidly progressing ascites, pleural effusion and breathlessness was admitted. Further evaluation revealed bilateral large ovarian masses on ultrasound with raised CA125 levels. Her laboratory values were normal except CA125 more than 600 units/lit which directed us towards diagnosis of malignant ovarian tumor. CECT revealed gross ascites, right sided pleural effusion and bilateral large heterogenous ovarian masses. Patient was planned for laparotomy before which she underwent a therapeutic pleural fluid tap which showed raised lymphocyte count >70%, small clusters of reactive mesothelial cells but no neoplastic cells. On laparotomy ~3 litres of milky white ascites fluid was drained and then bilateral salphingoophorectomy was done. Grossly right ovarian mass was 8×6×5 cm and left ovarian mass was 9×7×5 cm with grey-white external surface having multiple nodules and bosselated appearance. Cut sections of both showed solid and cystic areas with serous fluid. Histologically tissue had signet ring cells lying in clusters between ovarian stoma suggestive of krukenberg tumor. The omental and peritoneal biopsy did not show neoplastic cells. Based on histological findings bilateral krukenberg tumor was diagnosed. Tumor was found to be cytokeratin 7 positive which indicate secondary metastatic adenocarcinoma of ovary. Detailed radiologic and endoscopic examination of the digestive system was advised but patient was not willing for further investigations. She was given 3 courses of chemotherapy. She expired inspite of all efforts because of disease progression.

### **III. Discussion**

Paget in 1854 first discovered Krukenberg tumor. It was named after Friedrich Ernst Krukenberg (1871-1946) when he studied cases with ovarian enlargement and found the primary site of tumor somewhere else than ovaries. Krukenberg tumor is an uncommon metastatic signet ring cell tumor of ovary that originates primarily in stomach [1]. This gastric cancer can be small enough to remain undetected even after several years of oophorectomy. Due to marked proliferation of the stroma grossly they resemble fibrothecomas. Its incidence is 0.16/100,000. They contribute only 30-40% i.e. much less than that metastases from other than ovarian cancers. Most common age group is between 30-40 years and is rare after menopause [5]. They commonly present with symptoms of ascites, bloating pelvic pain and sometimes with menstrual irregularities. Only 20-30% had prior history of stomach or colon cancer [6]. Our case was an unusual presentation with ascites, pleural effusion at the age of 20 years without any symptoms to direct us in its early detection. The diagnosis of this tumor depends on histological characteristics of signet ring cells arranged singly or in clusters with abundant cellular stroma [3].

Its diagnosis can be confused with other primary ovarian tumors like sertoli-leydig cell tumor, mucinous cystadenocarcinoma of ovary, clear cell carcinoma, sclerosing stromal tumor. But their gross and microscopic findings can rule out these lesions. Chemotherapy and radiotherapy have no significant prognosis [1].

### **IV. Conclusion**

Krukenberg tumor is a rare clinical entity. It is essential to rule out other ovarian malignancy to rule out other ovarian malignancy to avoid wrong diagnosis and management of the krukenberg tumor. Serum CA125 level can help to predict the prognosis.

**References:**

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**Figure 1 cut section of specimen showing solid and cystic area with serous fluid**



**Figure 2 showing milky white ascitic fluid**



**Figure 3 gross appearance of specimen showing nodularity and bosselated external surface**