VOLUME - 10, ISSUE - 11, NOVEMBER - 2021 • PRINT ISSN No. 2277 - 8160 • DOI : 10.36106/gjra

Original Research Paper

General Surgery

UNILATERAL KRUNKENBERG TUMOUR IN A YOUNG FEMALE – A CASE REPORT

Dr. Sunil Kumar Negi	General Surgeon, Regional Hospital , Reckong Peo, Distt. Kinnaur, H.P.
Dr. D.K Verma	Professor , Deptt. of General Surgery IGMC Shimla
Dr. Lalita Negi	Associate Professor , Deptt. of Pathology IGMC Shimla.
Dr. Sanchita Singla	Junior Resident, Deptt. of General Surgery IGMC Shimla.
Dr. Abhinav Kumar	Junior Resident, Deptt. of General Surgery IGMC Shimla.
Dr. Anish Chandran	Junior Resident, Deptt. of Pathology IGMC Shimla
Dr. Cliffin Mathai Kattoor*	Junior Resident, Deptt. of General Surgery IGMC Shimla. *Corresponding Author

ABSTRACT Krukenberg tumor is a rare metastatic tumor of the ovary accounting for 1% to 2% of all ovarian tumors. They are characterize by signet ring cells on histopathology. They spread from primary site such as stomach, colon, appendix and breast. They are bilateral in 80 % of the cases. Krukenberg tumors mostly occur after 40 years. These tumors are very rare in young age group. We report a case of 27 yrs female with unilateral krukenberg tumor.

KEYWORDS : krukenberg tumor, GPE, USG , CECT, HPE ,oopherectomy, signet ring cell.

INTRODUCTION

Krukenberg tumor is a metastatic signet ring cell adenocarcinoma of the ovary**.** Krukenberg tumors are named after Friedrich Ernst Krukenberg . It is a rare tumour of the ovary and accounts for 1-2 % of all ovarian cancers (1)**.** It is bilateral in 80 % of the cases. They metastasizes from primary site, gastrointestinal tract, stomach, colon. appendix , pancreas and breast. In majority of cases, stomach is the primary site (2). The average of diagnosis is 45 years. They are rarely seen in younger age group. We report a case of 27 yrs female with unilateral krukenberg tumor.

CASE REPORT

27 years old female at 8 th postnatal day of preterm vaginal delivery presented with complain of pain abdomen for 2-3 days. History of (h/o) multiple episodes of vomiting. No h/o non passage of flatus and stool. On general physical examination (GPE) , pulse rate of 100 per minute, blood pressure of 90/48 mm of Hg, Spo2 of 90 % @ room air. There was pallor. On per abdomen, there was a large intraabdominal intraperitoneal lump of size 10 *8 cm present in right lumbar and iliac region, moving slightly with respiration. No signs of peritonitis.

Uterus was not palpable. Respiratory , CVS and CNS was within normal limit. Her lab. Invetsigation reveals , Hb-4.4 g/dl, Serum Sodium -132 meq/L and Serum Potasium- 2.85 meq/L. Rest of investigations were within normal limit. Patient was resusciated and 3 units of whole blood transfused. USG abdomen and pelvis reveals large hetrogenously hyperechoic area on right side of abdomen ? hematoma. USG guided tap done and blood was aspirated.

CECT abdomen and pelvis shows large well defined abdominopelvic mass with multiple tortous cascular channels in its posterioinferior aspect with free fluid in the abdomen and pelvis ? AVM with bleed ?? hematoma with active bleed.

Patient was explored. Intraoperatively , there was about 300 cc of blood , enlarged right ovary of size 20* 6 cm occupying right side of abdomen upto inferior surface of liver with ovarian torsion. Right oopherectomy and peritoneal toileting and lavage done. (Figure-1)

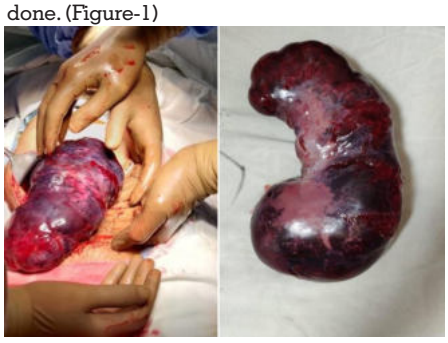

Figure -1. Right ovary specimen .

Abdomen was closed in layers. Postoperative periods was uneventful and patient was discharged . Patient came with complain of lump in right lower abdomen one week after surgery. h/o hemetemesis and malena. h/o loss of appetite and weight. On per abdomen , single hard lump of size 6*6 cm present in right iliac fossa with restricted mobility, irregular surface and margins.lab. investigation shows Hb-9.4 g/dl , serum Albumin -2.4 g/dl. Rest investigations were within normal limit.

CECT abdomen reveals asymmetrical circumferntial wall thickening involving antropyloric region of stomach causing luminal narrowing , significant ascites and bilateral pleural effusions.(Figure-2)

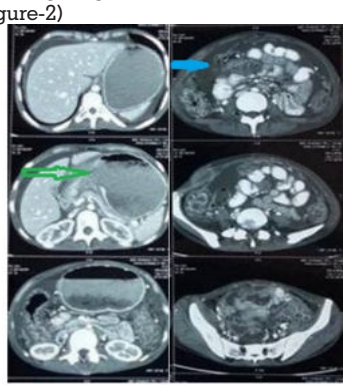

Figure -2. Green arrow shows asymmetrical wall thickening at antropyloric region causing luminal narrowing , sky blue arrow shows gross ascites.

Upper G.I. Endoscopy shows ulceroproliferative growth in antropyloric region of stomach. Scope not negotiable beyond. (Figure -3)

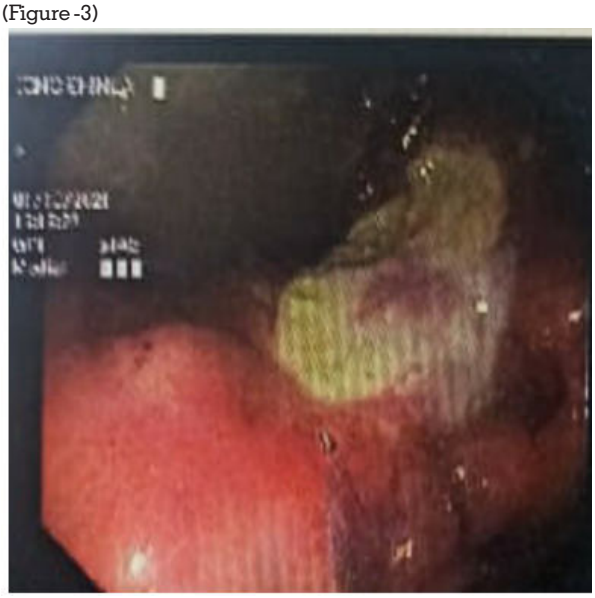

Figure -3. Upper G.I endoscopy showing ulcero-proliferative growth at antro-pyloric region.

Histopathological examination (HPE) of stomach growth biopsy reveals moderaltely differentiated adenocarcinoma. (Figure-4)

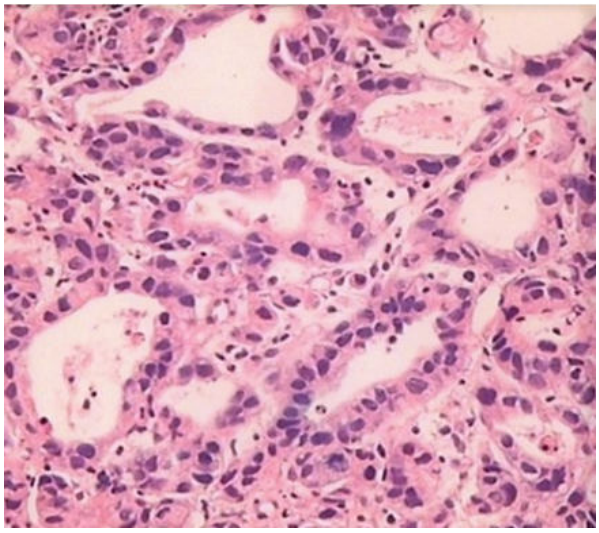

Figure -4. H.P.E of stomach biopsy shows moderately differentiating adenocarcinoma (H and E x40 oil emersion).

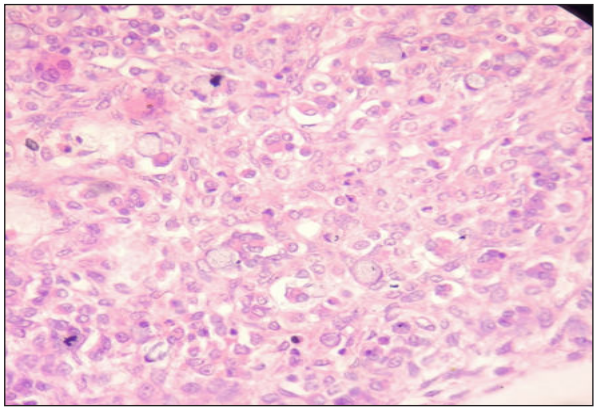

Figure -5. H.P.E Of Right Ovary Specimen Shows Ovarian Stroma Diffusely Infiltrates By Signet Ring Cells Having Eccentric Nuclei And Abundant Pale Cytoplasm (H and E x40 oil emersion).

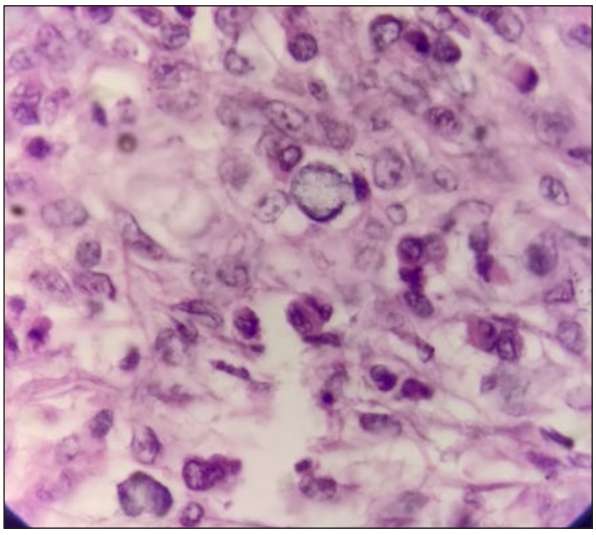

Figure -6. H.P.E Of Right Ovary Specimen Shows Signet Ring Cells With Eccentric Hyperchromatic Nuclei And Eosinophilic Granular Cytoplasm (H and E x100 oil emersion).

Biopsy of fallopian tube stump shows ovarian stroma diffusely infiltrating by signet ring cells having eccentric nuclei and abundant pale cytoplasm suggestive of metastatic tumor deposits- Krukenberg tumor of right ovary. (Figure-5,6)

DISCUSSION

Krukenberg tumor is a metastatic signet ring cell adenocarcinoma of the ovary. They constitute 1% to 2% of all ovarian neoplasms, usually presented in young female with average age of 45 years (1,3). They are more prevalent in Asian countries due to higher prevalence of gastric carcinoma (1) . Krukenberg tumor are more common in premenopausal women (75%) than in postmenopausal women (4). They are bilateral in more than 80% of the cases. Most of the cases originate from gastric adenocarcinoma. The other sites are breast , appendix, colon, small intestine, rectum, urinary bladder, gallbladder, biliary tract, pancreas, cervix (5). The most common route for spreading metastasis is retrograde lymphatic pathway. Less common pathways are hematogenous or transperitoneal direct spread (6,7). They are synchronous in majority of cases , but in 20% to 30% occur as metachronous .Grossly, Krukenberg tumors are asymmetrically enlarged with bosselated surface (1,8). Microscopically, they are signet ring cells adenocarcinomas accounting for at least 10% of the tumor (9) .IHC plays an important role in confirming the diagnosis. The most commonly used IHC markers are CK7, and CK20 (1) .Metastatic gastric carcinomas are CK7 and CK20 positive in 55%, and 70% of cases, respectively .Colorectal carcinomas are usually negative for CK7 but positive for CK20 in most cases (10) .Common symptoms are abdominal pain and distension (11). Ascites is present in 50% of the cases and usually reveals malignant cells.Diagnosis of the primary carcinoma can be done either preoperatively, during surgery or within a few months postoperatively (12) .

The primary tumor is often too small to be detected. In such a situation, the diagnosis of the Krukenberg tumor requires careful radiographic and endoscopic examination to detect primary carcinoma. The main imaging techniques employed are: ultrasound abdomen and pelvis,CT and pelvic MRI.Krukenberg tumours are typically seen as solid ovarian masses, with clear well-defined margins on ultrasound . A characteristic feature is an irregular hyperechoic solid pattern

and a moth eaten like cyst formation.(13).Krukenberg tumours may show some typical features on an MRI, such as bilateral, lobulated and solid masses (14). The prognosis of a patient with Krukenberg tumor is extremely poor with average survival time between 3 and 10 months (15). Krukenberg tumour should be treated with excision of the primary tumour and ovarian metastasectomy if other dissemination or ascites are absent (16).

CONCLUSION

Rare metastaic tumor in young women.Better awareness of disease in younger patients is important for early diagnosis, fertility-sparing treatment and survival.

Acknowledgment: none

Conflict If Interest: none

Funding Details : none

REFERENCES

1. Al-Agha OM, Nicastri AD. An in-depth look at Krukenberg tumor: an overview. *Arch Pathol Lab Med*. 2006;130(11):1725–1730.
2. Rosai J. Ovary. Rosai and Ackerma's Surgical Pathology. 10 ed. St Louis Mosby: Elsevier; 2011:1367-431.
3. Young RH. From krukenberg to today: the ever present problems posed by metastatic tumors in the ovary: part I. Historical perspective, general principles, mucinous tumors including the krukenberg tumor. Adv Anat Pathol 2006;13:205-27.
4. Wu F, Zhao X, Mi B, Feng LU, Yuan NA, Lei F, et al. Clinical characteristics and prognostic analysis of Krukenberg tumor. Mol Clin Oncol. 2015;3(6):1323-8.
5. Kiyokawa T, Young RH, Scully RE. Krukenberg tumors of the ovary: A clinicopathologic analysis of 120 cases with emphasis on their variable pathologic manifestations. Am J Surg Pathol 2006;30:277-99.
6. Kakushima N, Kamoshida T, Hirai S, et al. Early gastric cancer with Krukenberg tumor and review of cases of intramucosal gastric cancers with Krukenberg tumor. *J Gastroenterol*. 2003;38(12):1176–1180.
7. Kim NK, Kim HK, Park BJ, et al. Risk factors for ovarian metastasis following curative resection of gastric adenocarcinoma. *Cancer*. 1999;85(7):1490–1499.
8. Aziz M, Kasi A. Cancer, krukenberg tumor. Treasure Island (FL): StatPearls Publishing; 2020.
9. Nakamura Y, Hiramatsu A, Koyama T, Oyama Y, Tanaka A, Honma K. A Krukenberg tumor from an occult intramucosal gastric carcinoma identified during an autopsy. Case Rep Oncol Med. 2014;2014:797429.
10. Peng W, Hua RX, Jiang R, Ren C, Jia YN, Li J, et al. Surgical treatment for patients with Krukenberg tumor of stomach origin: clinical outcome and prognostic factors analysis. PLoS One. 2013;8(7):8227.
11. De-Palma P, Wronski M, Bifernino V, Bovani I. Krukenberg tumor in pregnancy with virilization: a case report. Eur J Gynaecol Oncol. 1995;16(1):59-64.
12. Hale RW. Krukenberg tumor of the ovaries: a review of 81 records. Obstet Gynecol. 1968;32(2):221-5.
13. Moghazy D, Al-Hendy O, Al-Hendy A. Krukenberg tumour presenting as back [4]pain and a positive urine pregnancy test: a case report and literature review. *Journal of Ovarian Research*. 2014;7:36.
14. Koyama T, Mikami Y, Saga T, Tamai K, Togashi K. Secondary ovarian tumours: spectrum of CT and MR features with pathologic correlation. *Abdominal Imaging*. 2007;32(6):784-95.
15. Yook JH, Oh ST, Kim BS. Clinical prognostic factors for ovarian metastasis in women with gastric cancer. Hepatogastroenterology 2007;54:955-9.
16. Das S, Sahu D, Wani M, Reddy PK. A curious discourse of Krukenberg tumour: a case report. *Journal of Gastrointestinal Oncology*. 2014;5(6):E117-20.