SURGICAL EXCISION OF HUGE KRUKENBERG TUMOR IN METASTATIC COLON CANCER GREAT OUTCOMES : CASE REPORT

By

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INTRODUCTION

❖ Krukenberg tumours (KTs) are defined by the WHO as ovarian carcinomas characterized by the presence of stromal involvement, mucin-producing neoplastic signet ring cells Carcinoma (SRCC).

❖ Up to 30 % of ovarian metastases arise from a colorectal origin, Inspite of gastric adenocarcinoma Is the most common primary site.

(Shiono . et al., 2014).

❖ The presence of KTs appears to indicate extensive malignant spread within the abdominal cavity. Usually with poor prognosis(most patients die within 1 year after diagnosis of ovarian Metastasis), and a high incidence of peritoneal metastatic disease

❖ Chemotherapy improves response in colorectal malignancies but has low antineoplastic activity in the ovaries (which act as a shield for cancer cells).

❖ There is a debate for patients with KTs of colorectal origin with poor prognosis, poor patient tolerance to surgery, difficult tumor resection, and a high risk of complications.

❖ Some studies have shown that resection of metastatic tumors can prolong survival; whilst others have found that aggressive surgical therapy offers no benefit for patients with KTs.

(Xu et al., 2017).

PRESENTATION OF CASE

EARLY HISTORY

- 28-year-old female
- developed Intestinal Obstruction & went to private hospital in cairo

Abdominal exploration

- Huge locally advanced rectosigmoid mass ***unresectable***
- peritoneal nodules all over the abdomen as reported with the patient
- Minimal mucous component
- Ascetic fluid cytology positive for malignancy and only ileostomy was done.(

(at Nov 2020)

CT CAP 12/2020

Rt. pleural effusion with large recto-sigmoid mass & bilateral small adnexal masses

LOWER ENDOSCOPY

Rectosigmoid adenocarcinoma grade II

Pt started 1st line neoadjuvant chemotherapy at Shefaa El Orman Hospital(SOH)

FOLFOXIRI 3 cycles

Followed by 3 cycles Avastin/ FOLFOX

CT CAP 4 /2021

- Mural soft tissue thickening at rectosigmoid junction,
- lt. pericolonic LNs ,
- still bilateral adnexal heterogeneous lesions more at right measuring 5.6x4.7 cm
- mild pelvic free fluid collection

Then The pt. received another 3 cycles

Avastin/ FOLFOX

PET/CT AT 8/2021 AT SOH

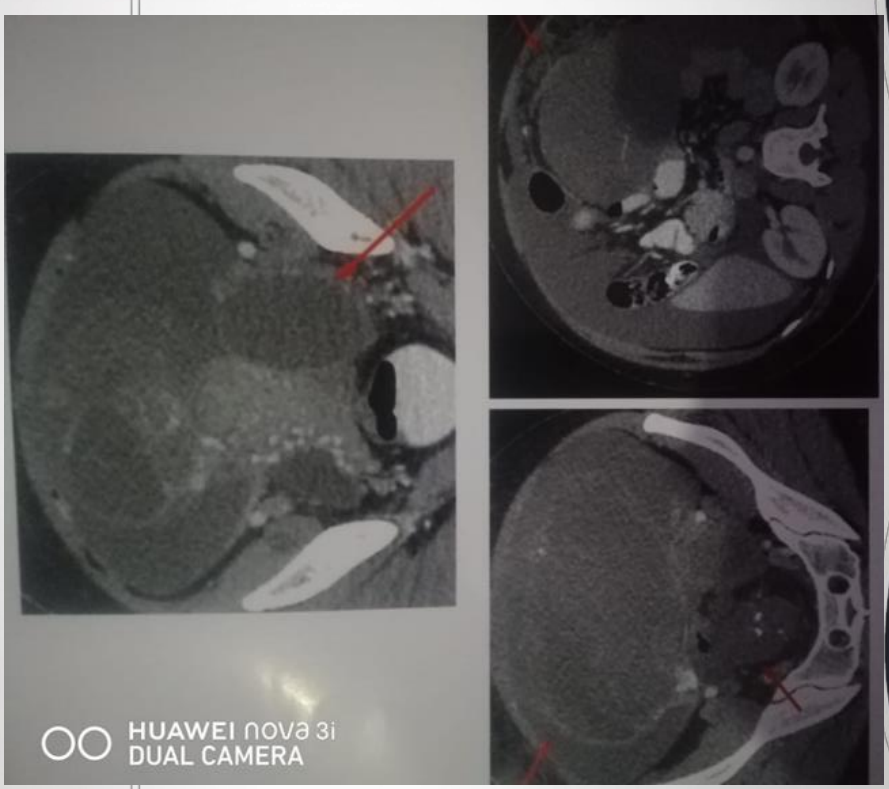
- Negative study for FDG avid active neoplastic disease or active metastatic deposits .

- MDT at SOH >>>>laparoscopic assessment

LAP. EXPLORATION AT SOH 8/2021

- Extensive abdominal adhesions
- Elevation transverse colon to ant. Abdominal wall
- Heavy infestation peritoneal nodules (mainly pelvic) ,rt. Sub-hepatic,sub diaphragmatic , small intestinal nodules & root of mesentery
- Large ovarian lesions (malignant featuring) , with ascites

And the Final Decision Was To Complete Neoadjuvant


HUAWEI nova 3i
DUAL CAMERA

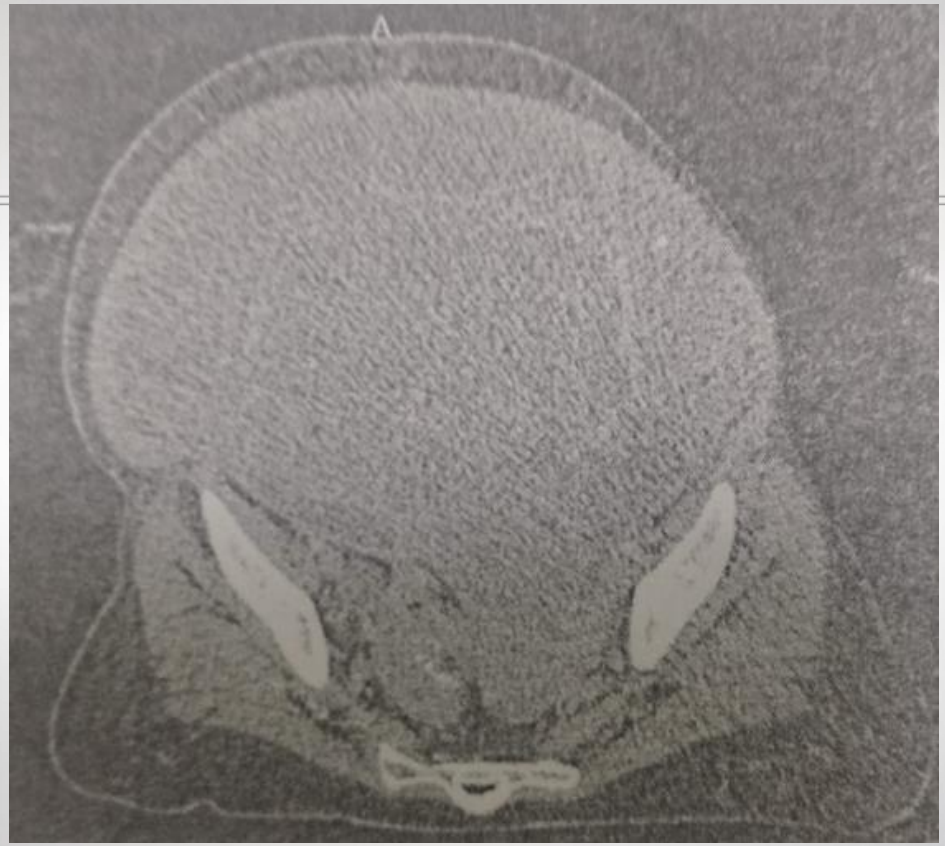
THE PT PRESENTED TO**QOC**

- Reassessment CT CAP
- Minimal bilateral pleural effusion
- Ascites
- Rt. Ovarian mass
- stationary course rectosigmoid mass

The pt. then received 6 cycles FOLFIRI

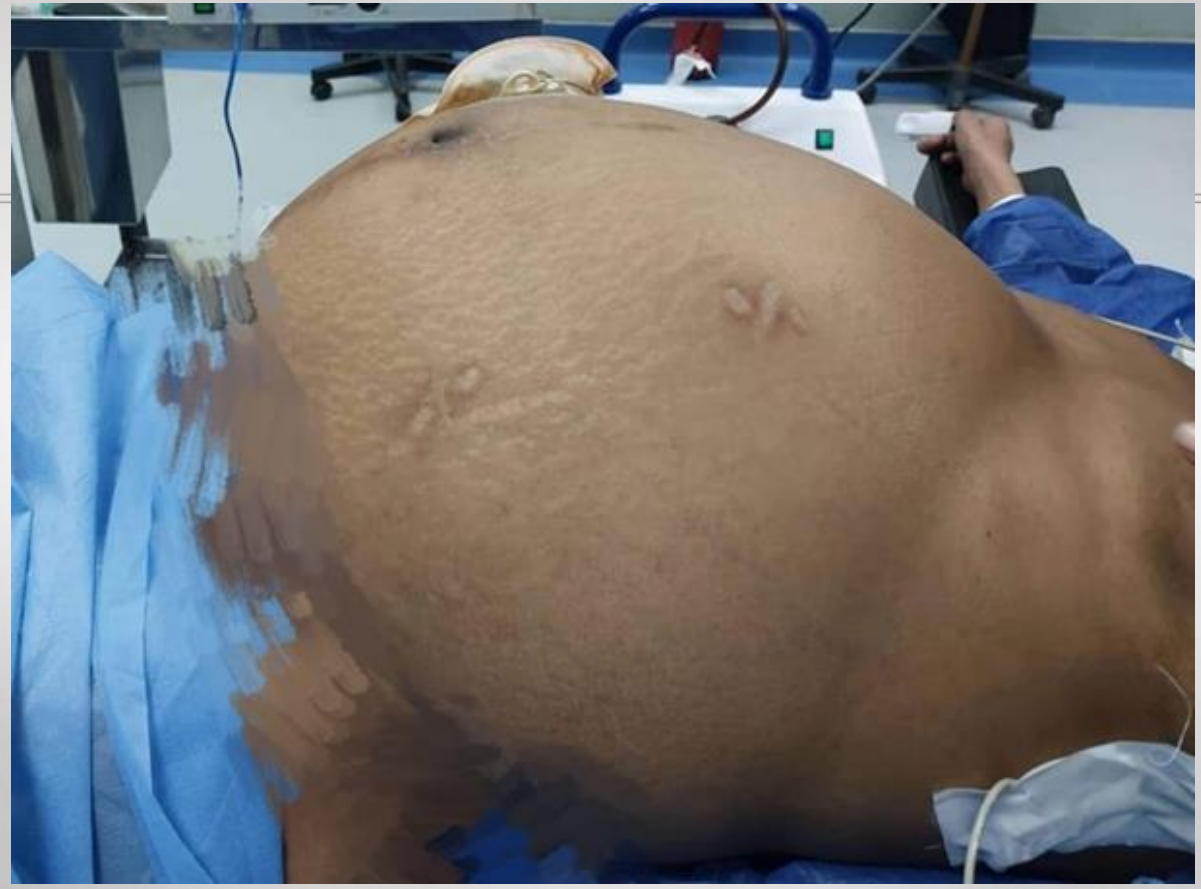
CT CAP & MRI AT 4/2022

- Bilateral pleural effusion
- Progressive course rectosigmoid mass 5.3x3.9x6.8 cm
- Newly developed pericolic LNs
- Large pelviabdominal mass 34 x28x30 cm.

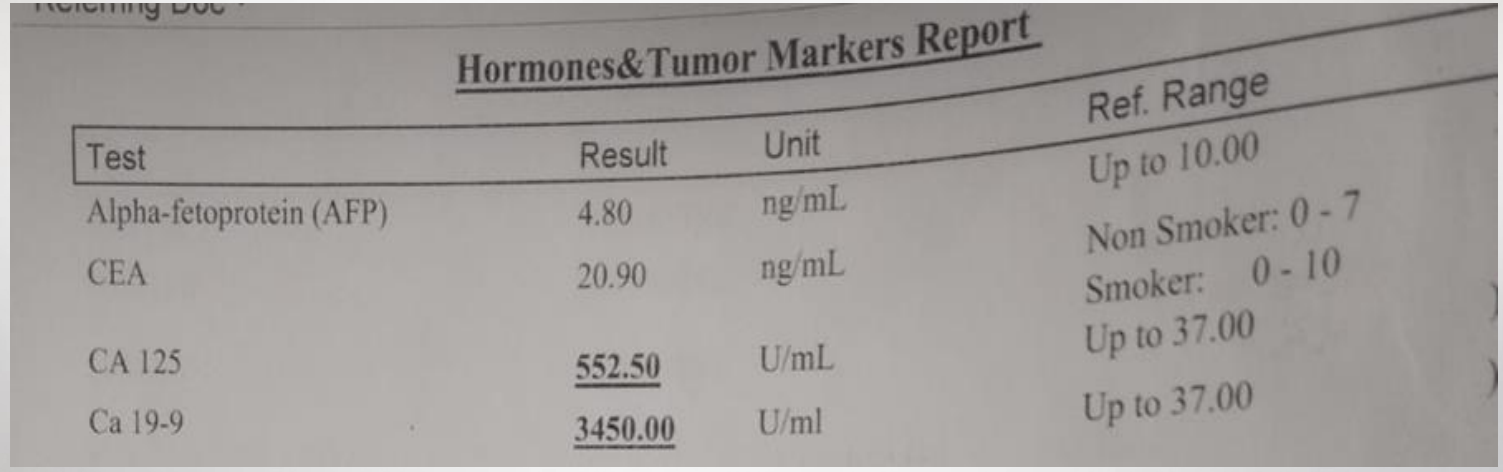


CLINICALLY

- The pt. developed marked abdominal distension ,
- Dyspnea
- Marked Cachexia
- Attacks of vomiting
- Poor response to neoadjuvant so the decision was surgical excision to the mass.



LABORATORY TESTS

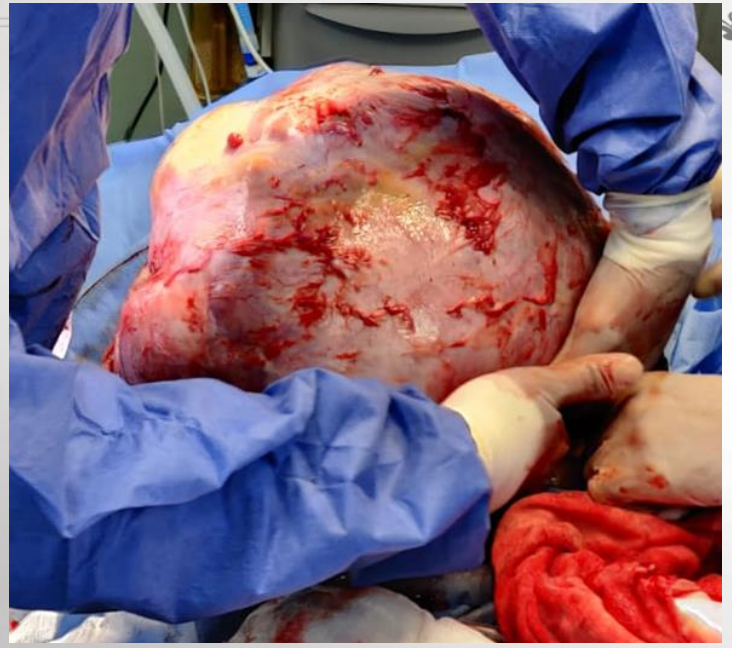


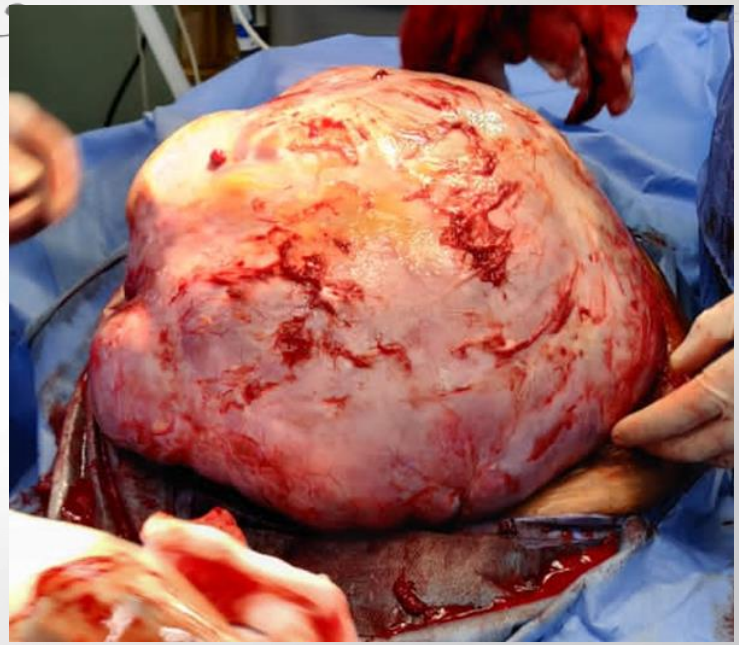
Hormones&Tumor Markers Report

Test	Result	Unit	Ref. Range
Alpha-fetoprotein (AFP)	4.80	ng/mL	Up to 10.00
CEA	20.90	ng/mL	Non Smoker: 0 - 7 Smoker: 0 - 10
CA 125	**552.50**	U/mL	Up to 37.00
Ca 19-9	**3450.00**	U/ml	Up to 37.00

EXPLORATION WAS DONE AT 6 /2022

- Huge Rt. Ovarian lesion attached to stomach and transverse colon
- The rectosigmoid mass was locally infiltrating adjacent tissues and retroperitoneal surroundings, lt. ureter, mesenteric vessels
- Peritoneal nodules all over the abdominal cavity
- Most of the colon was infiltrated by the tumor

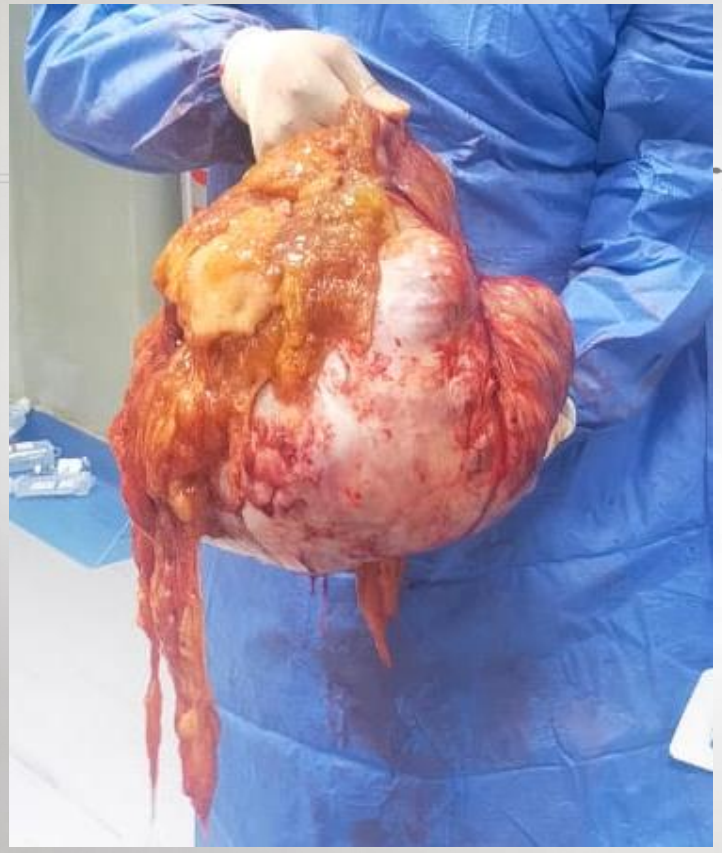


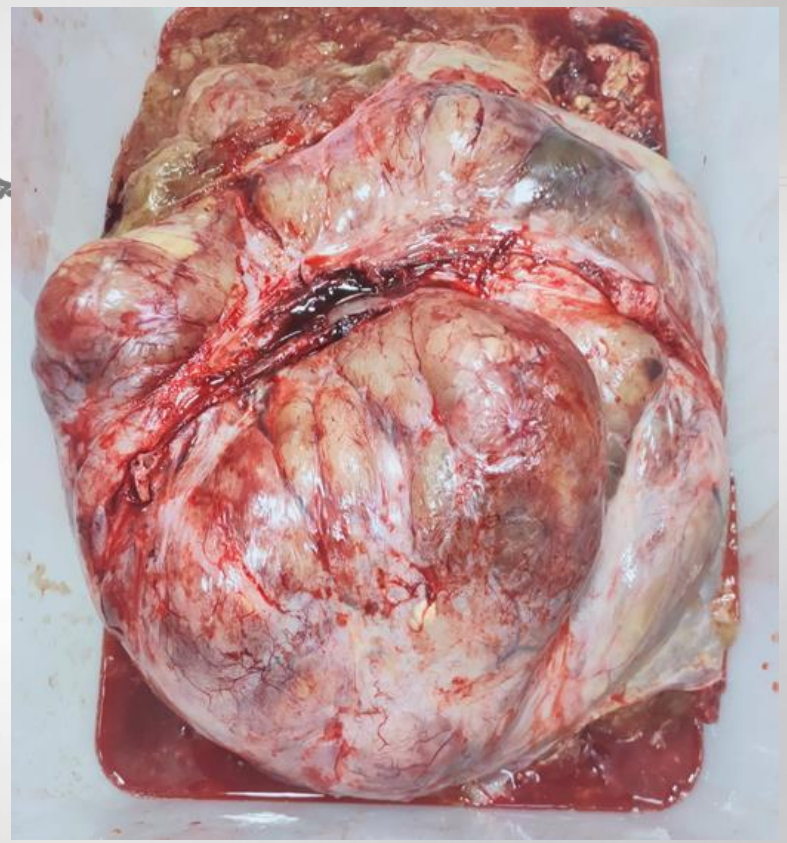


❖ Due to the vey bad general condition of the pt. and the pt. demand as regard fertility sparing .

❖ Rt. SalpinOopherectomy only was done with excision of infiltrated part of stomach and resection of part of transverse colon and anastomosis.

❖ NB : Grossly , The Lt. Ovary was completely normal

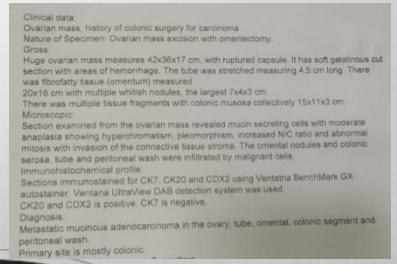




HISTOPATHOLOGY

Metastatic mucinous adenocarcinoma Huge ovarian mass

42x36x17 cm, tube, omental, colonic segment and peritoneal



Clinical data:
Ovarian mass, history of colonic surgery for carcinoma
Nature of Specimen: Ovarian mass excision with omentectomy.
Gross:
Huge ovarian mass measures 42x36x17 cm, with ruptured capsule. It has soft gelatinous cut section with areas of hemorrhage. The tube was stretched measuring 4.5 cm long. There was fibrofatty tissue (omentum) measured
20x16 cm with multiple whitish nodules, the largest 7x4x3 cm.
There was multiple tissue fragments with colonic musosa collectively 15x11x3 cm.
Microscopic:
Section examined from the ovarian mass revealed mucin secreting cells with moderate anaplasia showing hyperchromatism, pleomorphism, increased N/C ratio and abnormal mitosis with invasion of the connective tissue stroma. The omental nodules and colonic serosa, tube and peritoneal wash were infiltrated by malignant cells.
Immunohistochemical profile:
Sections immunostained for CK7, CK20 and CDX2 using Ventatna BenchMark GX autostainer. Ventana UltraView DAB detection system was used.
CK20 and CDX2 is positive. CK7 is negative.
Diagnosis.
Metastatic mucinous adenocarcinoma in the ovary, tube, omental, colonic segment and peritoneal wash.
Primary site is mostly colonic

OUTCOMES

- Symptoms improved markedly post operative and the pt. gain weight ,good respiration and with good response to neoadjuvant chemotherapy
- Marked improvement of abdominal distension, Dyspnea & vomitting

- The pt. then started palliative chemotherapy treatment again and showing good response to it
- Follow up one year later unfortunately there were another rapidly growing pelvic mass

PET/CT AT 3/2023

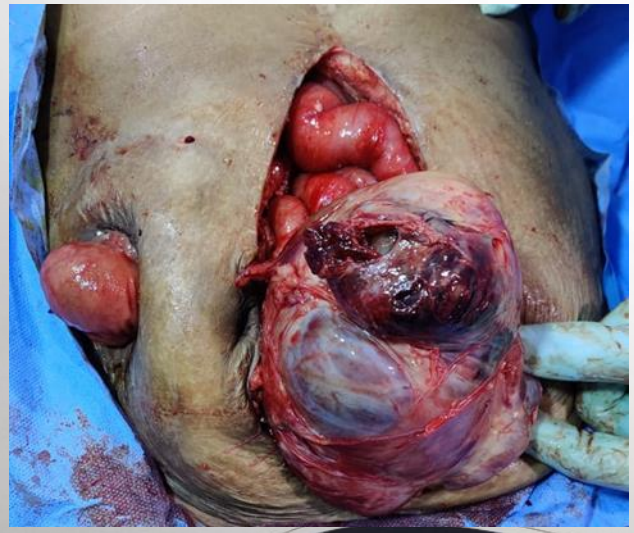
- Rectosigmoid mass about 4.7x3.6 cm (regressive course)
- Another Huge lt. sided pelvic neoplastic cystic mass about 10x8x10cm

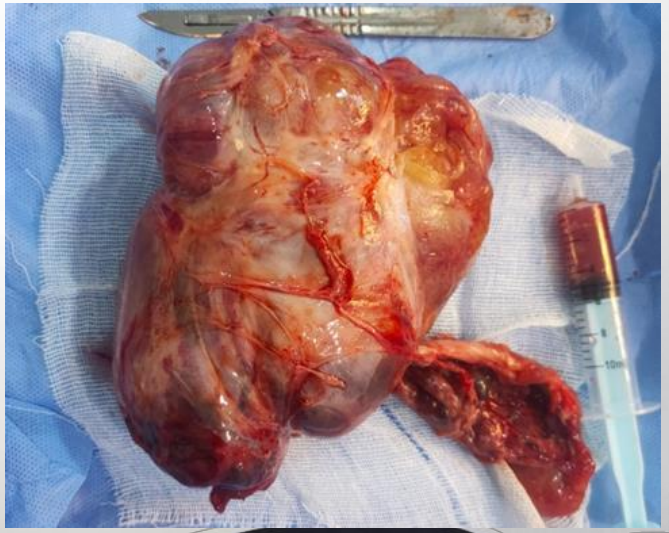
At 5/2023 the pt. did a 3rd Exploratory abdominal operation

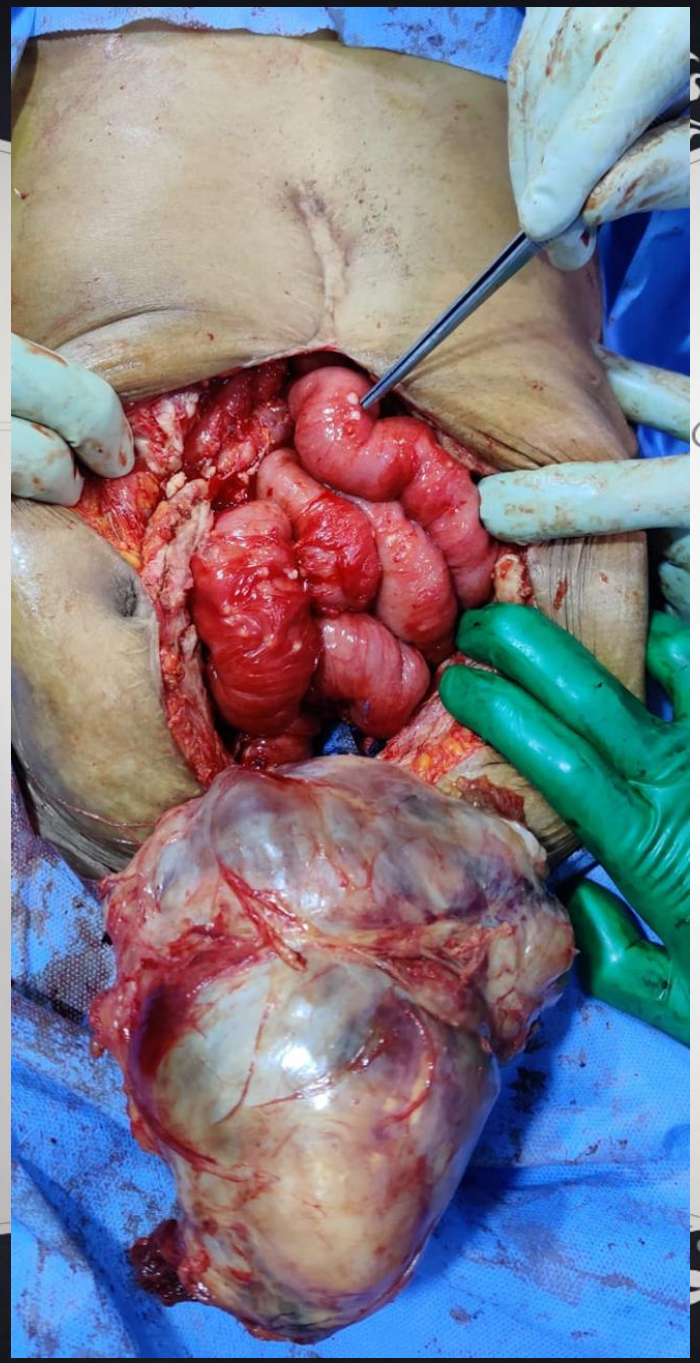
- the recto sigmoid mass was highly infiltrating the surroundings and locally advanced, multiple nodules allover the small intestine
- Resection of another krukenberg tumor at lt. side

HISTOPATHOLOGY

Mucinous Adenocarcinoma with Focal Signet Ring Differentiation lt.ovarian KT 12x9x8 cm







PATHOLOGY REPORT

Gross Pathology:
Salpingo-Oophorectomy formed of ovarian multilocular cystic mass with rough surface measured 12 x 9 x 8 cms. Received open with attached oviduct portion 5 cms long. Serial cuts revealed soft greenish tan gelatinous cut section with cystified foci. Maximum wall thickness was up to 1.5 cm with grayish tan cut section.

Histology:
Sections examined from the ovarian mass revealed a malignant glandular growth formed of crowded individual and fused glands with cystically dilated forms filled by mucin. The glands were lined by anaplastic epithelial cells with pleomorphic hyperchromatic enlarged nuclei and mitotic figures, surrounded by desmoplastic stromal reaction. The tumor tissue was infiltrating the tubal wall. Wide mucinous secretory pools were seen.

Diagnosis:
Single Left Ovarian Mass (A Known Case Of Colon Cancer), Left Salpingo-Oophorectomy:
 # Mucinous Adenocarcinoma With Focal Signet Ring Differentiation.
 # From The Context Of The Patient's History, Krukenberg Tumor May Be Considered.

P.S:
Number of slides enclosed:5

LAST FOLLOW UP SINCE 7\2023

- The pt. now very good general condition
- No pleural effusion
- Good response to palliative chemotherapy the last metastatic work up showing good response
- so the pt. was diagnosed at Nov 2020 and till now is good general condition ,so surgical resection of KT in metastatic colon cancer improve life quality and expectancy

Discussion

❖ The ovary is the 2nd most common intra-abdominal solid organ site of metastasis of colorectal cancer after the liver.

❖ If one ovary is found to be positive for metastatic disease, a bilateral oophorectomy should be performed despite limited supporting data . because the contralateral ovary has an equal probability of metastatic involvement and may already have microscopic metastases.

(Banerjee et al., 2005)

❖ The prognosis of KTs is generally poor, and in particular, patients with KTs of gastrointestinal origin survive an average of 7–17 months on palliative treatment .Death eventually resulted from intra-abdominal tumour progression that was unresponsive to available drugs.

(Leen et al., 2012)

❖ Because it is metastatic disease with poor outcome, surgeons do not prefer surgical resection for KTs. And unfortunately When surgery is performed, it is frequently intended as palliative care.

❖ Additionally, a study in Japan reported that two patients with KTs of colorectal cancer origin who were treated with pelvic exenteration both survived for more than 5 years

(Sakakura et al., 2004)

❖ We agree with ***Elias and colleagues*** that early surgical intervention for the detection of a small volume of metastasis may optimise survival benefits. ***(2008)***

❖ in addition to its rarity ***Zogbi et al.,*** present case in which the metastasis occurred only 6 years after resection of the primary tumor, unilateral and in one place, in a postmenopausal woman and measuring 30 cm in length***.(2017)***

❖ ***Lam and Ong*** described a similar case of a 51-year-old Chinese woman with ovarian metastasis from unilateral right colon carcinoma, resected a year earlier and measuring 23 cm on the largest axis***.(2017)***

- ***Destri*** published a patient with KT after sigmoid carcinoma with hepatic metastasis, successfully resected***.(2017)***
- ***Shiono et al.,*** published a bilateral KT case whose largest ovary was 23.5 cm on the largest axis, synchronous with right colon carcinoma***(2014)***

Conclusion

❖In selected cases surgical excision of KT has favourable outcomes and prolong survival &probably increase life expectancy

❖ Improve response to palliative treatment

❖If one ovary is found to be positive for metastatic disease, a bilateral oophorectomy should be performed.

❖Early surgical intervention for the detection of a small volume of metastasis may optimise survival benefits.

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Thanks Very Much

& We Hope Rapid and complete Cure to the patient

SPECIAL THANKS TO MY GREAT FATHERS & BROTHERS

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