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CASE SERIES REVIEW OF OVARIAN METASTASIS IN GASTROINTESTINAL MALIGNANCIES

Oncology

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ABSTRACT

Objective A Krukenberg tumor is a very rare ovarian tumor which has metastasized from a primary site, accounting for 1%-2% of all tumors of the ovary. The presence of KTs indicate extensive malignant spread within the abdominal cavity. Chemotherapeutic drugs offering improved tumour response rates generally have low antineopastic activity in the ovaries, which act as a sanctuary for cancer cells. Surgical intervention is a reasonable alternative for the management of ovarian metastatic disease that is insensitive to these agents.Here we are presenting five cases of ovarian metastasis in primary gastrointestinal malignancies which were surgically treated with good outcome.

Material and method This is case series review of five cases of ovarian metastasis in gastrointestinal malignancies in our institution from 2016 to 2018 which was treated surgically.

Results Out of the five case , three patient was post menopausal and two patient in premenopausal group . in relation to origin of primary disease, two patients had primary in stomach, two from Pancreatico biliary and one from colorectal origin. Though patient with Krukenberg tumors have poor prognosis and survival rate, in our series 3 cases survived more than one year with good outcomes.

Conclusion Palliative surgery for patients with Krukenberg tumors can be performed safely in an experienced unit with acceptable complication rates. The decision to proceed with metastasectomy is influenced by several factors including the presence of symptoms, synchronous disease, and tumor response to chemotherapy, and should be made as part of a multidisciplinary team consensus. Where possible, bilateral oophorectomy should be performed to obviate the significant risk of symptomatic contralateral ovarian involvement.

KEYWORDS

Krukenberg Tumor, Antineopastic, Metastasectomy

INTRODUCTION

A Krukenberg tumor is a very rare ovarian tumor which has metastasized from a primary site, accounting for 1%-2% of all tumors of the ovary(1). Krukenberg tumours (KTs) are defined by the World Health Organization as metastasis of distinctive appearance charactered by presence of mucus filled signet ring cells accompanied by sarcoma like proliferation of ovarian stroma [2]. Metastasis to ovaries is most commonly from stomach, colorectum and breast . The presence of KTs indicate extensive malignant spread within the abdominal cavity. Indeed, the prognosis for KTs is so poor that most patients die within 1 year after diagnosis of ovarian metastasis. Chemotherapeutic drugs offering improved tumour response rates generally have low antineopastic activity in the ovaries, which act as a sanctuary for cancer cells. Surgical intervention may therefore represent a reasonable alternative for the management of ovarian metastatic disease that is insensitive to these agents.Here we present five cases of ovarian metastasis in primary gastrointestinal malignancy which were surgically treated with good outcome.

PRESENTATION OF CASES

CASE 1

60 year old postmenopausal female a case of carcinoma stomach operated for obstruction with total gastrectomy with D2 lymphadenectomy . post operative histopathology was signet ring type adenocarcinoma with 18/ 36 nodes positive (pT3N3M0). Five cycle of capecitabine and oxaliplatin chemotherapy given. Sixth cycle was not given owing to drug reactions. Patient was disease free for 1 year duration. After one year PETCT was taken on follow up revealed 6 x 5 cm mass lesion in right ovary with SUV 5.8.Laparotomy and metastatectomy was done . post operative histopathology of right ovary showed signet ring adenocarcinoma while left ovary was normal .Patient is disease free for 1 year and is on regular follow up.

CASE 2

58 year old post menopausal female,a case of carcinoma of the decending colon presented with obstruction and underwent emergency laprotomy during which left hemicolectomy was done. Post operative histopathology showed moderately differentiated adenocarcinoma pT3N2M0 Node 4/8 positive. Adjuvant 6 cycle capecitabine and oxaliplatin was given. Patient was disease free for six month..on followup, CECT ABDOMEN AND PELVIS revealed bilateral ovarian mass and colonoscopy showed noduloproliferative lesion 25 cm from anal verge . biopsy villo glandular adenoma with moderate dysplasia.. CEA- 51.4micro g/L and ca 125 -64.2 U/ml(elevated). Laparotomy showed bilateral ovarian mass with myxomatous component attached to mass.. bilateral ovariectomy and segmental resection of the large bowel was done (area were with villoglandular adenoma was found). Post op biopsy was reported as poorly differentiated signet ring adenocarcinoma of ovaries and colon growth as villoglandular adenoma .We have planned adjuvant chemotherapy for this patient.

CASE 3

36 year old peri menopausal women evaluated for lower abdominal pain found to have bilateral ovarian mass with CA 125- 62.16 and MRI of abdomen and pelvis revealed bilateral ovarian mass with minimal ascites..on staging laparotomy there was growth in the antro pyloric region with bilateral solid ovarian tumour.multiple para arotic nodes . bilateral ovariectomy was done and post operative histopathologywas reported as poorly differentiated adenocarcinoma with mucin pool suggestive of metastatic carcinoma. Patient discharged on post op day 10. Patient was started on palliative chemotherapy. Patient survived for 2 months on chemotherapy.

Case 4

74 year old post menopausal female patient was evaluated for bleeding per vaginum for 1 week duration.on evaluation of the patient CA 125 was 34U/ml and MRI of abdomen and pelvis revealed a right adnexal complex cyst. On staging laprotomy total abdominal hysterectomy with bilateral salphingo oopherectomy was done with bilateral pelvic lymphadenectomy and infra colic omentectomy.post operative biopsy was found the mass a poorly differentiated adenocarcinoma with immunohistochemistry cytokeratin 7 , cytokeratin 20 , CA125 , CDX-2 postive consistent with primary from pancreatico biliary region . Based on medical oncologist opinion ca

19-9 was doneand it was normal and upper gi scopy was normal and patient was put on palliative chemotherapy following which she is disease free for one year till date .

Case 5

37 year old premenopausal , nulliparous female came with complaints of lower abdominal pain for 2 months duration on clinical and radiological evaluation had an abdominopelvic mass 16 x 14x 10 cm with solid and cystic components and both ovaries not visualised and elevated CA 125(959.9 units) . staging laparotomy was done and later total abdominal hysterectomy,bilateral salphingoopherectomy pelvic node sampling and infra colic omentectomy was done . post op biopsy was consistent with poorly differentiated adeno carcinoma.. Immunohistochemistry suggested pancreatico biliary origin .. whole body PET showed no significant uptake . ca19.9 was normal.upper gi endoscopy was normal .patient was started on chemotherapy.

Analysis

Based on Pubmed search various reference are mentioned

Jiang et al reported that ovarian metastasectomy significantly lengthens overall survival in patients with primary gastric, colorectal or breast cancer.(7).In our case series two case survived for 1 year and on follow up and on palliative chemotherapy. A study conducted by Li-Chun Lu et al and Fujiwara et al also concluded that metastasectomy benefits the patient.(8)(9).

In KTs with colorectal origin there is overall poor prognosis, with median survival time reported between 19 to 29months (10) and 5-year survival rate of 9% for synchronous KT and 20% for metachronous KT . The data regarding long-term outcomes for KT from colorectal carcinoma lies mainly in small case series due to the limited incidence of ovarian metastasis. Isolated metastatic disease to the ovaries has been shown to confer a significant overall survival advantage. Mean overall survival time of 61 months with isolated ovarian disease treated with cytoreductive surgery. Other favourable prognostic indicators include postmenopausal status and unilateral ovarian involvement [11]. In our series colorectal primary case survived for one year.

For gastric origin KT, Cho et al. reported that overall survival differed significantly between patients undergoing metastasectomy plus chemotherapy and those undergoing chemotherapy alone (18.0 months vs. 8.0 months in patients with stage IV gastric cancer).in our series one case in which complete cytoreduction done is surviving for one year but patient with only ovariectomy done expired in 3 months.

Wu et al. [2015] enrolled a total of 128 patients in their study. The median age was 48 years (range, 27-65 years).In our study the median age was 58 year (range 36 to 74 years) Herein, the most common primary tumors were located in the colon (58 patients, 45.31% of the total) and stomach (41 patients, 32.03% of the total). In this research, Krukenberg tumors were more common among premenopausal (75.78%) rather than postmenopausal women. In our study three patients are in post menopausal age and two in pre menopausal age group. Moreover, 92 patients out of 128 (71.87% of the total), had metachronous ovarian metastasis. The patients of this study were given the follow¬ing treatment options: metastasectomy among 114 patients (89.06%); che¬motherapy among 89 patients (69.53%). In our series one case was synchronous and 2 cases were metachronous in presentation.The surgical treat¬ments consisted of unilateral or bilateral adnexectomy and hysterectomy with bilateral adnexectomy. Chemotherapy included cisplatin, carboplatin, oxaliplatin, docetaxel and 5-fluorouracil. Most of the patients received chemother¬apy regimens containing two or three drugs, usually for 4-6 cycles. The median OS was 16 months (ranged between 5 and 52 months).in our series three patients survived beyond 12 months. Moreover, chemotherapy combined with surgery is also a more successful option. In this research, over two-thirds of the patients received chemotherapy. Herein, the majority of chemotherapy regimens was based on platinum agent plus 5-fluorouracil, the remaining patients received docetaxel and paclitaxel and had distinct survival benefits [12]. Similar chemotherapy regimens cisplatin , taxol and 5fu are given to our cases

1)Menopausal status

Post menopausal	3
Pre menopausal	2

2) Gastrointestinal primary

Gastrointestinal primary	
Gastric origin	2
Pancreatico biliary origin	2
Colorectal origin	1

3) Synchronous vs metaschronous vsfound in post op by IHC

synchronous	1
metachronous	2
Found in post op by ihc	2

4) Survival Analysis

CASE 1	1 YEAR
CASE 2	1 YEAR
CASE 3	3 MONTHS(expired)
CASE 4	1 YEAR(expired)
CASE 5	6 months

DISCUSSION

The eponymous Krukenberg tumor was first described in 1896 by the German doctor Friedrich Krukenberg (1871-1946). Representing advanced metastatic disease, this entity clearly conveys a poor prognosis. Treatment generally consists of surgery, chemotherapy or radiotherapy but guidelines concerning treatment of choice and appropriate timing of intervention have yet to be established for most patients . The ovary has been suggested to be sanctuary organ for systemic chemotherapy owing to the poor response of KTs to 5-FU based chemotherapy and even oxaliplatin-or irinotecan-containing chemotherapy compared to extra-ovarian metastases, in part due to their voluminous, cystic and mucin-rich features [3]. Over the past decade, a number of studies have attempted to determine the prognostic factors for patients with Krukenberg tumors. For gastric cancer, metastasectomy in addition to chemotherapy was also found to improve survival compared to palliative chemotherapy alone[4]. The Same result was demonstrated in our case series. For colorectal cancers, ovarian metastases have been shown to be less responsive to chemotherapy compared to extra-ovarian sites[5]. Cytoreductive surgery (CRS) for KTs carries a significant locoregional or metastatic recurrence rate despite achieving an initial complete resection. KTs in particular have been linked to retroperitoneal lymph node and para aortic lymph node recurrence [6]. Current evidence suggests a survival benefit for patients who undergo metastasectomy, compared to those without surgery. Surgical removal of isolated ovarian metastasis without peritoneal involvement is associated with improved outcomes. Treatment with cytoreductive surgery and heated intraperitoneal chemotherapy offers promise for patients with KT and concominant peritoneal involvement.

CONCLUSION

Palliative surgery for patients with Krukenberg tumors can be performed safely in an experienced unit with acceptable complication rates. The decision to proceed with metastasectomy is influenced by several factors including the presence of symptoms, synchronous disease, and tumor response to chemotherapy, and should be made as part of a multidisciplinary team consensus. Where possible, bilateral oophorectomy should be performed to obviate the significant risk of symptomatic contralateral ovarian involvement.

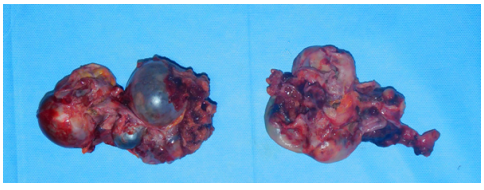

FIGURE 1 Bilateral ovarian metastasis

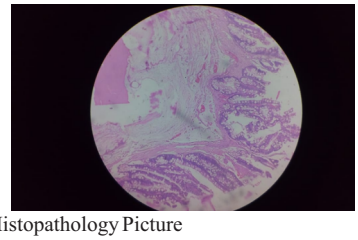

FIGURE 2 Histopathology Picture

REFERENCES

1 Al-Agha OM, Nicastri AD. An in-depth look at Krukenberg tumor: an overview. *Arch Pathol Lab Med* 2006; 130: 1725-1730 [PMID: 17076540]

2, Serov SF SR. Histologic typing of ovarian tumours. World Health Organization, Geneva, 1973.

3 S.J. Lee, J. Lee, H.Y. Lim, W.K. Kang, C.H. Choi, J.W. Lee, et al., Survival benefitfrom ovarian metastatectomy in colorectal cancer patients with ovarianmetastasis: a retrospective analysis, Cancer Chemother. Pharmacol. 66 (2010)229–235.

4. Cho JH, Lim JY, Choi AR, Choi SM, Kim JW, Choi SH, Cho JY. Comparison of Surgery Plus Chemotherapy and Palliative Chemotherapy Alone for Advanced Gastric Cancer with Krukenberg Tumor. *Cancer Res Treat* 2015; 47: 697-705 [PMID: 25648093 DOI: 10.4143/crt.2013.175]

5. Goéré D, Daveau C, Elias D, Boige V, Tomasic G, Bonnet S, Pocard M, Dromain C, Ducreux M, Lasser P, Malka D. The differential response to chemotherapy of ovarian metastases from colorectal carcinoma. *Eur J Surg Oncol* 2008; 34: 1335-1339 [PMID: 18455357 DOI: 10.1016/j.ejso.2008.03.010]

6. C. Eveno, D. Goere, P. Dartigues, C. Honore, F. Dumont, D. Tzanis, et al.,Ovarian metastasis is associated with retroperitoneal lymph node relapses inwomen treated for colorectal peritoneal carcinomatosis, Ann. Surg. Oncol. 20(2013) 491–496.

7) Jiang R, Tang J, Cheng X, Zang RY. Surgical treatment for patients with different origins of Krukenberg tumors: Outcomes and prognostic factors. Eur J Surg Oncol. 2009;35:92-7.

8) Lu LC, Shao YY, Hsu CH, HSU C, Cheng WF, Lin Y, et al. Metastasectomy of Krukenberg tumors may be associated with survival benefits in patients with metastatic gastric cancer. Anticancer research. 2012;32(8):3397-401.

9) Fujiwara A, Noura S, Ohue M, Shingai T, Yamada, T, Miyashiro I, et al. Significance of the resection of ovarian metastasis from colorectal cancers. J Surg Oncol. 2010;102:582-7.

10) J. Ojo, S. De Silva, E. Han, P. Lin, M. Wakabayashi, R. Nelson, et al., Krukenbergtumors from colorectal cancer: presentation, treatment and outcomes, Am.Surg. 77 (2011) 1381–1385.

11) Y.J. Jeung, H.J. Ok, W.G. Kim, S.H. Kim, T.H. Lee, Krukenberg tumors of gastricorigin versus colorectal origin, Obstet. Gynecol. Sci. 58 (2015) 32–39.

12) Wu F, Zhao X, Mi B, Feng L, Yuan N, Lei F et al. Clinical characteristics and prognostic analysis of Krukenberg tumor. Mol Clin Oncol. 2015;3(6):1323-1328. doi: 10.3892/mco.2015.634.