

A Clinical Analysis of 26 Cases with Non-Gynecologic Metastatic Tumors of the Ovary

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OBJECTIVE: To review 26 cases of nongynecologic metastatic ovarian tumors with respect to primary origin and their clinical features were reviewed.

STUDY DESIGN: During 60 months period, we had 274 cases of malignant ovarian tumors of which 26 (9,5 %) were nongynecologic metastatic carcinoma.

RESULTS: Mean age of the 26 cases was 46,4 years. Primary sites were stomach (42,3 %), colon (42,3 %), appendix (11,5 %) and breast (3,8 %). Tumor was demonstrated to involve both ovaries in 16 cases (61,5 %). Fourteen of the metastatic tumors were histologically determined to be Krukenberg tumor. All cases underwent laparotomy, seven cases with malign cytology had chemotherapy before operation. Prognosis was poor, 18 cases died in 3 years, 8 cases are still under treatment and follow up.

CONCLUSIONS: In cases of ovarian tumors, metastatic tumors should be considered in the differential diagnosis.

Key Words; Krukenberg tumor, Metastatic ovarian tumor

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Introduction

Metastatic ovarian tumors often mimic primary ovarian tumors and may be the first manifestation of diseases. The ovaries are frequent targets of metastasis for malignant tumors, as are the lung and liver. Although metastatic ovarian tumors are thought to account for 10-30 % of malignant ovarian tumors, it is difficult to know the precise incidence of ovarian metastasis.^{1,2} Most metastatic ovarian tumors originate from the gastrointestinal tract, breasts and gynecologic organs and are rarely diagnosed before primary treatment, therefore their prognosis is generally poor.

In this study we reviewed 26 cases of nongynecologic metastatic ovarian tumors that were surgically treated in our hospital.

Material and Method

Twenty-six patients with histopathologically confirmed nongynecologic metastatic ovarian carcinoma, who were treated between January 2002 and December 2006 at our hos-

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pital were reviewed. During that period we had 274 cases of malignant ovarian tumors which were operated and histologically diagnosed. Ovarian metastasis originated from gynecologic organs were excluded. We retrospectively examined the primary site, histologic type, clinical course and prognosis from the clinical charts.

This study was approved by our hospital's ethic committee.

Results

During a 60 months period (2002-2006) we had 26 cases of histologically confirmed metastatic ovarian tumors which accounted for 9,5% (26/274) of malignant ovarian tumors. None of the cases originated from gynecologic organs.

The mean age of the 26 cases was 46,4±12,6 years. The mean parity was 2,3±1,6. Primary sites of gynecologic metastatic tumors of the ovary were shown in Table I.

Table I. Primary sites of nongynecologic metastatic ovarian tumors

Site	No. of patients	%
Stomach	11	42,31
Colon	11	42,31
Appendix	3	11,54
Breast	1	3,84

Colon tumors included 7 rectosigmoid, 3 ascenden colon

and one caecum tumor. Tumor was demonstrated to involve both ovaries in 16 cases (61,5%). Unilateral tumors were right sided in 6 (23,1%) cases and left sided in 4 (15,4%) cases. The tumors ranged in size from 2 cm that of an enlarged ovary to 17 cm in largest dimension, with an average of 4.2 cm. The largest tumor size less than 5 cm (uni or bilateral) was diagnosed only in 7 cases. Ascites was present in 18 (69,2 %) cases and pleural effusion was present in 6 (23,1%) cases. We had no case with pregnancy associated tumor.

Fourteen (53,8%) of the metastatic tumors were histologically determined to be Krukenberg tumor with signed ring cells. The rate of Krukenberg tumors was 5,1% in 274 malign ovarian tumors. Primary sites of Krukenberg tumors was stomach in 9 cases (64,3%) colon in 3 cases (21,4%), appendix and breast in two cases (7,1% each). Ovarian metastasis was suspected preoperatively in some cases. But a definite diagnosis of the primary site was not diagnosed by gastroscopy or rectoscopy in three cases. Mammography of the metastatic ovarian tumor was absent in the case of breast carcinoma. In 7 cases with malign cytology in ascites fluid had chemotherapy before laparotomy. Other cases underwent laparotomy and proper operations were performed as ovarian carcinoma. Than the therapies were planned according to primary carcinomas.

The 5 year survival rates after resection of metastatic ovarian tumor could not be presented because of short follow up period. 18 cases died in 3 years (69,2%). 8 cases are under treatment and follow up for period of 6 months to 3 years.

Discussion

We have diagnosed 274 cases of malignant ovarian tumors postoperatively at our hospital during the past 60 months of which 26 (9,5%) cases were histologically diagnosed as nongynecologic metastatic ovarian tumors.

The incidence of metastatic ovarian tumors were reported as 4,4% to 29,4% by different authors.^{3,4} Hashimoto⁵ reported primary sites of metastatic ovarian tumors as the gastrointestinal tract 36% (stomach 23%, colon 11%), breast 14%, and gynecologic organs 40%. Horie et al⁽⁶⁾ reported the gastrointestinal tract 74% (stomach 61%, colon 13%) and breast 13% and did not include gynecologic organs. Webb et al⁷ reported that the primary sites as the gastrointestinal tract 47% (stomach 8 %, colon 29%) breast 31%, and gynecologic organs 18%. Our data are consistent with other reports showing that the most common primary site is the gastrointestinal tract. Rare case of Krukenberg tumors originating from carcinomas of gallbladder, biliary tract, pancreas, small intestine, urinary bladder, urachus have been reported.⁸ We had no case of these rare tumors. Gastric neoplasms selectively metastasize to the ovaries without involment of other tissues probably due to retrograde lymphatic spread.

Metastatic ovarian tumors are frequently called Krukenberg tumors. Woodruff and Novak defined the Krukenberg tumor as arising in the ovarian stroma and having characteristic musin filled signet ring cells.⁹ In our study Krukenberg tumors accounted for 53,8 (14/26) of metastatic ovarian tumors. Although intraoperative frozen section evaluation is useful for the diagnosis of metastatic carcinoma to the adnexa in some cases it is difficult to distinguish primary ovarian tumors from metastatic ones even by histologic examination.¹⁰ The incidence of Krukenberg tumors in Japan is rather high when compared with the incidence in Western countries. In a study including 112 Japanese patients reported the rate of stomach as the site of Krukenberg tumor was 70% .¹¹

Cancer patients generally has a poor prognosis when the primary tumor is identified after the metastasis to the ovary is discovered.¹² Most patients die within 1 or 2 year of the diagnosis of ovarian metastasis.¹³⁻¹⁴ Webb et al⁷ reported that the overall 5 year survival rate of patients with metastatic ovarian tumors was 12% (stomach 5,4%, breast 8,5%, gynecologic organs 34%). Hashimoto et al⁵ reported 5 year survival rate after resection of metastatic ovarian tumors from nongynecologic organs were 11% and 47% for gynecologic metastatic tumors. Demopoluas et al¹⁵ reported median survival times in patients with colon and breast cancer exhibiting secondary ovarian tumors as 3.0 and 1.9 years respectively.

In many cases the primary tumor is very small and can escape detection. So ovarian metastasis is diagnosed after the resection of a swollen ovary in most cases of nongynecologic malignant tumors and the prognosis of these tumors are worse. On the contrary if metastasis is limited to the ovaries, surgery may render the patient free of residual disease and the survival time may increase.¹⁶ Cheong et al¹⁷ reported that metastectomy was associated with an improved survival in patients with metachronous Krukenberg tumors from gastric cancer. Some authors suggested that absence of gross residual tumor after resection was an independent prognostic factor.^{18,19} Prophylactic oophorectomy may also have a role for eliminating the need for a repeat laparotomy.¹²

In cases of pelvic tumors metastatic ovarian tumor should always be considered in the differential diagnosis and tumorectomy should be performed as the second cytoreduction.

Nonjinekolojik Metastatik Over Tümörlü 26 Olgunun Klinik Analizi

AMAÇ: Çalışmadaki amac metastatik 26 over tümörü olgusunun klinik özellikleri ve primer köken aldıkları dokuları incelemektir.

GEREÇ ve YÖNTEM: 60 aylık süre içerisinde 26 (%9,5) tane si nonjinekolojik metastatik karsinom olan toplam 274 malign over tümörlü olgu saptandı.

BULGULAR: 26 olgunun ortalama yaşı 46,4 idi. Primer odaklar mide (% 42,3), kolon (%42,3), appendiks (%11,5), meme (% 3,8) olarak saptandı. Olguların 16 (%61,5) sında tümör her iki overde mevcuttu. 14 metastatik tümör olgusu histolojik olarak krukenberg tümörüydü. Tüm olgular laparotomiye alındı. Malign sitolojili 7 olguya operasyon öncesi kemoterapi verildi. Olguların prognozları oldukça kötüydü; 18 olgu 3 yıl içerisinde kaybedildi, 8 olgunun takip ve tedavisine halen devam edilmektedir.

SONUÇ: Over tümörlerinde metastatik tümörler ayırıcı tanıda mutlaka düşünülmelidir.

Anahtar Kelimeler: Krukenberg tümör, Metastatik over tümörü

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