MALIGNANT CHANGE IN MATURE CYSTIC TERATOMA OF OVARY : A REPORT OF NINE CASES

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SUMMARY

Nine cases of malignancies in mature cystic teratoma (MCT) are presented. All except two occured in postmenopausal women. Age was ranging from 35 to 60 years. Five had squamous cell carcinoma, three had mucinous cystadenocarcinoma and one had thyroid carcinoma in MCT. Stage was ranging from I to III. All patients had undergone initial surgery. Seven patients recieved chemotherapy. Seven patients had no evidence of disease at last follow up with followup period ranging from two to fifteen months. Four patients had extraovarian spread. In this group one died of postoperative complication, and one with residual tumour died of disease, in spite of recieving chemotherapy. From remaining two patients with extraovarian spread and without any residual disease, one received chemotherapy (BEP) and other recived radiotherapy are free of disease at last follow-up with follow-up period 15 and 57 months respectively. Radiotherapy should also be considered as adjuvant therapy for squamous cell carcinoma arising from MCT with extraovarian spread.

INTRODUCTION

Malignant change occuring in any of the mature elements of MCT has been well documented (Blackwell 1946). Probably the most common of these neoplasms is squamous cell carcinoma, incidence of the latter reported 1 to 4% (Blackwell 1946, Peterson 1956, Amerigo 1979, Bontis 1996). Other secondary malignancies reported by

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different authors are adenocarcinoma, carcinoid, thyroid carcinoma, sarcoma, (Malkasian 1963, Genadry 1979).

The current series represents a review of our experience with malignancies arising from MCT.

MATERIAL AND METHODS

A retrospective review of 9 cases of malignancies arising in MCT treated at Gujrat Cancer & Research Instiitute between 1986 to 1995 was made.

RESULTS

As shown in Table I the average age at diagnosis was 46 years (range = 35-60). Seven out of 9 patients were post menopausal. Parity was ranging from 0 to 10. Abdominal enlargement was the main complaint in all. Two had MCT and one had granulosa cell tumour in the opposite ovary. All the patients had palpable tumour ranging from 8 to 50 cm. On bisection all specimens showed sebaceous oily material mixed with hair. Stage was ranging from I-III. Five had squamous, three had mucinous cystadenocarcinoma while one had thyroid carcinoma.

TREATMENT AND SURVIVAL

All patients underwent surgery with tumour removal. Seven received chemotherapy while one received radiotherapy after surgery. Four patients had extra ovarian spread. In this group 1 had residual tumour >4 cm., she died of disease at 16 months inspite of receiving chemotherapy while other patient without any residual disease is free of disease with 15 month of follow-up period. Third patient with extra ovarian spread is free of disease after radiotherapy, with follow-up period of 57 months. Fourth patient with extra ovarian spread had died of post operative complication. Four patients, three having stage I and one in which stage was not known, are alive during last follow-up which ranges from 2 to 13 months.

DISCUSSION

Malignant transformation is an uncommon finding in MCT. The most common malignancy arising in MCT is squamous cell carcinoma ranging from 1-4% (Peterson 1956, Bontis 1996, Amerigo 1979, Blackwell 1946). In our series also we had five squamous cell carcinoma. The majority of reported cases occured in post menopausal; patients being found very exceptionally in younger age group. (Climie 1968). Only two of our patients were 35 years old and pre-menopausal. For this reason, the tissue sampling of MCT obtained from patient above 40 years of age must be exhaustive since the maignant change in some cases may not be grossly evident; they frequently present as foci of carcinoma in situ which may not be visible to the naked eye.

It has been argued that the bilateral form of MCT shows a higher index of malignancy (Eisenstandter 1921) however, this has now been disregarded (Peterson 1957). Malignancy in these cases is only present in one of the tumours: a fact which strongly suggests that an exclusively local factor determines carcinogenesis since any general influence would effect both ovaries. It has been proposed that squamous cell malignancy in MCT arises due to a continued carcinogenic effect by cystic contents themselves, especially the sebum (Fox 1965).

Three patients with stage I and two patients in whom stage was not known are alive

Table I

MALIGNANT CHANGE IN MATURE CYSTIC TERATOMA OF OVARY
CLINICOPATHOLOGIC RESULTS

Case No	Age Years	M/H	Parity	Surgery Done	Stage	Size Cm.	Adjuvant Treatment	Malignant Change	Follow-up in months
1	35	N	O	TAH+BSO+OM	I	24	CT	MU.AD.CA	NED 13
2	60	MENO	O	TAH+BSO+OM RESI.>4CM	II	14	CT	SQ CA	DOD 16
3	53	MENO	6	TAH+BSO+OM APP.	I	18	CT	SQ CA	NED 3
4	60	MENO	10	TAH+BSO	?*	8	CT	SQ CA + STRUMA OVARI I	NED 9
5	45	MENO	2	BSO+OM+ BLADDER PERI.	?*	12	RT	SQ CA	NED 57
6	50	MENO	7	TAH+BSO+OM	I	40	CT	MU.AD.CA	NED 2
7	45	MENO	1	TAH+USO+ BOW. ANASTO	III	13	-	MU.AD.CA	PO.OP.DEATH
8	35	N	0	TAH+BSO+ BOW. ANASTO.	III	50	CT	SQ CA	NED 15
9	50	MENO	5	TAH+BSO	?*	13	CT	THYROID CARCINOMA	NED 7

TAH = Total abdominal hysterecomy
BSO = Bilateral salpingo oophorectomy
USO = Unilateral salpingo oophorectomy
L = Left
R = Right
CT = Chemotherapy
RT = Radiotherapy
?* = Operated out side

SQ CA = Squamous cell carcinoma
MU. AD. CA. = Mucinious cystademocarcinoma
NED = No evidence of disease
DOD = Died of disease
PO.OP. DEATH = post operative death
MENO = Menopause
APP = Appendisectoy

without evidence of disease with follow-up period ranging from 2-13 months. They have recieved 2-6 cycles of chemotherapy. It is not decided which is the best chemotherapy for malignancy in MCT and whether to give it in stage I or not after surgery. We have given CP in 4 patients, CMF in two patients and BEP in one patient. Due to short duration of follow-up in our patients the role of chemotherapy in stage I cannot be assessed.

The prognosis of patients with MCT is correlated with presence of extracapsular extension of tumour (Pantoja 1975, Yakyshiji 1981, Peterson 1956 and Bontis 1996). Peterson found 9.6% survival rate in patients where tumour had extended beyond the ovary at time of operation (Peterson 1958). When tumour is confined to ovary 5-year survival rate is 83% (Amerigo 1979, Genadry 1979). The degree of anaplasia could be correlated with the prognosis (Scully 1970), but it seems to be less important than the extraovarian spread of tumour (Amerigo 1979, Pantoja 1975, Bontis 1996).

The treatment of MCT is surgical. If tumour has spread beyond the ovary, a more radical procedure with resection of tumour and adherent viscera is advocated, (Pantoja 1975). Four of our patients had extraovarian spread. In this group two patients received chemotherapy of which one with residual tumour >4 cm. died of disease and second without any residual tumour who recieved BEP is free of disease (follow-up period-15 months). Thr role of chemotherapy in extraovarian spread in this patient is difficult to assess due to shorter duration of follow-up. Third patient with extraovarian spread died of post operative complication. Fourth patient with extraovarian spread received radiotherapy (23GY - to whole abdomen and 25GT to whole pelvis). She is free of disease 47 months after treatment. It suggests that radiotherapy may also be tried as a adjuvant therapy in squamous cell carcinoma with extraovarian spread, because in the past most of patients with extraovarian spread had poor outcome inspite of receiving chemotherapy (Bontis 1996, Amerigo 1979, Pantoja 1975).

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