

MANAGEMENT OF MALIGNANT OVARIAN GERM CELL TUMORS

Essay

*submitted in partial fulfilment of M.S.
Degree in Radiotherapy and Nuclear Medicine*

By

Amr Lotfy Farag Mohamed

(M.B.B.Ch.)

Supervisors

615-842

A - 6

Dr. Soheir Helmy Mahmoud

*Ass. Professor of Radiation Oncology
and Nuclear Medicine-Ain Shams University*

Dr. Atef Yossef Riad

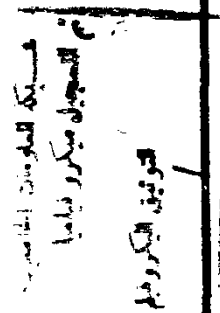
*Ass. Professor of Radiation Oncology
and Nuclear Medicine-Ain Shams University*

Dr. Soheir Sayed Ismael

*Ass. Professor of Radiation Oncology
and Nuclear Medicine-Ain Shams University*

Ain Shams University

1995



58062



TO THE MEMORY OF MY GRAND-MOTHER

TO THE MEMORY OF MY GRAND-FATHER

TO THE MEMORΨ ΟΦ ΜΨ ΓΡΑΝΔ-MOTHER

TO THE MEMORΨ ΟΦ ΜΨ ΓΡΑΝΔ-FATHER



ACKNOWLEDGEMENT

I'm greatly indebted to my **Prof. Dr. Laila Faris** head of Radiation Oncology, Nuclear Medicine Department, Faculty of Medicine. Ain Shams University, where this work was completed, for her encouragement, support and mother care.

My deepest thanks, gratitude, great respect and sincer appreciation goes to my **Prof. Dr. Sohir Helmy Mahmoud** , Ass. Prof. of Radiation Oncology, Nuclear Medicine, Ain Shams University for her, constructive guidance and utmost help which were the paramount axes in initiation and completion of this work.

I wish to express my extrem gratitude to my **Prof. Dr. Atef Yousef Riad**, Ass. Prof. of Radiation Oncology, Nuclear Medicine, Ain Shams University for his fruitfull suggestions and kind help.

I wish to express my extrem gratitude to my **Prof. Dr. Sohir Said Ismael** Ass. Prof. of Radiation Oncology, Nuclear Medicine, Ain Shams University for her helpful advise and assistance.

My gratitudes and thanks are extended to all the staff members of the department of Radiation Oncology, Nuclear Medicine, Ain Shams University for there help and co-operation.

INDEX

	Page
List of abbreviations	i
List of figures.	iii
List of Tables.	v
Introduction.	I
Aim of the subject.	II
Anatomy of the ovary.....	1
Histology of the ovary.....	5
Incidence and Epidemiology of MOGCT.....	10
Pathology of MOGCT.....	16
Clinical Picture and Diagnostic work up.....	45
Surgery staging and treatment.....	75
Chemotherapy of MOGCT.....	88
Radiation Treatment of MOGCT.....	134
Prognosis.....	156
References.....	176
Summary.....	211
Arabic Summary.	الملخص العربي

LIST OF ABBREVIATIONS

ACE	Adriamycin, Cyclophosphamide, Etoposide.
AFP	Alpha-feto protein.
ASUHS	RT and NMD Ain Shams University Hospitals. Radiotherapy and Nuclear Medicine Department.
BEP	Bleomycin, Etoposide, Cisplatin.
BOMP.	Bleomycine, oncovine, methotrexate, platinole.
CA 125	Cancer Antigen 125.
CA 19.9	Cancer Antigen 19.9.
CEA	Carcino embryonic Antigen.
CR	Compleet response.
CT	Computed Tomography.
EMA-Co	Etoposide, Methotrexate, Dactinomycin. D.
FNAB	Fine needle aspiration biopsy.
GCT	Germ cell tumors.
Gd DTPA	Gadolinum DTPA.
hCG	Human chorionic gonadotropine.
KD	Kilodalton.
LAG.	Lymphangiography.
LCA	Lense cullinaris haemagglutinin.
LDH	Lactic dehydrogenase.
MOGCT	Malignant ovarian germ cell tumors.
MRI	Magnetic Resonance Imaging.
NCI	National Cancer Institute.
NSE	Neuron specific enolase.
NUSM	Nagoya University School of Medicine.
OMP	Vinblastin, Methotrexate, Platinole.
PAV	Platinole, Adriamycin, Vinblastin.
PR	Partial response.
TAS	Trans abdominal sonography.
TPA	Tissue polypeptide Antigen.
TVS	Trans vaginal sonography.
UTMDACC	University of Texas M D. Anderson Cancer Center.
VAC	Vincristine-Actinomycine D-Cyclophosphamide.

VBP	Vinblastine, Bleomycin, Cisplatin.
VIP	Vinblastine, Ifosfamide, Cisplatin.

List of Figures

	Page
Fig. "1"	2
Fig. "2"	4
Fig. "3"	6
Fig. "4"	12
Fig. "5"	18
Fig. "6"	21
Fig. "7"	23
Fig. "8"	24
Fig. "9"	25
Fig. "10"	25
Fig. "11"	28
Fig. "12"	33
Fig. "13"	33
Fig. "14"	34
Fig. "15"	38
Fig. "16"	38
Fig. "17"	41
Fig. "18"	41
Fig. "19"	48
Fig. "20"	55
Fig. "21"	55
Fig. "22"	57
Fig. "23"	57
Fig. "24"	58
Fig. "25"	61
Fig. "26"	62
Fig. "27"	64
Fig. "28"	85
Fig. "29"	107
Fig. "30"	
Fig. "31"	

	Page
Fig. "32" The theoritical outcome of 100 patients of stage Ib to Iv and reccurent dysgerminoma.....	111
Fig. "33" Field arrangement for tretment of various stage of dysgerminoma.....	135
Fig. "34" Ipsilateral and hemipelvic field for irradiation of dysgerminoma.....	
Fig. "35" Pelvic boost in abdominopelvic irradiation therapy in ovarian tumors.....	142
Fig. "36" The mega voltage moving-strip technique.....	143
Fig. "37" Open field Abdomino pelvic technique.....	146
Fig. "38" Martenz Technique.....	148

List of tables

	page
Table"1"	Relative frequencies of different types of MOGCT
	10
Table"2"	Relative frequencies of MoGcT at ASUHS. RT and NMD
	12
Table"3"	The WHO classification of OGCT.....
	17
Table"4"	FIGO stage grouping of primary ovarian neoplasm....
	77
Table"5"	VAC regimen.....
	91
Table"6"	Sustained remission rate with VAC chemotherapy in patients with stage I germ cell tumors.....
	91
Table "7"	Sustained remission rate with VAC chemotherapy in patients with Stage II-IV germ cell tumors.....
	92
Table"8"	VBP Regimen.....
	94
Table"9"	Sustained remission rate with VBP chemotherapy in patients with stage I germ cell tumors.....
	96
Table"10"	Sustained remission rate with VBP chemotherapy in patients with stage II-IV germ cell tumors.....
	96
Table"11"	Studies of the chemotherapy of advanced germ cell tumors.....
	97
Table"12"	PEP or PE regimen.....
	100
Table"13"	Anti emetic regimen.....
	101
Table"14"	Criteria for conservative management of pure dysgerminoma.....
	105
Table"15"	VIP regimen.....
	116
Table"16"	POMP-ACE regimen.....
	118
Table"17"	EMA-CO regimen.....
	118
Table"18"	Summary of late Bowel complications of the abdomino-pelvic irradiation.....
	153
Table"19"	Five year survival of MOGCT according to stage...
	157
Table"20"	Comparison of grade and stage with survival in immature teratoma.....
	160
Table"21"	Survival by grade of stage I immature teratoma.....
	161
Table"22"	Relation of DNA ploidy to stage of MOGCT.....
	170
Table"23"	Relation of DNA ploidy to size of MOCGT.....
	171
Table"24"	The outcome of DNA ploidy.....
	172

****INTRODUCTION****

INTRODUCTION

Ovarian germ cell tumors (OGCT) are a heterogeneous and complex group of disease. Study of these fascinating neoplasms is hampered by their complexity and rarity. However, these neoplasms have importance beyond their numerical incidence, because they typically occur in young women and improvement of treatment will enable a substantial majority of these patients not only to survive their disease but, also to preserve their fertility.

Among ovarian neoplasms many germ cell tumors possess the unique property of producing biologic markers which can be detected in the serum. The development of specific and sensitive radioimmuno assay techniques for measuring hCG and AFP has led to dramatic improvements in monitoring of patients with these tumors, thus, helping the diagnosis of these tumors and more importantly, may be used in monitoring the response to treatment as well as in detecting subclinical disease recurrence.

AIM OF THE
SUBJECT

AIM OF THE SUBJECT

This essay's aim is to review the most recent publications in the subject of management of ovarian malignant germ cell tumors (OMGCT), and to evaluate the impact of the recent advances in early diagnosis and management on both survival and fertility in young patients who got OMGCT.

**ANATOMY &
*HISTOLOGY**