



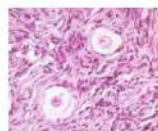
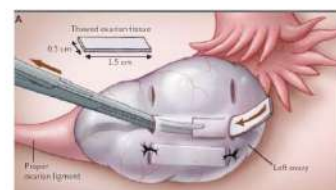
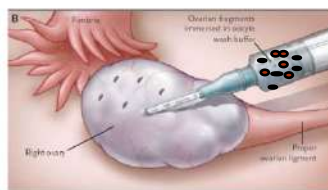
TRANSPLANTATION OF OVARIAN TISSUE AT SHEBA MEDICAL CENTER

Dror Meirou



First report- Transplantation of Ovarian Tissue

- Documented Ovarian failure post bone marrow transplantation
- Tight monitoring + treatment



Follicles from thawed ovarian tissue

The NEW ENGLAND JOURNAL of MEDICINE
Meirou, Dor et al
2005



To practice Ovarian tissue cryo / Transplantation procedure we should first present:

Efficacy

- Patients characteristics
- Tissue Preparation
- Operative technique
- Monitoring
- Infertility treatment

Safety

- Diagnosis
- Pre-harvesting status
- Tissue evaluation
- Different modalities
- Patient monitoring

Advantage: One stop shop

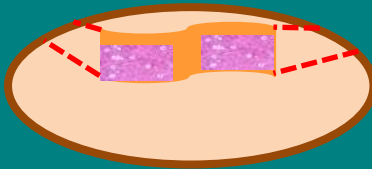
Factors affecting procedure success

Tissue at harvesting

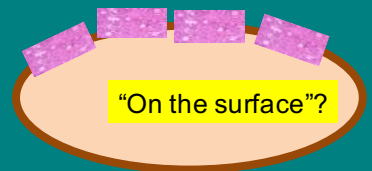
- Ovarian reserve
 - Age - <40
 - Pre-cryo Chemo - >40%
- Graft dimensions
 - Prefer large
 - small - "Burn-out"
- Slow Freezing



Large cortical strips



Under atrophic cortex?



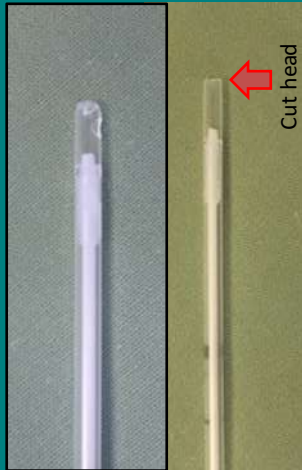
"On the surface"?



Small cortical fragments

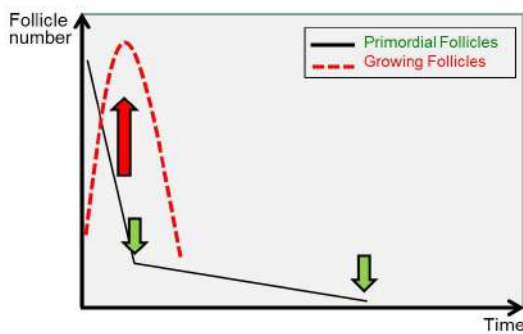


Small cortical fragments - Pippel



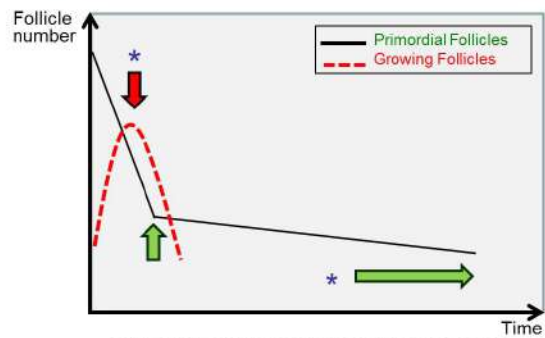
Size determines follicle reserve

A. Ovarian tissue transplantation with increased activation



Gavis Z. Spector I. et al JARG 2018

B. Ovarian tissue transplantation with reduced activation



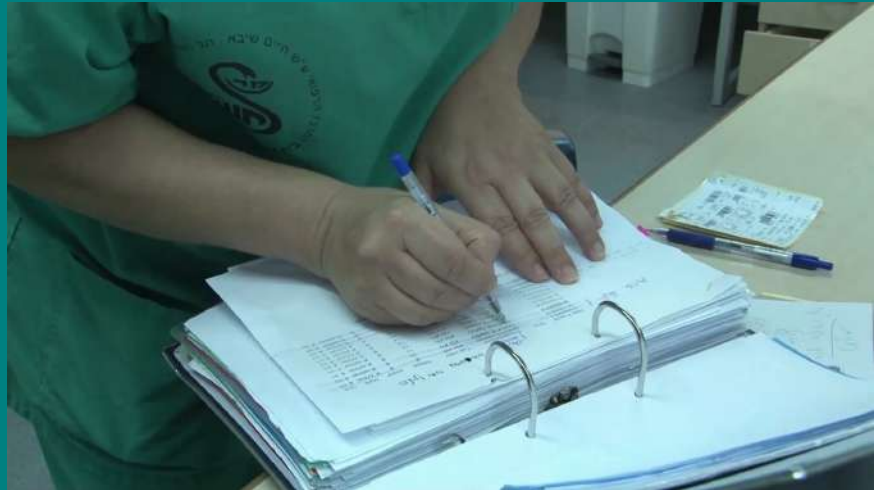
* Reducing follicle activation impacts on the potential lifespan of the graft

**Small cortical fragments
"Burn Out"**

Large cortical strips

Transplantation: Points of importance:

- Short warm period
- Number of strips
- Ovaries 1st option
- Tunnel, pocket



In Vitro Fertilization



- Natural Modified Cycle
- Conventional stimulation

According with endocrine function and sonography

Transplantation ovarian tissue results - Sheba

Women age<35 cryopreserved	Women Transplanted	Endocrine function	Women who conceived (At least once)
	21+1 (recently)	21 (100%)	10 (47.6%)

Age < 35				
Total No of pregnancies	Total deliveries	Total abortions	IVF pregnancies	Spontaneous pregnancies
18+1 ongoing	12	6	11	7+1 ongoing

Transplantation results of suspected low reserve - Sheba

Age effect

Age > 35 (37-39)					
Women Transplanted	Total pregnancies	Total deliveries	Total abortions	IVF pregnancies	Spontaneous pregnancies
5	1	1	0	1	0

Chemotherapy prior to tissue harvesting

Women with pre harvesting chemotherapy	Women who conceived (At least once)	Total deliveries	Total abortions	IVF pregnancies	Spontaneous pregnancies
13	7 (54%)	10	5	8	7+1 ongoing

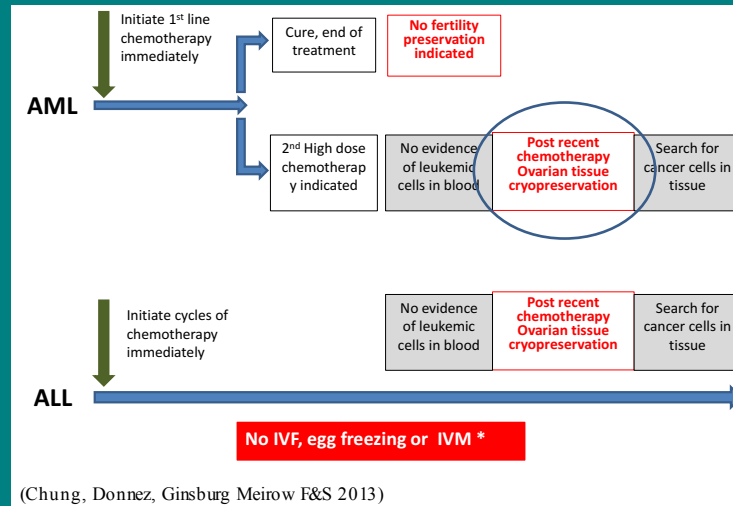
The power of ovarian tissue cryopreservation /Transplantation technology

- Prolong Endocrine function
- Effective infertility treatments
- Prolong fertility
- Repeated pregnancies

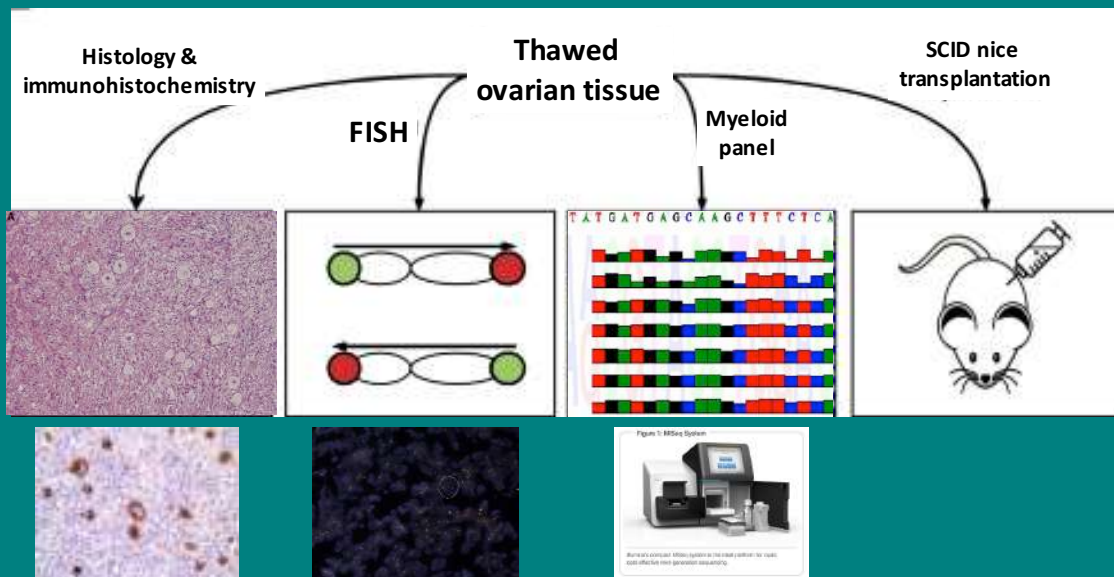


Safety consideration S

Leukemia patients considered high risk Tissue harvesting during remission



Methods used to improve the safety of ovarian tissue transplantation in high risk patients - Leukemia



ARTICLE IN PRESS

ORIGINAL ARTICLE: FERTILITY PRESERVATION

First delivery in a leukemia survivor after transplantation of cryopreserved ovarian tissue, evaluated for leukemia cells contamination

Morari Shapira, M.D.,^{a,b} Hila Raanan, M.D.,^{a,b} Iris Banihadi, M.D.,^c Ninette Amariglio, M.D., Ph.D.,^d Sarah Derech-Haim, M.Sc.,^a Meital Nager Mariani, Ph.D.,^a Eyal Schiff, M.D.,^a Raouf Orvietz, M.D.,^a and Dor Meirou, M.D.^{a,2}

^a Fertility Preservation, ^b IVF Unit, Division of Obstetrics and Gynecology, ^c Department of Pathology, and ^d Cancer Research Center, Sheba Medical Center, Sackler School of Medicine, Tel-Aviv University, Tel-Aviv, Israel



Fertility Sterility Nov 2017

World results



Single center
Closed experiment
Tight monitoring

Israel Ministry of health decision
OTCP + Transplantation
are no longer experimental procedures

Fertility preservation Center and Research laboratory

Dr. Rannani Hila
Prof. Jehoshua Dor
Prof. Ariel Hourwitz
Dr. Shapiro Moran
Dr. Brenghausen Masha
Prof. Orvieto Raoul
Prof. Eyal Schiff
Dafna Manela Chief Nurse
IVF team physicians and lab

Dr. Roness Hadassa
Dr. Spector Itai
Derech Haim Sanaz MSc
Oren Kashi
Dr. Gavish Zohar
Dr. Kalich-Philosoph Lital
Dr. Pe'er Gil

Sheba Research Centers

Prof. Gidi Rechavi
Prof. Amariglio Ninet
Dr. Hannah Kanety

Sheba Pathology institute

Dr. Sarit Aviel-Ronen
Prof. Iris Barshack

