بسم الله الرحمن الرحيم

شبكة المعلومات الجامعية

التوثيق الالكتروني والميكروفيلم

شبكة المعلومات الجامعية

جامعة عين شمس

التوثيق الالكتروني والميكروفيلم

قسم

نقسم بالله العظيم أن المادة التي تم توثيقها وتسجيلها

علي هذه الأفلام قد أعدت دون أية تغيرات

يجب أن

تحفظ هذه الأفلام بعيدا عن الغبار

في درجة حرارة من ١٥-٢٥ مئوية ورطوبة نسبية من ٢٠-٤٠%

To be Kept away from Dust in Dry Cool place of 15-25- c and relative humidity 20-40%

بعض الوثائـــــــق الاصليـــــة تالفـــة

بالرسالة صفحات لم ترد بالاصل

"Preliminary study of maternal blood lead level in cases of abortion"

THESIS

Submitted to the Faculty of Medicine
University of Alexandria
In Partial Fulfillment of The Requirement of the Master degree

IN

Obstetrics and Gynaecology

By

Ahmed Mostafa Fouad

MBBCH (Alex)
Faculty of Medicine
University of Alexandria
2002

SUPERVISORS

Prof. Dr. Mohamed Ramadan

Professor of Gynaecol & Obst.

Faculty of Medicine

University of Alexandria

Prof. Dr. Naima A. Sherif

Professor of Forensic Medicine and Toxicology

Faculty of Medicine

Alexandria University

Prof. Dr. Yousri Khamis

Professor of Gynaecol & Obst.

Faculty of Medicine

University of Alexandria

Co -Worker

Dr. Ehsan Mohamed Hasan

Assistant Professor of Medical Biochemistry

Faculty of Medicine

Alexandria University

ACKNOWLEDGMEN

At first great thanks to ALLAH, his support was the main factor in completing this work.

I 'm very grateful to Prof. **Dr. Mohamed Ramadan** *Prof. of gynecology and obstetric, Faculty of Medicine. Alexandria University, for his unlimited support, supervision and continuous encouragement during all phases of this work.*

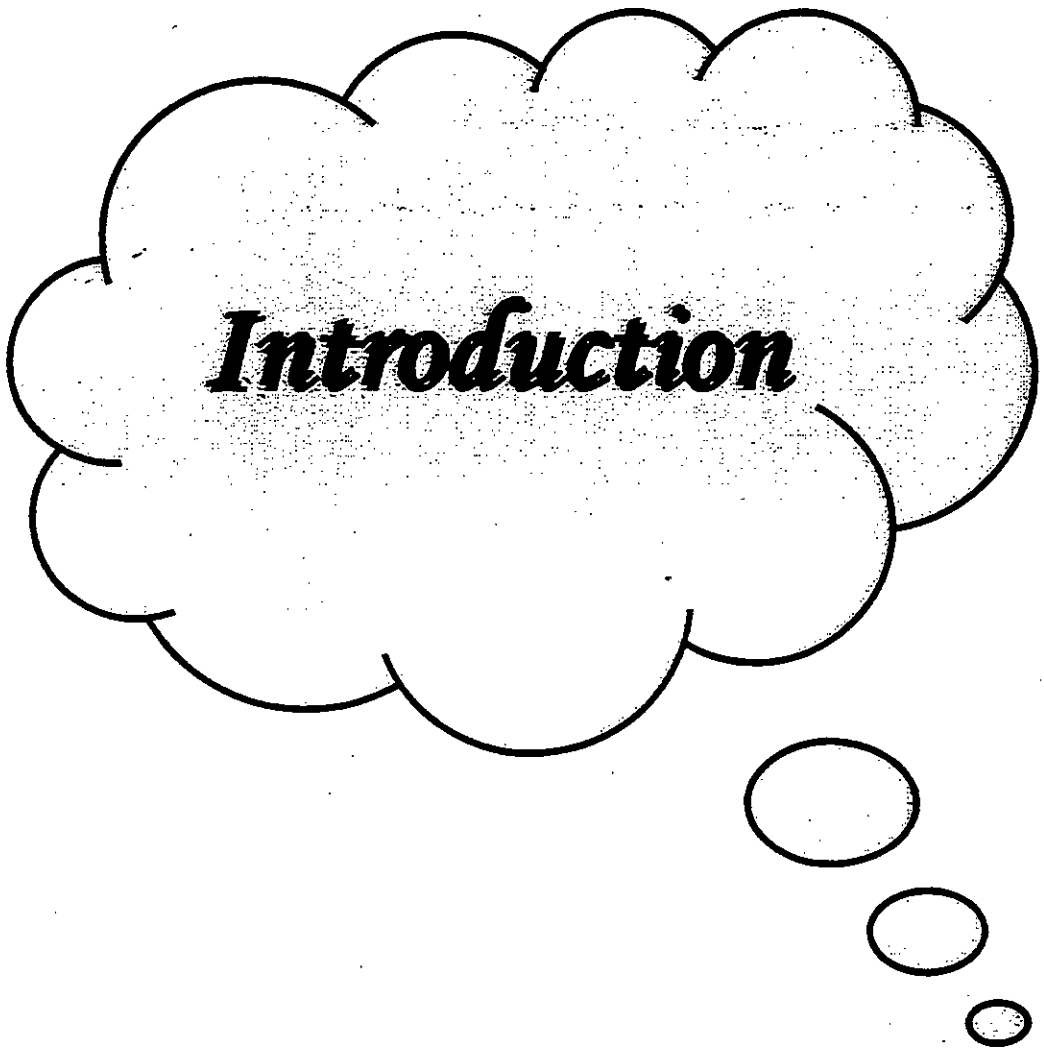
My deep thanks to **Prof. Dr. Yousri Khamis** *Prof. of gynecology and obstetric, Faculty of Medicine, Alexandria University for his continuous help, generous efforts and valuable guidance that helping me great fully in completing this work.*

My great appreciation to **Prof. Dr. Naima A. Sherif**

Professor of Forensic Medicine and Toxicology Faculty of Medicine, Alexandria University, for her kind help and sincere advice, in the Biochemical work in this thesis

I could never forget the unlimited help and constant encouragement and co operation TO Dr. **Ehsan Mohamed Hasan** *Assistant Professor of Medical Biochemistry Faculty of Medicine, Alexandria University.*

CONTENTS


Introduction

ABORTION

Definition:

The definition of abortion is the termination or interruption of pregnancy by any means before the fetus is sufficiently developed to survive. In the United States this definition is confined to the termination of pregnancy before 20 weeks based on the first day of the last menstrual period. Another commonly used definition is the delivery of a fetus-neonate that weighs less than 500g. [1]

Incidence:

About 15-20 % of known pregnancies terminate in abortion. Using serial human chorionic gonadotropin (hCG) measurements to detect early subclinical pregnancy losses, the percentage increases to 30%.[2] About 80% of spontaneous pregnancy losses occur in the first trimester and are called early abortions [3] , the rest occur between the thirteenth and twenty-fourth week and are called late abortions. The risk of spontaneous abortion for a woman with no history of reproductive wastage is about 15 %[4] .The study of Poland et al (1977) indicates that the likelihood of a repeated abortion after a first spontaneous abortion for a woman with no living children is 19%. If there is a history of two consecutive spontaneous abortions, the risk increase to 35% and if the history is of three consecutive abortions, the likelihood of a repeated abortion is 47 %. [5]

Early pregnancy losses could be separated into 2 groups:

1. Blighted ova:

Those early pregnancy losses in which fetal development is not observed with ultrasound and fetal tissue is absent on histological

examination of the products of conception and this is of genetic origin.
The abnormal zygote found in a blighted ovum results from an error in maternal or paternal meiosis I or II, from superfecundation of an egg by two spermatozoids, or from a chromosome division in the absence of cytoplasmic divisions. [4]

2. Early fetal demise

Those early pregnancy losses in which fetal development is clearly observed by ultrasound and fetal tissue is found on histological examination. This early interruption of fetal life is a complex phenomenon with multiple etiologies [4].

Mechanism of abortion: [6]

The cause of abortion is the separation of the ovum by minute haemorrhage in the decidua. The altered uterine environment stimulates the onset of uterine contractions, and the process of abortion begins. Bleeding starts in the choriodecidual space separating the anchoring chorionic villi from their attachment to the decidua. When the bleeding is not excessive and the pains are minimal, the condition may be reversible and the pregnancy may continue (threatened abortion) .If the process of abortion continues, The cervix dilates and the ovum or fetus passes out through it and then passes down the vagina and vulva (inevitable Abortion) . Between the 8th and 14th week, the mechanism may be as described or, more commonly, the membranes rupture expelling the defective fetus, but the placenta is only partially separated and protrudes through the cervix into the vagina, or remains attached to the uterine wall (incomplete abortion). After the 14th week, the fetus is usually expelled, followed by the placenta, (complete abortion). [6]

Pathology of abortion:

Hemorrhage into the decidua basalis and necrotic changes in the tissues adjacent to the bleeding usually accompany abortion. The ovum becomes detached, and this stimulates uterine contractions that result in expulsion. When the sac is opened, fluid is commonly found surrounding a small macerated fetus, or alternatively there may be no visible fetus in the sac, the so-called blighted ovum.

Blood or carnuous mole is an ovum that is surrounded by a capsule of clotted blood. The capsule is of varying thickness, with degenerated chorionic villi scattered through it. The small, fluid-containing cavity within appears compressed and distorted by thick wall of old blood clot. In later abortions, several outcomes are possible. The retained fetus may undergo maceration. The bones of the skull collapse and the abdomen becomes distended with blood-stained fluid. The skin softens and peels off in utero or at the slightest touch, leaving behind the corium. Internal organs degenerate and undergo necrosis. Amniotic fluid may be absorbed when the fetus becomes compressed upon itself and desiccated to form a fetus compressus. Occasionally, the fetus eventually becomes so dry and compressed that is resembles parchment, so-called fetus papyraceous. [7]

Types of abortion:

Abortion can be classified into two main groups either spontaneous abortion or induced abortion.

A. **Spontaneous abortion**

When abortion occurs without medical or mechanical means to empty the uterus, it is referred to as spontaneous. It is convenient to consider the

clinical aspect of spontaneous abortion under five subgroups: threatened, inevitable, incomplete, missed, and recurrent abortion. [7]

1. ***Threatened abortion***:

Is bleeding from the uterus prior to twenty weeks of gestation with the cervix closed and the fetus is alive.[8] It is an extremely commonplace occurrence, and one out of four or five women has vaginal spotting or heavier bleeding during early gestation. Of those women who bleed in early pregnancy, approximately half will abort. The bleeding of threatened abortion frequently is slight, but it may persist for days or weeks. Unfortunately, an increased risk of suboptimal pregnancy outcome in the form of preterm delivery, low birth weight, and perinatal death persists. Importantly, the risk of a malformed infant does not appear to be increased.[9]

Bleeding usually begins first and cramping abdominal pain follows a few hours to several days later. The pain of abortion may be anterior and clearly rhythmic; it may be persistent low backache, associated with a feeling of pelvic pressure; or it may be dull midline suprapubic discomfort. Whichever form the pain takes, prognosis for pregnancy continuation in the presence of pain and bleeding is poor. [8]

Occasionally, slight bleeding may persist for weeks. It then becomes essential to decide whether there is any possibility of continuation of pregnancy. Vaginal sonography, serial serum quantitative chrionic gonadotropin (hCG) levels, and serum progesterone values measured alone or in various combinations, have proven helpful in ascertaining if a live

intrauterine pregnancy is present. Fossum and associates (1988) reported that a fetal sac can usually be seen using vaginal sonography between 33 and 35 days from the last menstrual period (Table I). This was associated with chrionic gonadotropin level of about 1000 mIU/mL. Thus if a gestational sac can be seen and serum hCG is less than 1000 mIU/mL, the gestation is not likely to survive. If any doubt exists, however, serial gonadotropin levels should be measured. [10]

TABLE (I) Temporal Values for Gestational Age, serum β-hCG levels, and Vaginal Ultrasound findings in normal pregnancy.

Days from last menses.	β-hCG (mIU/mL)	Vaginal Ultrasonography
34.8 ± 2.2 [a]	914 ± 106	Fetal sac
40.3 ± 3.4 [b]	3783 ± 683	Fetal pole
46.9 ± 6.0 [b]	13.178 ± 2898 [b]	Fetal heart activity

[a] ± standard error of the mean.

[b] $p < 0.05$ when compared with fetal sac.

Modified from Fossum and colleagues (1988). [10]

Al-Sebai and associates (1995) reported that a single progesterone measurement had an 88 percent sensitivity and specificity in predicting a live versus dead intrauterine fetus or a tubal pregnancy. [11] Stovall and associates (1992) reported that only about 1 percent of abnormal pregnancies (spontaneous incomplete abortions and ectopic pregnancies) have serum progesterone level of 25 ng/mL or greater. A serum progesterone level of