# Clinical and Ultrasound Diagnosis and Outcome of Bleeding in Early Pregnancy

**Thesis**

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**By**

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## ABSTRACT

Two out of 10 pregnant women have vaginal bleeding in the first trimester, of these, 50% will go on to have normal pregnancies while the other 50% will have a pregnancy loss. The presence of heavy vaginal bleeding (defined as heavier than a menstrual period), abdominal pain, fever, or passage of tissue requires immediate evaluation. It is important to make the diagnosis, because ectopic pregnancy is a leading cause of maternal mortality.

Differential diagnoses of conditions that are associated with bleeding in early pregnancy can be broadly considered under three headings: intrauterine pregnancy, ectopic pregnancy and gestational trophoblastic disease.



**KEY WORDS:**

Development of Pregnnacy by Transvaginal Ultrasound, Ultrasound of Normal Early Pregnancy, Ultrasound Evaluation of Abnormal Early Pregnancy.

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Abbreviations:

| | |
|---|---|
| AC | Abdominal Circumference |
| BPD | Biparietal diameter |
| BPP | Biophysical profile |
| EFW | Expected Fetal Weight |
| FL | Femur length |
| IUGR | Intra uterine growth retardation |
| ILGF | Insulin like growth factor |
| LGA | Large for gestational age |
| LMP | Last menstrual period |
| SGA | Small for gestational age |
| UCP | Uncoupled protein |
| VDAC | voltage-dependent anion channel |

# Introduction

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Knowledge of the weight of the fetus in-utero is important for the obstetrician to decide the mode of delivery **(Bhandary et al ;2004)**. Suspected macrosomia may, for example, be an indication for Cesarean delivery in women with gestational diabetes or breech presentation **(Conway et al, 2002, Goffinet et al; 2006).** On the other hand, small for gestational age fetuses must be identified in utero if obstetricians are to provide close monitoring and plan their delivery to reduce perinatal risks **(Williams et al; 1982, Resnik et al; 2002).**

The traditional techniques for antenatal estimation of fetal weight (EFW) is by using a number of parameters (bi-parietal diameter , femur length and abdominal circumference ).this antenatal estimation of fetal weight is used in detecting any growth abnormalities, thus help in choosing the mode of delivery **(Hadlock et al; 1985).**

Ultrasound derived fetal weight estimates alone are not sufficient grounds for deciding the route of delivery. To determine the mode of delivery, the clinical fetal weight estimate and clinical assessment of pelvic capacity should be added to the sonographic fetal weight estimate, with consideration of the risk factors for macrosomia **(Ben-Haroush et al; 2004).**

A number of researchers have attempted to use sonographically measured soft tissue thickness to predict fetal weight. Studies showed that measurements the subcutaneous tissue thickness at the mid-calf, mid-thigh, and abdominal levels can predict fetal weight **(Hill et al; 1992).**

Subcutaneous fat, which can be evaluated by means of skin fold thickness, can be easily seen antenatally with ultrasound. On a transverse section of the fetal abdomen, it appears as a well-delineated echogenic line **( Petrikovsky et al; 1999).**

# Aim Of The Work

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This study was done to assess the relation between fetal abdominal subcutaneous tissue thickness and birth weight.

# Review of literature

# FETAL GROWTH

Definition : Prenatal or antenatal development is the process in which an embryo or fetus gestates during pregnancy, from fertilization until birth. Often, the terms fetal development, or embryology are used in a similar sense **(Wagner et al; 2004).**

After fertilization the embryogenesis starts. When embryogenesis finishes by the end of the $10^{th}$ week of gestation the precursors of all the major organs of the body have been created. Therefore, the following period, the fetal period, is described both topically on one hand, i.e. by organ, and strictly chronologically on the other, by a list of major occurrences by weeks of gestational age **(Mazza et al; 2000).**

The term embryo is used to describe the developing offspring during the first 8 weeks following conception, and the term fetus is used from about 2 months of development until birth **(Mazza et al; 2000).**

Pregnancy is considered "at term" when gestation attains 37 complete weeks but is less than 42 (between 259 and 294 days since LMP). Events before completion of 37 weeks (259 days) are considered preterm. From week 42 (294 days) events are considered postterm when pregnancy exceeds 42 weeks (294 days), the risk of complications for woman and fetus increases significantly. As such,

obstetricians usually prefer to induce labour, in an uncomplicated pregnancy, at some stage between 41 and 42 weeks **(Lama et al; 2006).**

Deviations from normal fetal growth and weight contribute to morbidity and mortality in the perinatal period **(Edouard et al; 1980).**

Many researchers have been devoted to the diagnosis and management of growth disturbances. The infants with growth disturbances have both short-term and long-term sequelae reported as an increase adult risk of insulin resistance, hypertension, type II diabetes and cardiovascular disease in growth-restricted fetuses **(Barker et al*; 1998)***.

One of the unique characteristics of human development includes the growth of a very large brain and the deposition of a very large amount of fat tissue **(Hofman et al; 1993).**As fat supplies over half of the calories required by the fetus from 27 to 40 weeks' gestation and approximately 90% of the caloric requirement in the last few weeks of pregnancy **(Sparks et al; 1980).**

In earlier gestation (e.g. 26–30 weeks) there are few fat deposits present even in normally grown preterm infants. This makes recognition of intra uterine growth retardation (IUGR) by fat assessment more difficult **(Ogata et al; 1989)**. Utilizing serial