

**Reproductive Care Program of Nova Scotia  
Guideline for Investigating an Intrauterine Death  
September, 1996**

It is estimated that 12 to 15 percent of all pregnancies will end in clinical (many more are subclinical) spontaneous abortion. The vast majority of these losses will occur in the first trimester. In some cases fetal demise will occur at an early gestation but remain undiagnosed until the second trimester (missed abortion). The incidence of fetal demise actually occurring beyond 10 weeks decreases dramatically and by 20 weeks is less than 1 percent (Curry, 1992).

The approach to pregnancy loss depends upon the gestational age at the time of demise. Unless the patient meets the criteria for "habitual abortion," investigations after intrauterine death prior to 15 weeks (even if it is not diagnosed until a later gestation) are not likely to be helpful and are normally not necessary. Additionally, fetal demise occurring prior to 15 weeks is often managed with a dilatation and evacuation, which limits the value of a fetal/placental pathologic review.

Fetal demise occurring at or beyond 15 weeks' gestation is a less common event, and in this circumstance, an effort should be made to determine the cause of pregnancy loss. Only then can the likelihood of a recurrence and the possibility of prevention be ascertained. The management of a fetal demise that occurs after 15 weeks' gestation often involves an induction of labour with a prostaglandin analogue. This allows for preservation of fetal and placental tissue for subsequent pathology review.

**The following investigations should be considered in all cases of intrauterine death that occur at or greater than 15 weeks' gestation:**

**1. Ultrasound:**

- When fetal death is suspected, an ultrasound examination should be undertaken to confirm the diagnosis and to determine gestation and fetal size. Further management will depend on these findings.
- Additionally, it is important that there is a sonographic inspection of the placenta and fetus for malformations or evidence of fetal growth deficiency.

**2. Thorough history and physical examination:**

- A thorough maternal medical history (past and current) should be obtained and the physical examination repeated in search of unsuspected pre-existing or acquired systemic illness. The history should also review lifestyle issues that may be relevant to pregnancy loss.

**3. Maternal Laboratory Tests:**

- Complete Blood Count (CBC) including platelets
- Kleihauer (regardless of Rh Status)
- Indirect Coombs (antibody screen)
- Fasting blood sugar or Hemoglobin A1C or Glycated Hemoglobin
- Prothrombin time (PT)
- Partial Thromboplastin Time (PTT)

- Lupus Anticoagulant (if PTT is abnormal)
- Anticardiolipin Antibody
- Antinuclear Antibody (ANA)
- Anti-DNA

**4. Pathological Examination:**

- Post-mortem examination of the fetus
- Placental examination

**The following additional investigations should be considered if the initial routine investigations are not likely to reveal a complete explanation of cause:**

**1. Karyotype:**

- With fetal demise, cell cultures for chromosome analysis often fail to grow, and in this setting, the placenta may more likely yield a successful culture. Additionally, in an effort to ensure that a karyotype is obtained and that culture failure does not occur, consideration should be given to prenatal testing. Amniocentesis would normally be the procedure of choice, and should be considered if delivery is not likely to occur within one week and there is evidence of malformations on ultrasound.

**2. Additional maternal laboratory tests - Serology screening targeted for an infectious etiology:**

- CMV, toxoplasmosis, and human parvovirus should be considered with the understanding that many individuals will be immune from pre-pregnancy infections. To determine if there is a new, recent antenatal infection, serology can be sent for IgM and IgG (toxoplasmosis and parvovirus). CMV can be identified from two specimens obtained two weeks apart and sent for CF (Complement Fixation).
- If not previously determined, hepatitis, syphilis and rubella immunity should also be assessed.
- A primary antenatal herpes infection can also be a significant pathogen and if the clinical history supports this suspicion, serology can be sent to rule this out.

**3. Fetal/placental swabs for culture and sensitivity (C&S) with possible consideration of Listeria**

**4. Fetal/infant investigations:**

- Fetogram - routine total body anterior and posterior skeletal radiographs can give valuable information about ossification centres to help date the gestation. These investigations can also reveal unsuspected abnormalities.
- Microbiologic studies including fetal swabs and if possible, blood for C&S.
- Coombs, if cord blood is available

While investigating the possible causes for a fetal loss, one must also ensure that the patient and her family have appropriate psychosocial support. Formal counselling services by allied health

workers may be offered, and the value of encouragement and involvement of family and friends should be recognized. Contact with support groups should be facilitated if parents choose this option. Many parents may want to see, hold and name their baby, and receive photographs and footprints, even when the fetus is delivered at a very early gestation. Books of remembrance and memorabilia, such as locks of hair and identification bracelets may help a family accept the reality of their loss. Parents may wish a formal ceremony for disposal of the body through a funeral, cremation or a memorial service. Their wishes should be respected and accommodated.

*Approved RCP Action Group, September 26, 1996*

## **References**

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