Learn simply

Intrauterine Fetal Demise

Passion profession same

Intrauterine fetal demise (IUFD)[1]

- Take a detailed history and perform a physical examination
- Ask about risk factors for IUFD[2]

Confirm the diagnosis of IUFD[3]

Twins

One fetus alive[4]

- √ CBC, T&S, coagulation profile
- Consider neonatology, MFM and anesthesia consults
- Confirm gestational age
- Antenatal corticosteroids, if indicated

Consider expectant management[5]

- Regular fetal surveillance[6]

No fetuses alive

Manage as for a singleton

Singleton

≥3 weeks since IUFD[7] or evidence of DIC

Consider immediate delivery

<3 weeks since IUFD[7] and no evidence of DIC

- **√ CBC, T&S, coagulation profile**
- Consider neonatology, MFM and anesthesia consults
- Confirm gestational age

Continue expectant management

- Regular fetal surveillance[6]

- **Deliver immediately for non-reassuring fetal testing of a viable twin**
- **Consider delivery ≥35 weeks with/without confirmation of fetal lung maturity for a viable twin**
- Reserve cesarean delivery for usual obstetric indications[8]

After delivery, attempt to determine the cause of the IUFD[9]

1. Intrauterine fetal demise (IUFD) or stillbirth is defined as fetal demise after 20 weeks' gestation and prior to delivery.

2. Risk factors for IUFD include
    - extremes of maternal age,
    - multiple pregnancy,
    - post-term pregnancy,
    - male fetus,
    - fetal macrosomia,
    - and maternal disease such as
        - pregestational diabetes,
        - systemic lupus erythematosus (SLE), and
        - preeclampsia.

3. The inability to identify fetal heart tones or the absence of uterine growth may suggest the diagnosis.
4. Ultrasound is the gold standard to confirm an IUFD by documenting the absence of fetal cardiac activity.
5. Other sonographic findings in later pregnancy may include
    - scalp edema,
    - overlapping skull sutures,
    - and fetal maceration.

Intrauterine Fetal Demise

1. The death of one twin confers an increased risk of major morbidity onto the surviving twin,
    - including IUFD,
    - neurologic injury,
    - multiorgan system failure,
    - thrombosis,
    - distal limb necrosis,
    - placental abruption, and
    - premature labor.
2. Prognosis for the surviving twin depends on the
    - cause of death,
    - gestational age,
    - chorionicity, and
    - time interval between death of the first twin and delivery of the second.
3. Dizygous twin pregnancies do not share a circulation, and death of one twin may have little impact on the surviving twin.
4. The dead twin may be resorbed completely or become compressed and incorporated into the fetal membranes (fetus papyraceus).
5. Disseminated intravascular coagulopathy (DIC) in the surviving fetus and/or mother is rare.
6. On the other hand, some degree of shared circulation can be demonstrated in many monozygous twin pregnancies, and the death of one fetus in this setting carries an increased risk of death of its co-twin due to profound hypotension and/or transfer of thromboplastic proteins from the dead fetus to the live fetus.
7. If it survives, the co-twin has a 40% risk of developing neurologic injury (multicystic encephalomalacia), which may not be prevented by immediate delivery.
8. Therefore, management of a surviving co-twin depends primarily on chorionicity and gestational age.jaundice.

1. Fetal surveillance should be instituted, including daily kickcharts and weekly or twice weekly non-stress testing/ biophysical profile.
2. Approximately 20–25% of women who retain a dead singleton fetus for longer than 3 weeks will develop DIC due to excessive consumption of clotting factors. Therefore, delivery should be affected within this time period.
3. Every effort should be made to avoid cesarean delivery in the setting of IUFD.
4. As such, expectant management is often recommended. Latency (the period from fetal demise to delivery) varies, depending on the underlying cause and gestational age.
5. In general, the earlier the gestational age, the longer the latency period.
6. Overall, >90% of women will go into spontaneous labor within 2 weeks of a singleton fetal death. However, many women find the prospect of carrying a dead fetus distressing and want the pregnancy terminated as soon as possible.
7. Management options include surgical dilatation and evacuation or induction of labor with cervical ripening, if indicated.

1. Causes of IUFD can be identified in only around 50% of cases.
2. Pathologic examination of the fetus (autopsy) and placenta/fetal membranes is the single most useful test to identify a cause for the IUFD.
3. Fetal karyotyping (with or without chromosomal microarray) should be considered in all cases of fetal death to identify chromosomal abnormalities, particularly in cases with documented fetal structural abnormalities. Approximately 5–10% of stillborn fetuses have an abnormal karyotype.
4. Amniocentesis may be recommended to salvage viable amniocytes for cytogenetic analysis prior to delivery. Trafficking of fetal cells into the maternal circulation occurs in all pregnancies, but is usually minimal (<0.1 mL total volume).
5. In rare instances, fetal-maternal hemorrhage may be massive, leading to fetal demise.

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3. The Kleihauer-Betke (acid elution) test or flow cytometric analysis of maternal blood may allow for an estimation of the volume of fetal blood in the maternal circulation, but should ideally be drawn within hours of the suspected bleeding episode due to the rapid clearance of fetal cells from maternal circulation.
4. Intraamniotic infection resulting in fetal death is usually evident on clinical exam. Placental membrane culture and autopsy examination of the fetus, the placenta/fetal membranes, and the umbilical cord may be useful.
5. Fetal X-rays or MRI may sometimes be valuable if autopsy is declined.
6. Other conditions that should be considered in the setting of IUFD include preeclampsia (especially in the setting of intrauterine growth restriction) and maternal diabetes.