

Feticide

Key Points

- Parents must receive sympathetic and supportive counselling before and after the procedure.
- The RCOG currently recommends feticide for terminations over 21+6 weeks.

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Abbreviations

KCI	Potassium chloride
TOP	Termination of pregnancy

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1. Introduction

When undertaking a termination of pregnancy, the intention is that the fetus should not survive and that the process of abortion should achieve this. Death may occur before delivery, either by the procedure undertaken by an obstetrician (feticide) or as a consequence of a compromised fetus being unable to tolerate induced labour.

Death may also occur after birth, either because of the severity of the abnormality for which termination was performed or because of extreme prematurity, or both.

The RCOG currently recommends feticide for terminations over 21+6 weeks. The only exception to this rule is when the fetal abnormality itself is so severe as to make early neonatal death inevitable irrespective of the gestation at delivery, and it is reasonable to assume that anencephaly would fulfil this criterion¹.

It is reasonable to offer feticide to all parents undergoing termination between 20 – 21+6 weeks but allow them to choose whether to accept after explaining the following data. In the Epicure study, 11% of 2122 fetuses believed to be 20–22 weeks of gestation were born alive, of which two (0.1%) survived to discharge. Wyldes and Tonks reported data on live birth rates in terminations for fetal abnormality in the West Midlands between the years 1995 and 2004. Overall, 102 of the 3189 (3.2%) fetuses were born alive, of which 36% survived 1 hour or less and 6% for 6 or more hours³. And whilst many professionals will find the procedure of feticide stressful, most agree that feticide will prevent parents and labour ward staff from facing the agony of neonatal distress and pain.

Instances of recorded live birth and survival increase as gestation at birth extends from 22 weeks. In accordance with prior RCOG guidance, feticide should be routinely offered from 21+6 weeks of gestation⁴. Where fetal abnormality is not compatible with survival, termination of pregnancy without prior feticide may be preferred by some women. In such cases, delivery management should be discussed and planned with the parents and all health professionals involved and a written care plan agreed before termination takes place.

2. Prerequisites prior to feticide

2.1 Counselling and consent

- 2.1.1 Parents must receive sympathetic and supportive counselling before and after the procedure. Where a fetal abnormality has been diagnosed at or greater than 21+6 weeks of gestation and termination is an option, the woman should receive counselling by the Fetal Medicine Consultants. This is the start of the consenting process, which follows the principles of the Montgomery ruling.
- 2.1.2 Parents should be offered further counselling with the antenatal screening team before the procedure and /or the hospital chaplain and bereavement midwives depending on their wishes. It is important that parents have constant access to the fetal medicine/screening team as long as it takes to resolve their queries and an informed consent is reached in principle. Counselling should include discussing the pain and discomfort associated with feticide and also the administration of prostaglandins, pain and bleeding associated with delivery of the fetus, and that surgical procedure may become necessary for removal of a retained placenta.

Parents should also be given the option to decline the procedure. Parents need to be informed of the associated consequences of the fetus showing signs of life at delivery. When possible, the bereavement Midwives should be involved with these discussions.

- 2.1.3 Although some parents may become very distressed upon a diagnosis of a severe fetal anomaly and may request feticide and termination immediately, best practice dictates that the parents have time to reflect on the diagnosis and their decision. The period of reflection ideally should be at least 24 hours, allowing parents to firm their thoughts and their decision. It is the practice at both Frimley Park and Wexham Park sites to encourage patients and their families some time to reflect and possibly grieve before they undergo termination of pregnancy.
- 2.1.4 It is important that the parents have contact names of screening team and contact numbers during the time between diagnosis of fetal anomaly and delivery. The contact numbers for Antenatal screening team are 0300 6136989 for the Frimley Park Hospital site and 0300 615 3301 at the Wexham and Heatherwood Hospital sites.

2.2 Mandatory documentation prior to termination of pregnancy

Where it is agreed that the pregnancy will be terminated, the following is required:

- The appropriate Abortion Act form signed by two registered medical practitioners (Blue HSA1 form)
- The HSA4 form (yellow abortion notification) to be signed (sections 1 and 2)
- The appropriate consent form signed by the woman (written and scanned onto media section of Epic or consented directly into Epic)
- The drug regime documented on Epic

3. Procedural principles of feticide

- 3.1 Feticide should be performed by an appropriately trained practitioner (and always under consultant supervision) under aseptic conditions and continuous ultrasound guidance.
- 3.2 Intracardiac instillation of 15% potassium chloride (KCl) is the recommended method to ensure fetal asystole. After aspiration of fetal blood to confirm correct placement of the needle, 3 – 5 ml of strong (15%) KCl is injected into a cardiac chamber. A repeat injection may be required if asystole has not occurred after 30–60 seconds. Asystole is observed for approximately 2 minutes. After this period of observation, the Cook needle is flushed with normal saline before retracting it to avoid KCl reaching maternal tissues. A scan is repeated after 30–60 minutes to ensure fetal demise.
- 3.3 Although the recommended site of administration of KCl for feticide is a fetal cardiac chamber, it can also be administered in an umbilical cord insertion (cordocentesis), either at the placental cord insertion or into the intra-abdominal part of the umbilical vein. These sites should be used only if the operator feels competent.

In a series of 239 cases of feticide using this technique, between 20+5 and 37+5 weeks of gestation, there were no failures (live births); asystole was confirmed in all cases within 2 minutes of the initial injection, with no woman requiring a second needle insertion and no maternal complications⁵. The mean volume of KCl required was 4.7 ml (range 2–10 ml). Although KCl can be administered via the umbilical route after cordocentesis, failures have been recorded^{5,6}.

- 3.4 Feticide is performed as an outpatient procedure in a designated ultrasound room.

The procedure is performed by the Fetal Medicine consultant (operator) assisted by either a second consultant or the screening midwife. The Fetal Medicine consultant is the lead professional for this procedure and the screening Midwife's role is to support the

consultant and the family. It is the responsibility of the Fetal Medicine consultant to prescribe and direct the administration of the intra-cardiac KCl ensuring correct timing if a second person is assisting with the KCl injection.

It is essential that an experienced practitioner is available with sufficient time to carry out the procedure and support the family. If not, consideration should be made to refer the patient to the tertiary referral centre with a clear follow up plan in place for admission to labour ward.

The Bereavement Midwives should be informed of all planned admissions to the labour ward for TOP.

- 3.5 Termination of pregnancy is distressing for patients and staff involved in the procedure. Any staff member who would not wish to be involved in feticide procedure should advise the antenatal screening team, and they would not be expected to attend. Extreme care should be taken to provide respect and support to family and staff involved with the case.

4. Standard Operating Procedure (SOP)

The woman may be advised to take 1gm of paracetamol an hour before arriving such that some analgesia is already in place.

A trolley with the equipment is made ready before the patient and partner are invited into the ultrasound room. A sterile pack with tray and paper sheet is laid on to the trolley surface.

- i. **Drawing up lignocaine:** 10 mls of 1% lignocaine are drawn up in a 10ml syringe, using a green needle. This syringe is then capped by a blue or yellow needle that is used to superficially infiltrate the patient's skin. A green needle is then attached for deeper infiltration for achieving local anaesthesia.
- ii. **Cardiac bloods:** Where cardiac bloods are required for diagnosis such as genetic screening or infection screening, four 1ml syringes are heparinised. Where cardiac bloods are not required, either a 1ml or a 2ml syringe is taken to aspirate fetal cardiac blood to confirm correct placement of needle.
- iii. **Drawing up of 15% KCl:** Two ampoules of 15% Potassium Chloride (KCl) are obtained from the pharmacy and signed for in the controlled drugs book. Contents of one ampoule is transferred into two 5 ml syringes so that they are a size different to the syringe size for lignocaine. These syringes are marked with bright stickers or wrapped in a swab so clearly identifiable. One ampoule of KCl is kept in reserve and discarded if not used.
- iv. **Syringe size:** The syringe sizes in usual use are 5mls and 10mls. The choice of size of syringe for lignocaine and 15%KCl may vary between the Frimley and Wexham sites, but must be embedded, constant and consistent at each site. It is imperative that the two solutions, lignocaine and 15%KCl are in distinctly different syringes and very clearly distinguishable from one another.
- v. **Failsafe to distinguish syringe containing lignocaine and syringe containing 15% potassium chloride solution:** These 2 failsafe mechanisms of
 - (i) syringes of different sizes to hold lignocaine and to hold 15%KCl, and
 - (ii) marking the syringe(s) holding 15%KCl with bright sticker(s) eliminate any risk of confusion about the contents.

- vi. **Procedure needle:** A 17-19 gauge Cook needle is opened from its sterile pack.
- vii. **Obtaining written consent:** After setting the trolley, the patient and a family member are invited into a counselling room, where the fetal medicine consultant confirms the patient's understanding of the procedure, answers any further questions to the patient's satisfaction, and obtains a written consent for termination by feticide.
- viii. The patient and family member are then taken into the ultrasound room. Any additional monitors for viewing of ultrasound images are turned off.
- ix. **Aseptic precautions:** The procedure is performed under aseptic conditions with continuous ultrasound guidance. The maternal abdomen is cleaned with chlorhexidine solution. A sterile probe cover is applied on to the ultrasound probe, and either sterile transducer gel or sterile chlorhexidine solution is used for insonation, depending on operator's preferences.
- x. **Procedure:** The fetus is viewed on scan, and an appropriate target area is chosen, usually the most accessible cardiac chamber/direct vision of four chamber view. 10 mls of 1% lignocaine is infiltrated into the skin at the appropriate point. The 17-19 Cook needle is introduced through the maternal skin, through the uterine musculature into the cardiac chamber. When the needle appears to be correctly placed, the assistant removes the stylet and attaches a 1ml syringe to aspirate blood to ensure correct placement.
- xi. **Aspiration of fetal blood:** Where fetal blood is required for diagnosis, 4 mls of fetal blood are aspirated by the assistant, and the filled syringes handed over to the third member of team who stores the blood in a labelled lithium-heparin bottle (fetal karyotype) or EDTA (array CGH) and labels the bottles.
- xii. **Administration of 15% potassium chloride solution to the fetus:** The assistant then firmly attaches the marked syringe containing 15% KCl to the hub of the Cook needle. The Fetal Medicine consultant instructs the timing of the injection of KCl into the fetal heart – normally 3 - 5 mls initially by slow injection.
- xiii. **Asystole:** The fetal heart activity is noted to slow down and/or stop with administration of usually 3-5 mls of 15% KCl. Cardiac activity is then observed for at approximately 2 minutes to confirm permanent asystole. After this period of observation, the Cook needle is flushed with normal saline before retracting it to avoid KCl reaching maternal tissues. The end of procedure is then announced.
- xiv. **Confirmation of fetal demise:** A repeat scan is performed 30 minutes later to confirm fetal demise.
- xv. **Documentation:** The procedure is then documented in the Unit's Astria reporting system and documented on patient's Epic notes
- xvi. **Post feticide procedure:** After fetal asystole is noted following feticide, the parents are taken to a quiet room to allow space and time to grieve. The woman is then taken back into the ultrasound room 30 minutes later, for a confirmation scan. After this scan, the parents return to the quiet room. After a reasonable time period, she is given mifepristone (200 mg orally) after checking her blood pressure. She is then allowed home and will return for induction of labour (IOL) 48 hours later with misoprostol. In some instances, mifepristone will have been administered 24 – 48 hours before the

procedure so patient can go directly to the Labour Ward for IOL with misoprostol.

- xvii. **Karyotyping and fetal postmortem examinations** are offered in appropriate cases.
- xviii. **Anti-D immunoglobulin prophylaxis** to be given to all RhD-negative women.
- xix. **Induction of labour:** Induction of miscarriage or labour is done in accordance to Trust guidelines with intravaginal prostaglandins and/or oral prostaglandins. It is advisable but not essential that on admission to the ward for induction, 48 hrs after administration of mifepristone, that the fetal heart is checked for asystole and fetal death, before administering prostaglandins. This is especially important when the feticide procedure has been performed in a tertiary referral centre and asystole has not been confirmed by a Trust consultant.

5. Postmortem examination

Parents who had earlier in the process accepted postmortem examination of the delivered fetus should be given the forms to read and understand. This should be done sensitively and with empathy, a few hours after delivery. Should they continue to accept the examination, they could sign the consent for postmortem examination of the delivered fetus. The bereavement midwives should be involved to provide additional support and can also be available to complete the consent process.

6. Funeral arrangements

Some parents would like to take the delivered fetus to arrange their private funeral service whilst other parents would prefer the hospital to arrange the burial or cremation. Their preferences should be documented in the notes and facilitated.

7. Monitoring compliance

All midtrimester terminations of pregnancy are monitored through the perinatal mortality audits locally and regionally. Any baby born alive following mid trimester termination of pregnancy will be subject to case review via risk management.

Appendix 1: Clinical room set up, consent and procedure for feticide

Clinical room set up for Feticide

3 x 5 swabs

Inco pad to put on side of patient.

Blue paper sheet pack

Sterile bowl

Chlorhexidine wash

Sterile gel sachet

Probe cover

Drugs

1. 2 X 5ML (10mmols in each 5 ml) 15% Potassium Chloride (KCL) from control drug cupboard
2. Sodium Chloride 1x 0.9% NaCl 2ml
3. Lidocaine 1 x 1% 10ml

Syringes and needles

1. For KCl x 5ml syringe, and green needle for drawing up
2. For NaCl flush – 1 x 2ml syringe and 1 x green needle for drawing up
3. For fetal blood aspiration – 4 x 2 ml syringe
4. For Lidocaine 1%- 1 x 10 ml syringe and 1 x green needle for drawing up (1x orange needle for injection)
5. CVS needle COOK :17 or 18 gauge.

For fetal blood samples

1. FBC 2 x Paediatric EDTA Blood bottles for array CGH +/- DNA storage
2. Lithium heparin paediatric bottles required for specific Karyotype /or chromosome condition.

Bottles to be labelled with, for example, “fetus of Susan Smith”, with mother’s MRN number

Prescribing Potassium 15% KCl

When scheduling appointment on EPIC ensure woman and ‘pending baby ‘is scheduled onto fetal medicine consultant clinic. This allows consultant to follow the correct EPIC workflow and prescribe and document administration of KCL to the fetus and not the mother.

Consent

1. Blue form: HSA1
2. EPIC consent to be completed.
3. Postmortem form: signed and witnessed.

Procedure for feticide – this is a 2 Consultant procedure.

The midwife's main role is to offer support to the couple.

Ensure patient and partner are comfortable and second observation screen switched off.

Check preparation of trolley with both consultants

Assist lead consultant with setting up trolley and drawing up drugs.

Always ensure that the KCI is clearly identified on trolley by being in 5ml syringes and wrapped in a swab and ensure all medical staff are aware of location of KCI.

The chlorhexidine wash will be passed to the consultant, and she will ensure that the patient's abdomen is sterile for the procedure.

The midwife will assist the Consultant with putting the probe cover on and put the sterile gel on patient abdomen.

The support consultant will pass the drawn-up lidocaine to the lead consultant and then the CVS needle as directed.

Once the needle has been correctly positioned using the guidance of ultrasound, the lead consultant will ask the support consultant to remove the inner stilette

The support consultant will attach a 2 ml syringe and aspirate as much blood as required for any diagnostic tests and repeat if necessary.

The support consultant will attach KCI 5ml syringe when directed by lead.

Usually, the support consultant doctor will inject KCI. The KCI will be seen flowing into the fetal heart.

When appropriate the support consultant will stop injecting KCI usually when the fetal heart is seen to have stopped beating or significantly slowed in rate and remove the syringe. The lead consultant will ask for the 2 mls NaCl to be slowly injected as the needle is removed from the patient. This limits the amount of KCI that could be released into the mother.

After the procedure

Accompany couple to counselling room for privacy.

About 20 mins later the consultant will rescan to ensure there is no fetal heart activity

Complete EPIC procedure documentation

If going home, ensure patient aware of plan of when to return to labour ward or arrange transfer of the patient directly to labour ward as appropriate.

Remember to sign CONTROLLED DRUGS BOOK

Ensure clear documentation of all procedures and any verbal communication.

References

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Full version control record

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Version History

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1.0	April 2019	P Sarkar, Consultant Obstetrician and Gynaecologist	Final	First cross-site guideline
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Related Documents

None