

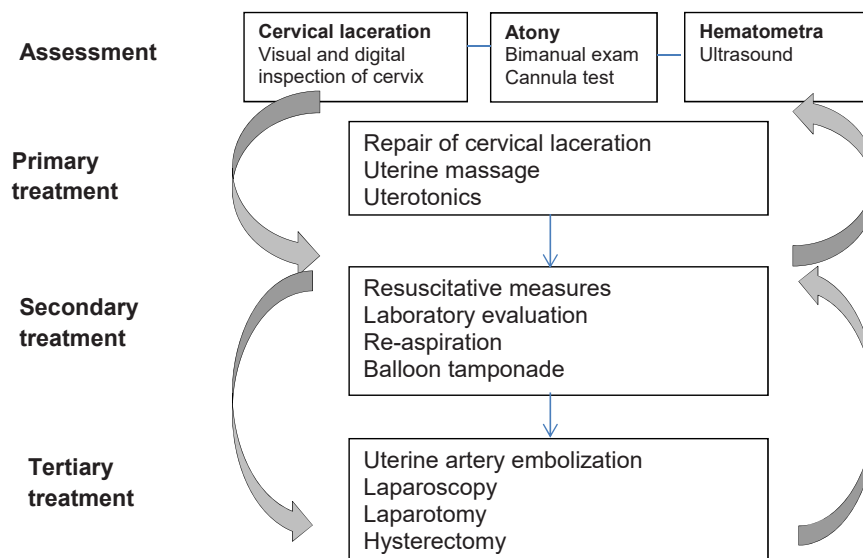


Fig. 2. Algorithm for a systematic approach to treatment of postabortion hemorrhage.

Treatment of hemorrhage

2.8. What are the steps to evaluate and treat hemorrhage during an abortion procedure?

Developing an organized approach is crucial to effectively evaluating and treating postabortion hemorrhage, as we describe in Figure 2. The first step in the approach to bleeding is a physical examination, of which the three key components are visual and digital inspection to identify cervical laceration or perforation; bimanual examination to assess uterine tone; and ultrasound to assess for retained tissue or reaccumulation of blood. Some clinicians find the “cannula test” to be helpful in distinguishing lower uterine segment or high cervical bleeding (e.g., site of a previous scar or cervical laceration) from that of atony at the fundus. The cannula test is done by inserting an 8 to 10 mm cannula to the fundus, and withdrawing it slowly to identify when bleeding through the cannula is briskest.

Primary treatment

In many cases, primary treatment measures will be effective and sufficient. If there is a cervical laceration, a clinician should evaluate the location and extent of the laceration by digital examination and correlate with the recollection of the person who performed the abortion procedure. If needed, the clinician should call for assistance to obtain optimal visualization. Direct pressure and/or application of silver nitrate is appropriate for small lacerations on the surface of the cervix while ferric subsulfate (Monsel’s solution) may be needed for larger lacerations and lacerations inside the cervix. Surgical repair with absorbable sutures is preferred for external cervical lacerations that are bleeding or are > 1 cm. If bleeding is persistent after repair of a high cervical tear, the clinician should evaluate for a uterine artery laceration.

In the absence of evidence of a cervical laceration or perforation, we recommend initiating uterine massage. This is often done in conjunction with the bimanual examination during the assessment phase. Administration of uterotonic therapy is a logical next step either during uterine massage or if massage fails to control bleeding. While treatment measures are employed, it is important to continually return to assessment measures, such as bimanual examination and ultrasound, if available, to direct the next therapeutic steps.

Uterotonic agents are a mainstay of primary treatment, with a retrospective cohort study reporting that 41% of cases of uterine atony were successfully treated with uterotonics alone [13]. We recommend immediate administration of uterotonics if massage alone fails (GRADE 1B), with methylergonovine maleate and misoprostol appropriate first-line treatments. Methylergonovine maleate and misoprostol are commonly used uterotonic medications for the treatment of postabortion hemorrhage [50]; oxytocin and carboprost are less commonly used. Little evidence exists to recommend starting with a particular agent, although methylergonovine maleate effects the most rapid response. Vasopressin, while not a uterotonic agent, also effects a rapid response and is a reasonable first-line medication to treat hemorrhage. If the hemorrhage is severe or does not resolve with a single uterotonic agent, additional or repeat doses of uterotonics can be administered.

For methylergonovine maleate, intramuscular administration of 0.2 mg is most common. Frequency of dosing is controversial, though many clinicians repeat the dose after 20 minutes for a maximum of two doses. Of note, the recommendation in the postpartum setting is to allow 2 to 4 hours between doses [108].

Misoprostol is an effective uterotonic in cases of postabortion hemorrhage, although the optimal route and frequency of dosing are unknown. In the setting of hemorrhage, doses of 800 to 1000 mcg are recommended. The time to peak concentration is most rapid with oral and sublingual administration, though sublingual administration effects the highest serum concentration [109]. Compared with oral administration, vaginal administration achieves a higher peak concentration but is usually not feasible in the setting of hemorrhage during procedural abortion. Rectal administration is associated with rapid onset but lower peak concentration and lower uterine tone and activity than buccal or vaginal administration [110]. Based on their pharmacokinetics, sublingual and buccal administration is preferable to rectal administration and, in an awake patient, should be the chosen route.

Oxytocin is considered an effective uterotonic. Traditionally, oxytocin was thought to be less effective because of fewer uterine oxytocin receptors in the second trimester [111]. However, an RCT found that prophylactic oxytocin at the time of dilation and evacuation is associated with lower blood loss but no difference in interventions for bleeding [6]. There is no evidence to guide its use in the treatment of postabortion hemorrhage. When used, it is typically given as 10 units intramuscularly or 10 to 40 units intravascularly. Although vasopressin has not been evaluated as a treatment for