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Introduction of the dilation and evacuation procedure for second-trimester abortion in Vietnam using manual vacuum aspiration and buccal misoprostol

Laura D. Castleman[a,*], Khuat Thi Hai Oanh[a], Alyson G. Hyman[a], Le Thanh Thuy[b], Paul D. Blumenthal[a]

[a]*Ipas, Chapel Hill, NC, 27516, USA*

[b]*Family Planning Department, Hanoi Obstetrics and Gynecology Hospital, Hanoi, Vietnam*

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Abstract

Background: The dilation and evacuation (D&E) procedure was modified for use in a low-resource setting where access to electric vacuum aspiration is limited.

Method: In this demonstration project, buccal misoprostol is used for cervical preparation, followed by evacuation using manual vacuum aspiration (MVA) and forceps. Senior physicians at the Hanoi Obstetrics and Gynecology Hospital were trained in D&E and subsequently conducted 439 D&E procedures.

Results: The primary outcomes were efficacy and safety. Secondary outcome measures include efficacy of buccal misoprostol for cervical preparation prior to D&E and the feasibility of MVA for use in the D&E procedure.

Conclusion: Successful abortion took place in 100% of the cases. Three major complications occurred. This procedure may be appropriate in other low-resource settings lacking safe, effective abortion services in the second trimester.

Keywords: Abortion; Dilation and evacuation; Buccal; Misoprostol; Manual vacuum aspiration

1. Introduction

The limited range of modern contraceptive methods available in Vietnam and a national population policy that strongly encourages women to have no more than two children throughout their lifetimes contribute to high rates of abortion. It is estimated that 1.3–2.5 million abortions per year occur in a total population of nearly 80 million [1,2]. Vietnamese women typically undergo 1.34 abortions in a lifetime, and as many as one third of all pregnancies end in abortion; in some regions of Vietnam, 75% of pregnancies are reported to end in abortion [2,3]. Generally, Vietnamese women terminate unwanted pregnancies as early as possible, and most abortions in Vietnam are performed in the first trimester [1].

A national assessment of abortion by the Vietnamese Ministry of Health (MOH) and the World Health Organization (WHO) found that second-trimester abortion is difficult to obtain [1]. The few hospitals that provide second-trimester abortions typically perform a modified Kovac's procedure in which a condom-covered catheter is inserted through an unprepared cervix. Labor is then induced by infusing up to 500 ml of normal saline through this catheter while administering intravenous oxytocin. The entire process requires sharp curettage after fetal expulsion and takes 3–5 days in the hospital [2]. Long hospital stays awaiting termination were found to be stressful in one study looking at women's perceptions of their abortion experience [4]. Though efficacy and safety studies of the Kovac's procedure are limited, Vietnamese clinicians report that it is associated with a high risk of complications, especially infection ([5]; Le Thanh Thuy, personal communication, 1999).

Kovac's procedures are not offered until at least 16 to 20 weeks after the woman's last menstrual period (LMP), requiring a delay in abortion for women who present between 12 and 16–20 weeks. The WHO assessment

* Corresponding author.
E-mail address: castlemanl@ipas.org (L.D. Castleman).

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characterized this lack of access to second-trimester abortion services as a significant problem, with serious health consequences for Vietnamese women [1]. Delaying abortion to later gestation increases the risk of morbidity and mortality [6,7]. We found no published studies comparing the dilation and evacuation (D&E) and Kovac's procedures, but several studies have documented a low complication rate for D&E [8–10]. D&E could fill the gap in services that currently exists between 12–20 weeks, and does not require hospitalization.

Risks of D&E can be reduced by preparing the cervix prior to the procedure [8]. Laminaria, hygroscopic dilators commonly used to prepare the cervix, are not available in Vietnam. Preparing the cervix with prostaglandins is an alternative to mechanical preparation [11]. Misoprostol, a synthetic prostaglandin E_1 analogue, is inexpensive, stable at room temperature and available in Vietnam. Both vaginal and oral misoprostol have been shown to prepare the cervix as effectively as laminaria prior to early second-trimester surgical terminations [11,12]. Buccal (placed in between the cheek and the gum) misoprostol enables women to avoid vaginal placement and presents a programmatically favorable method of cervical preparation. In one study of second-trimester abortions, women preferred oral over vaginal administration of misoprostol [13]. These advantages made the buccal mode of misoprostol delivery attractive to both providers and patients.

We trained five Vietnamese gynecologists to provide second-trimester D&E. We assessed the success rate and safety of D&E between 13 and 18 weeks LMP provided during a monitored period of time. Secondary outcome measures include efficacy of buccal misoprostol for cervical preparation prior to D&E and feasibility of manual vacuum aspiration (MVA) for use in the D&E procedure. We also desired to gain experience with training methods used to enable gynecologists in a low-resource setting to acquire new operative skills. We report here on the experiences of these physicians in providing D&E procedures.

2. Materials and methods

This project was undertaken at the Hanoi Obstetrics and Gynecology Hospital, a leading referral center in the capital city of Vietnam. In 1997, a site assessment revealed no laminaria and limited availability of electric vacuum aspiration. In a typical D&E procedure, the cervix is dilated with laminaria, and the amniotic fluid is aspirated through an electric pump [14]. We modified this approach in order to work within the resources available in Vietnam. We prepared the cervix with misoprostol and then evacuated the amniotic fluid with a 60-ml double-valve aspirator (Ipas, Chapel Hill, NC, USA), as is commonly used in MVA procedures.[1] The aspirator was used to evacuate smaller fetal parts that could be readily removed without the use of forceps.

[1] In the U.S., Ipas MVA instruments are intended for use in the first trimester.

Table 1
Marital and age status of women undergoing abortion with D&E

Women's age group	15–19 years		20–29 years		30–39 years		40–48 years	
	n	%	*n*	%	*n*	%	*n*	%
Married	5	1.1	69	15.7	62	14.1	32	7.3
Unmarried	38	8.7	208	47.4	21	4.8	4	0.9
Total in age group	43	9.8	277	63.1	83	18.9	36	8.2

In 1999, a team from the nongovernment international organization Ipas worked closely with the Vietnamese MOH to introduce D&E to five senior Vietnamese physicians already proficient in MVA for first-trimester abortion. Standardized procedures were written in a training module and then translated into Vietnamese [15]. We used a competency-based training approach with pelvic model practice, role-plays, pre- and post-training written tests, interactive lectures, case studies and a standardized D&E procedure with a checklist. We evaluated technical performance, facilities, equipment and supplies and assessed the interaction between clinicians and patients. Active intraoperative coaching and supervision ensured quality of care while the participants learned the D&E technique. Trainees first acquired experience up to 16 weeks LMP and later progressed to 18 weeks LMP. Ipas staff and medical consultants conducted regular follow-up monitoring visits for quality improvement purposes [16].

From June 1999 to January 2002, women presenting to the Hanoi Obstetrics and Gynecology Hospital from 12 to 18 weeks LMP requesting pregnancy termination were invited to participate in the project. The project underwent ethical review and approval by the Scientific and Technology Committees of the hospital and the Vietnamese MOH. In accordance with local requirements, participants (as well as their husbands if married or parents if adolescents) gave written informed consent prior to enrollment. Inclusion criteria were a viable intrauterine pregnancy under 18 weeks and ability to give informed consent. Exclusion criteria were significant uterine anomalies precluding D&E, bleeding disorders, or an inability to grant informed consent.

All women had a history, physical examination and sonographic determination of gestational age, followed by counseling and a hemoglobin determination. The MOH agreed to cervical preparation using misoprostol 400 μg buccally in most women except in those who had had a previous cesarean delivery or those between 12 and 13 weeks of gestation; these women received 200 μg of buccal misoprostol. If the cervix was softened or opened 3–6 h after receiving misoprostol, the pregnancy was terminated. If the cervix remained firm and closed, the woman was observed in the hospital overnight and received an additional 200–400 μg of misoprostol the next morning. The attending physician decided whether the patient received 200 or 400 μg of additional misoprostol.

Immediately prior to the procedure, women received intravenous meperidine with or without atropine and