

Original research article

Induction of fetal demise before pregnancy termination: practices of family planning providers^{☆,☆☆,★}

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Abstract

Objectives: Our survey aimed to characterize the practice of inducing fetal demise before pregnancy termination among abortion providers, including its technical aspects and why providers have chosen to adopt it.

Study design: We conducted a survey of Family Planning Fellowship-trained or Fellowship-affiliated Family Planning (FP) subspecialists about their practice of inducing fetal demise, including questions regarding the circumstances in which they would induce demise, techniques used and rationales for choosing whether to adopt this practice.

Results: Of the 169 FP subspecialists we surveyed, 105 (62%) responded. About half (52%) of respondents indicated that they routinely induced fetal demise before terminations in the second trimester. Providers' practices varied in the gestations at which they started inducing demise as well as the techniques used. Respondents provided legal, technical and psychological reasons for their decisions to induce demise.

Conclusion: Inducing fetal demise before second-trimester abortions is common among US FP specialists for multiple reasons. The absence of professional guidelines or robust data may contribute to the variance in the current practice patterns of inducing demise.

Implications: Our study documents the widespread practice of inducing fetal demise before second-trimester abortion and further describes wide variation in providers' methods and rationales for inducing demise. It is important for abortion providers as a professional group to come to a formal consensus on the appropriate use of these techniques and to determine whether such practices should be encouraged, tolerated or even permitted.

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1. Introduction

Induced abortion is a common medical procedure for reproductive-aged women in the United States (US), with 1.06 million abortions reported in 2011 [1]. Of these, approximately 11% are performed after the first trimester [2]. These patients receive care from a smaller subset of physicians within the entire population of abortion providers;

of all US abortion providers, only 64% offer procedures after 13 weeks' gestation, decreasing to 23% at 20 weeks and 11% at 24 weeks [3]. This decrease likely is due to both the greater technical skill and training needed for more advanced gestations, as well as increased political and legal hostility towards later abortions.

In recent years, debate has emerged over the practice of inducing fetal demise before terminations completed in the second trimester. Although the first case report of inducing fetal demise dates to the late 1970s [4], anecdotal reports suggest that such practices recently have become more common among abortion providers, especially since the 2003 passage of the Federal Abortion Ban and the subsequent 2007 Supreme Court decision upholding it [5–7]. The Ban, which mandates criminal penalties for any practitioner who “deliberately and intentionally vaginally delivers a living fetus,” has led many providers and institutions to believe that

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inducing fetal demise before terminations could provide legal protection for abortion providers, although there has been no legal test so far [5]. Inducing fetal demise is not without controversy, as it involves risks to patients without associated medical benefit, making it difficult to justify from an ethical standpoint [6].

We sought to understand more about the practice of inducing fetal demise. Although small observational studies indicate an increase in inducing fetal demise before terminations since the Federal Abortion Ban [8], we know little about which abortion providers are inducing demise, what techniques they are using or for which patients. Furthermore, little is known about the reasons providers choose to induce demise. Our study aimed to better characterize the current state of inducing fetal demise in the US by gathering practice data from Family Planning (FP) subspecialists.

2. Material and methods

In 2010 and 2011, we anonymously surveyed both FP and Maternal Fetal Medicine (MFM) subspecialists across the country, including current fellows and faculty affiliated with the fellowships. We obtained names and emails of current and former FP fellows through the national Fellowship in Family Planning (FFP) office and also received names and emails of current affiliated FP faculty from the directors of each FFP site. With approval from the Society of Maternal Fetal Medicine (SMFM), we purchased list of names and postal addresses for SMFM members.

We invited all subjects via email to complete an online anonymous survey using KeySurvey software and subsequently sent two email reminders. We offered a \$5 gift card to all participants that was not contingent upon survey completion and accessible through an anonymous link not connected to their survey answers. We asked participants to identify the region of the United States in which they practiced but not the state or institution. The study was approved by the University of California San Francisco Committee on Human Research.

The full survey included 65 questions on demographics, provision of second-trimester abortion and the practice of inducing fetal demise before abortions. “Elective” dilation and evacuation (D&E) or induction termination as a reason for abortion was not specifically defined but was distinguished from terminations for lethal or nonlethal fetal anomalies, severe maternal disease, inevitable abortion and preterm premature rupture of membranes. We asked participants to identify (a) whether their institution induced fetal demise as a step before abortion; (b) whether the individual him-/herself or others in that institution induced the fetal demise; (c) at what gestation fetal demise was routinely induced; (d) the main reason for inducing fetal demise before abortion (institutional policy, group/practice policy, physician preference or patient preference) and (e)

the main method used [intraamniotic digoxin, intrafetal digoxin, intracardiac potassium chloride (KCl), umbilical cord division or other]. We asked providers to leave comments about their reasons for preferring to do abortions after inducing fetal demise.

We assessed personal abortion attitudes using a validated instrument with five questions using a five-point Likert scale. Scores ranged from 5 to 25, with higher scores representing more positive attitudes towards abortion [9]. We measured religiosity using three validated questions with true/false responses. Scores ranged from 0 to 3, with higher scores representing greater religious motivation [10].

Given a low response rate among MFM specialists, we limited our analyses here to the FP group. We report descriptive statistics using χ^2 tests, Fisher’s Exact Tests, and *t* tests as appropriate, using Stata version 11.0 (Stata Corporation, College Station, TX, USA) to analyze the data.

3. Results

We identified 169 eligible respondents, including 34 current FP fellows (in 2010), 119 former FP fellows and 16 Fellowship faculty members who were not formally trained through the Fellowship but serve as Fellowship mentors, and sent online surveys to all identified providers. We received completed surveys from 105 FP specialists, for a 62% response rate. Of these, 26 were current fellows, 64 were former fellows, and 15 were Fellowship-associated faculty.

The majority of respondents were female and less than 40 years of age (Table 1). All regions of the country were represented, although respondents were less likely to work in

Table 1
Demographic characteristics of respondents (N=105).

Total	105 (100)
Age (years)	37 (30–69)
Female	91 (86.7)
Region	
West	32 (30.8)
Northeast	35 (33.7)
South/Southeast	10 (9.6)
Midwest	27 (26.0)
Works \geq 50% of clinical time in an academic institution	93 (88.6)
Works with trainees	101 (96.2)
Abortion attitude ^a	22 (7–25)
Religiosity ^b	0 (0–3)
Number of D&Es performed per year	100 (2–2100)
Number of induction terminations performed per year	2 (0–500)
Institution allows elective induction termination	27 (25.7)
Institution allows elective D&E	88 (83.8)
Induce fetal demise before termination	55 (52.4)

Data are presented as *n* (%) or median (range).

^a Abortion attitude was assessed using a validated instrument with five questions on a five-point Likert scale. Scores range from 5 to 25, with higher scores representing more positive attitudes towards abortion [9].

^b Religiosity was measured using three validated questions with true/false responses. Scores range from 0 to 3, with higher scores representing greater religious motivation [10].

Gestational Duration At Which Providers Routinely Induce Demise Before D&Es

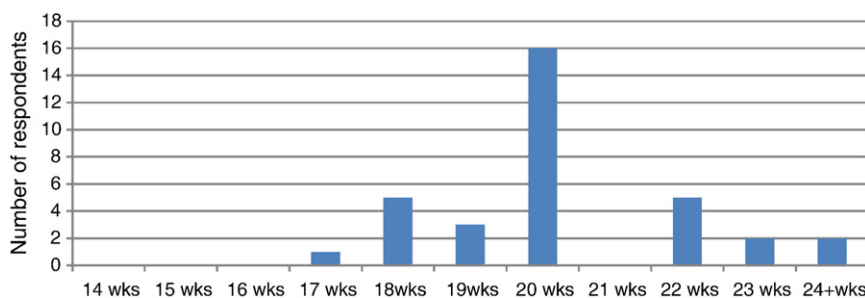


Fig. 1. Gestational duration at which providers routinely induce fetal before D&Es.

the South/Southeast region than other geographic regions. The majority of providers worked more than 50% of the time in academic institutions, and greater than 95% reported that they worked with trainees. All respondents had been trained in D&E and reported performing an average of approximately 200 such procedures annually. Only one quarter of

respondents reported that their institutions allowed elective induction terminations.

About half of all respondents reported that they induced fetal demise before terminations. Seventeen respondents reported that their decision to induce demise was done on a case-by-case basis rather than a specific gestational age. However, those who based their decision on gestational duration reported thresholds spread widely throughout the second trimester, with a clustering around 20 weeks (Fig. 1). While the earliest gestation at which any provider reported routinely inducing fetal demise before D&E was 17 weeks, two respondents did not begin until 24 weeks or later. Thresholds for inducing demise before induction terminations were similarly distributed. Methods of inducing demise also varied among providers. Approximately half of respondents used digoxin, whether intrafetal (31%) or intraamniotic (22%), and a large minority reported using alternative methods, including intracardiac KCl (36%), umbilical cord transection (2%) or another method altogether (9%).

Providers who reported practicing more than 50% of the time in an academic institution, as compared to those who did not, were more likely to induce fetal demise (53% vs. 25%; $p=.04$) (Table 2). Providers who reported that they induced fetal demise were more likely to express more favorable attitudes towards abortion ($p=.01$), though both groups reported positive attitudes. Age, gender, religiosity and number of terminations performed annually were not notably different between providers who did and did not induce demise.

Reasons for inducing fetal demise included institutional policy (40%), followed by physician preference (29%), group/practice policy (21%) and finally patient preference (10%). Of the 105 respondents, 14 FP specialists chose to leave comments explaining their practice regarding fetal demise. These explanations included legal reasons, technical reasons and psychological/emotional reasons, with some respondents referencing more than one (Table 3). Providers mentioning legal reasons often expressed concern that performing an intact procedure would violate the Federal

Table 2

Institutional and individual factors associated with variation in inducing fetal demise ($N=105$).

	Induces fetal demise ($n=55$)	Does not induce fetal demise ($n=50$)	p value
Institutional factors			
Works $\geq 50\%$ of clinical time in academic institution	52 (55.9)	41 (44.1)	.04
Works with trainees	54 (53.5)	47 (46.5)	.26
Elective terminations permitted by institution	49 (55.7)	39 (44.3)	.12
Region			
West	20 (62.5)	12 (37.5)	.32
Northeast	18 (51.4)	17 (48.6)	
South/Southeast	3 (30)	7 (70)	
Midwest	13 (48.2)	14 (51.9)	
Individual factors			
Age (years)	37 (30–69)	36 (31–65)	
Gender			
Female	49 (53.9)	42 (46.2)	.44
Male	6 (42.9)	8 (57.1)	
Abortion attitude ^a	22 (17–25)	22 (17–25)	
Religiosity (0–3 point scale) ^b	0 (0–3)	0 (0–3)	
Number of D&Es performed per year	125 (30–1000)	100 (2–2100)	
Number of induction terminations performed per year	5 (0–100)	1 (0–500)	

Data are presented as n (%) or median (range).

^a Abortion attitude was assessed using a validated instrument with five questions on a five-point Likert scale. Scores range from 5 to 25, with higher scores representing more positive attitudes towards abortion [9].

^b Religiosity was measured using three validated questions with true/false responses. Scores range from 0 to 3, with higher scores representing greater religious motivation [10].

Table 3
Respondents' reasons for inducing fetal demise before abortion: qualitative responses ($n=14$).

Legal reasons
“It may prevent legal risk of being accused of [performing a] partial birth abortion”
“Don't have to worry about legal issues”
“Do not have to worry about accidentally performing an intact procedure”
Technical reasons
“Easier to disarticulate”
“Cortical bone softening”
“Helps for advanced gestational ages”
Psychological/emotional reasons
“Personal preference”
“Easier...psychologically”
“Less drama”

Abortion Ban, whether by name or by mentioning the possibility of “breaking the law.” Providers mentioning technical reasons often referred to the potential benefits of softening of fetal parts and cervical priming. Those providers citing psychological reasons mentioned concern for the emotional impact on their patients but also on the providers themselves and on the clinic and operating room staff.

4. Discussion

Inducing fetal demise before second-trimester abortion is a common practice among FP specialists in the United States, with about half of all respondents reporting that they commonly induced fetal demise.

We observed a relationship between practice environment and inducing fetal demise. Providers working in environments that are potentially more hostile to abortion were more likely to report inducing fetal demise, possibly as a self-protective measure against legal or professional repercussions. For example, we found that providers working in institutions where “elective” terminations are permitted were more likely to induce fetal demise. Popular opinion in the United States is less supportive of elective abortion procedures [11], and it is possible that providers performing such elective procedures are more likely to induce fetal demise because of increased hostility — real or perceived — in their working environments.

Many providers reported using increased gestational duration as a reason for inducing fetal demise, and we also found a trend towards increased likelihood of inducing fetal demise among providers working with trainees and/or working in academic institutions. The practice of inducing fetal demise in both situations may serve a self-protective function since later abortions have less popular support [11] and may be under greater scrutiny, especially in a clinical setting with more witnesses and observers. In addition, pressure from risk management departments of academic institutions may prompt providers to utilize this practice as a defensive legal measure. The Federal Abortion Ban and the

many other recently passed laws restricting abortion provision may have contributed to providers' perceptions of a hostile and litigious environment — and to their decision to induce fetal demise as a protective measure. This interpretation is supported by comments from respondents who referred to both the concern for legal consequences, sometimes specifically referencing the Federal Abortion Ban, as well as the associated stress of potentially facing legal repercussions.

Another explanation for our findings is that providers believe that inducing fetal demise before abortion makes the procedure technically easier [12]. Several respondents mentioned improved cervical priming, fetal maceration and decreased procedural blood loss as benefits of inducing fetal demise. Although these benefits are not borne out in research [5,6,13], some providers may continue to utilize this practice based on personal experience, especially those providers who work with trainees and believe that D&E is easier to learn if the fetus is demised. Yet this explanation does not explain the finding that inducing fetal demise is more commonly done at institutions that permit elective terminations.

Individual patient factors may also influence a provider's decision to induce demise: A number of providers cited “patient preference” as their main reason for inducing fetal demise. Research on patient preferences regarding inducing fetal demise indicates that such preferences are complex, difficult to predict and substantially influenced by counseling [5,6,14–16]. Nonetheless, some individual providers may still induce fetal demise as an attempt to relieve some of their patients' perceived psychological burden associated with terminations.

We found variation in both the threshold gestational duration chosen by providers as well as the technique used. The variation in practice is understandable given the paucity of guidance available to providers, either from robust data or from professional guidelines. There is very little information available comparing methods of inducing demise to not inducing demise at all or regarding the possible patient benefits associated with these methods. Furthermore, the few studies investigating these benefits show conflicting results and mostly rely on case reports or retrospective data rather than randomized controlled trials. There have been no literature reviews or meta-analyses published examining these smaller studies. The Society of Family Planning 2010 Clinical Guideline reviewed these data and concluded that there was inadequate evidence to recommend inducing fetal demise to increase the safety of D&E, although they did not recommend against it [5]; the American College of Obstetricians and Gynecologists, in its 2013 Practice Bulletin on Second-Trimester Abortion, likewise merely reiterates the absence of supporting evidence [13]. As a result, practitioners in the field largely are left to make these clinical decisions on their own, without either definitive data or professional guidelines to direct their choice of whether to induce demise. It is notable that almost half of all

respondents did not induce fetal demise routinely at any gestational age, further reflecting a broad variation in practice patterns. Some providers argue that, in the absence of any proven patient benefits associated with the practice, inducing fetal demise should never be routinely used before D&Es [6].

There are several possible limitations to our study. Response bias is possible; the overall response rate for our survey was 62%, and nonrespondents may have differed in their demographics and practices. One possibility is that providers who endorse more favorable abortion attitudes may have been more likely to respond to the survey. As this characteristic was associated with a greater likelihood of inducing fetal demise in our study, this could lead to an overestimation of how common the practice is among FP providers. However, while this scenario would bias our estimate of the overall percentage of providers inducing fetal demise, it should not influence our results regarding the wide spectrum of techniques and rationales for inducing fetal demise among those who responded.

Because we did not collect institutional information from respondents, we were unable to account for any clustering effect in our analyses. Further, our survey did not include non-Fellowship-trained providers who perform second-trimester abortions and included only 12 respondents who practice mainly outside of academic medicine. Accordingly, our findings may not be generalizable to this population of providers.

The strengths of our study included the wide range of respondents across geographic locations and clinical practice institutions, and the use of both categorical and open-ended survey questions to understand providers' decisions to induce fetal demise.

More research is needed to understand why the practice of inducing fetal demise has become so popular among abortion providers — whether for legal, technical or psychological justifications — as well as additional well-designed trials to assess whether these justifications are supported by data. Furthermore, given concerns over the ethical nature of some forms of inducing demise, it is important for abortion providers as a professional group to come to a formal consensus on the appropriate use of these techniques and to determine whether such practices should be encouraged, permitted or even tolerated.

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