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Obesity as a Risk Factor for Complication After Second-Trimester Abortion by Dilation and Evacuation

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Abstract

Objective—To evaluate the association between obesity (body mass index [BMI] ≥30 kg/m^2) and dilation and evacuation (D&E) complications.

Methods—We conducted a retrospective cohort study of women who underwent D&E abortion from February 2009 to April 2013 at a hospital-based abortion practice in California. We evaluated the association between obesity and risk of complication after D&E using logistic regression. We defined complications a priori as cervical laceration, hemorrhage, uterine atony, anesthesia complications, uterine perforation, disseminated intravascular coagulation, and retained products of conception. We defined major complications as those requiring hospitalization, transfusion, or further surgical intervention.

Results—Complications occurred in 442 of 4,520 D&Es (9.8%) with equal proportions in both obese and non-obese women (9.8%). Major complications occurred in 78 (1.7%) cases. After adjustment for age, ethnicity, prior vaginal delivery, prior cesarean delivery and gestational duration, there was no association between BMI and D&E complications. Any individual complication was associated with each additional week of gestation (OR 1.3, 95% CI: 1.3–1.4), prior vaginal delivery (OR 1.5, 95% CI: 1.2–1.9) and prior cesarean delivery (OR 1.8, 95% CI: 1.4–2.3). Major complications were associated with each additional week of gestation (OR 1.3; 95% CI: 1.1–1.4) and cesarean delivery (OR 1.8, 95% CI: 1.1–3.1).

Conclusions—We found no association between obesity and D&E complications. Our findings are consistent with previous studies demonstrating that later gestational duration is associated with an increased risk of complications. Obesity may not warrant referral to a high-risk abortion center, particularly because referral-associated delay might increase the risk of complications.

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Introduction

Approximately 140,000 second-trimester abortions occur each year in the US,[1] most by dilation and evacuation (D&E).[2] The majority occur in freestanding clinics and many of those clinics restrict services to women without known risk factors for complication such as advanced gestation or prior cesarean delivery.[3–8] While obesity (body mass index [BMI] ≥30 kg/m^2) is a known risk factor for complications of delivery,[9–11] its association with abortion complication is unclear. Neither of the two prior studies investigating obesity and complication found evidence of a statistically significant association, however one failed to control for gestational duration,[12] while the other was underpowered to detect a difference.[13]

One-third of reproductive-aged women in the US are obese.[14] Obese women report more unmet family planning needs and more commonly find clinics unprepared to provide reproductive health care due to their weight.[15] Three abortion clinics in northern California routinely refer women who exceed their BMI cutoff, with cutoffs that differ by clinic and provider. It is our clinical experience that obese women presenting to our clinic have often been turned away from another clinic because of their weight. In addition, they are at higher risk for late recognition of pregnancy, and delays in seeking abortion.[7,8]

Limiting access to abortion services based on a BMI cutoff likely leads to referral-associated delay in care for obese women. The aim of this study was to evaluate whether obesity is an independent risk factor for complication after D&E abortion and therefore if obesity warrants referral.

Materials and Methods

We conducted a retrospective cohort study of all D&E abortions done up to 24 weeks of gestation at San Francisco General Hospital's Women's Options Center between February 2009 and April 2013. Our clinic is one of the largest providers of D&Es with over 1,100 D&Es done each year.

Patients presenting for D&E are seen for two-day appointments with counseling,[16] history and physical, consent and osmotic dilator placement occurring on the first day and the D&E procedure the next day. Most patients receive anesthesiologist-administered deep sedation or nurse-administered moderate sedation. Patients receive antibiotic prophylaxis[17] and are offered immediate initiation of all forms of contraception.[18] We routinely use ultrasound guidance and D&Es are done by attending physicians, Family Planning fellows and third-year obstetrics and gynecology residents. We monitor patients in the recovery room for a minimum of 90 minutes before discharge.

Our primary outcome was any complication, and we defined complications before data abstraction as cervical laceration, hemorrhage, uterine atony, anesthesia complications, uterine perforation, disseminated intravascular coagulation (DIC), and retained products of conception. Because there is no accepted definition of hemorrhage, we defined it two ways: (1) patients with *estimated blood loss* (EBL) ≥500ml, and/or (2) *clinical hemorrhage* defined as bleeding requiring clinical intervention, including (a) three or more doses of

uterotonic medications, (b) intrauterine balloon tamponade, (c) reaspiration for bleeding, (d) blood transfusion or (e) any additional surgery. Atony was defined as the word atony used in the operative note plus an intervention for bleeding (administration of two or more doses of uterotonic medication, or an intervention for bleeding listed above). Cervical laceration was defined as laceration requiring suture repair. Major complications included transfusion, uterine artery embolization, additional surgery or admission.

We initially identified complications in our cohort using a prospectively collected database of all abortions at our center that also includes BMI, medical history, and demographic, pregnancy and cervical preparation information. We reviewed medical records for each complication case and reclassified cases that did not meet criteria for complication as uncomplicated. We excluded participants from the primary analysis if we could not obtain the medical chart. For all complication cases, we abstracted data from medical charts about clinical management using REDCap, a web based, secure data collection program.[19] We selected a random sample of 360 D&Es (9.5%) initially identified as uncomplicated and reviewed medical records to ensure those cases were truly uncomplicated.

Our primary predictor was BMI, calculated as weight (kg) divided by height (m^2) and categorized according to the World Health Organization definition: underweight (BMI<18.5 kg/m^2), normal weight (≥18.5 and <25 kg/m^2), overweight (≥25 and <30 kg/m^2), obese class I (≥30 and <35 kg/m^2), class II (≥35 and <40 kg/m^2), and class III (≥40 kg/m^2).[20] We also analyzed BMI as a continuous, then dichotomous (<30 vs. ≥30 kg/m2) variable. Covariates included age, race/ethnicity, prior vaginal delivery, prior cesarean delivery, prior abortion, gestational duration, need for further dilation on the procedure day, and provider experience. We planned to evaluate possible interactions between (1) BMI and prior cesarean delivery, (2) BMI and gestational duration and (3) BMI and provider experience.

Our primary analysis was to estimate the adjusted odds of complication in obese versus non-obese women using logistic regression. We decided *a priori* to include age, ethnicity, prior cesarean delivery and gestational duration in logistic models as these factors have previously been shown to be associated with risk of complication.[4–7] We built models using stepwise forward selection with p≤0.05 criteria for inclusion. For continuous predictors, we evaluated the linearity assumption using quadratic terms, which had p>0.05 for all the primary results reported here. We performed statistical analyses using STATA IC 11.2 (STATA Corp., College Station, TX) and SAS version 9.2 (SAS Institute, Cary, NC).

Secondary analyses included evaluating BMI as a continuous, then dichotomous variable as a predictor of any complication and major complications. We performed sensitivity analyses for the primary analysis by excluding cases in which reaspiration was done immediately after the procedure while still in the procedure room or the only intervention was administration of three doses of uterotonic medication.

We followed STROBE guidelines[21] for cohort studies and this study was approved by the Committee on Human Research, University of California, San Francisco.

Results

Of the 4,534 D&Es done in the 51-month study period, 744 (16%) were coded as complicated prior to our review of medical records. We excluded 14 of the 744 cases because medical records were unavailable for review. Of the 730 medical charts we reviewed, 291 did not meet criteria for complication and we reclassified them as uncomplicated (Figure 1). Among the random sample of nearly 10% of the 3,790 uncomplicated cases (n=360) we reviewed, three (0.8%) met criteria for minor complication and we reclassified them, resulting in 442 complicated cases (9.8%). Women in this cohort had a mean age of 26.6 years old, were ethnically diverse and most had public insurance (Table 1). Over half of D&Es were done at 20 weeks of gestation or later. Mean BMI was 27.6 kg/m^2 and over one-quarter of women were obese. The median distance traveled was 40 miles (IQR, 14 to 97 miles), 25% traveled over 100 miles, and women at later gestations traveled farther than those at earlier gestations.

In unadjusted analyses, there was no association between BMI≥30 and risk of complication (OR 1.0, 95% CI: 0.8–1.3) (Table 2). Women with complications after D&E were older (median 26.5 vs. 25.4 years, p=0.08) and more likely to have had a vaginal delivery (OR 1.4, 95% CI: 1.2–1.7). Greater gestational duration was associated with increased odds of complication (OR 3.4, 95% CI: 2.7–4.2). While gestational duration was skewed toward higher gestations for complicated cases versus uncomplicated cases, BMI distribution did not differ in complicated vs. uncomplicated cases (Figure 2). Mechanically dilating the cervix at the time of procedure was associated with lower odds of complication (OR 0.5, 95% CI: 0.4–0.7). Finally, having a resident as the primary operator was associated with lower odds of complication (OR 0.8, 95% CI: 0.6–0.9).

The overall complication rate was 9.8% and the rate of major complications was 1.7%. The most common complications were clinical hemorrhage (6.6%), cervical laceration (3.8%), uterine atony (3.0%) and hemorrhage with EBL ≥500ml (2.3%). The most common interventions used to manage complications were administration of three or more doses of uterotonics (6.1%), uterine reaspiration for bleeding, pain or retained tissue (2.8%) and intrauterine balloon tamponade (2.6%). Forty-six of the 125 uterine reaspirations (37%) occurred within the initial procedure time and did not necessitate a return trip to the procedure room. Major complications requiring higher acuity interventions such as hospitalization, transfusion, uterine artery embolization, laparotomy and hysterectomy were rare, occurring in fewer than 2% of cases (n=78) (Table 3). Two cases required hysterectomy. The first was a patient at 21 weeks of gestation with three prior cesarean deliveries and likely placenta accreta in whom uterine artery embolization was unsuccessful. The second case was a patient at 19 weeks of gestation with three prior cesarean deliveries who presented five days post-abortion with perforation.

In our adjusted analyses of any complication, BMI was not a predictor of complication and there was no apparent trend with increasing BMI categories (Table 2). No association between BMI and any complication was seen when we treated BMI as a dichotomous variable (OR 1.0; 95% CI: 0.8–1.3) or continuous variable (OR 1.0 per 5-unit increase; 95% CI: 0.9–1.1). Each additional week of gestation (OR 1.3, 95% CI: 1.3–1.4), prior vaginal

delivery (OR 1.5, 95% CI: 1.2–1.9) and prior cesarean delivery (OR 1.8, 95% CI: 1.4–2.3) were significantly associated with D&E complications. No differences in significant predictors or effect sizes were seen when we excluded cases of clinical hemorrhage where the only criteria met for complication was three doses of uterotonic medication or a reaspiration immediately after the procedure. We observed no interaction between BMI and prior cesarean delivery, gestational duration, or provider experience.

In our adjusted analysis of major complications, BMI was not a predictor of major complication (Table 2). Only increasing gestational duration and prior cesarean delivery were associated with major complications. We observed no interaction associations.

Discussion

Our findings suggest that major complications of D&E are rare, and we found evidence against a substantial association between obesity and D&E complications after controlling for known risk factors. Consistent with other studies, we found that increasing gestational duration and prior cesarean delivery were independent predictors of D&E complications.[3,4,6,7] Although obesity is a risk factor for poor outcomes at the time of birth, including vaginal laceration, non-elective cesarean delivery, post-cesarean infection and complications of anesthesia,[9–11] limited prior research has failed to demonstrate that this risk extends to abortion.

One prior study demonstrated a trend toward longer procedure time, increased blood loss and perceived difficulty of the procedure among obese women; however, that study did not control for gestational duration or parity.[13] Another study found complications occur in 7.7% of obese versus 5.5% of non-obese women, however that difference that was not statistically significant and there was no association between BMI and complications after controlling for confounders.[12] Our study was significantly larger and controlled for all known risk factors previously established in the literature. Furthermore, the finding that increasing BMI was not associated with increasing odds of complication was robust in multiple sensitivity analyses.

In our study, major complications occurred in less than 2% of cases. Similarly, prior studies have reported that major complications occur in 0.4–2% of cases in the second trimester but are more likely with greater gestational duration and history of cesarean section.[3–6,22] Consistent with our findings, other studies have not demonstrated that the involvement of more highly trained clinicians affects rates of complication.[12,23] One explanation may be that trainees performed cases that were appropriate for their level. We did not find any association between race and risk of complications, although an association between African American race and abortion-related mortality previously has been demonstrated.[5]

We hypothesize two potential reasons for the higher percentage of overall complications we observed. First, the Women's Options Center cares for patients who are at higher risk for complications – women with prior cesarean deliveries and women at increased gestational duration. Nearly one-quarter had a prior cesarean delivery and over half presented at greater

than 20 weeks of gestation. Second, we purposely established broadly inclusive criteria for complication such as use of uterotonic medication.

There are several limitations to our study. First, it is possible that we did not identify all complications for two reasons: (1) we may have misclassified complications within our sample although our screening suggests that our misclassification rate was less than 1%, and (2) some patients may have received care for a complication at an outside institution without our knowledge. Second, our findings may not be generalizable to all abortion settings due to differences in population, provider experience, or protocols and resources in place to manage complications should they arise. Finally, our ability to make conclusions about odds of major complications and complications in women with BMI over 40 is limited because of wide confidence intervals that extend to include significant increases in odds of complication. However, the clinic draws from a wide geographical area of California that is ethnically diverse, such that it approximates a population-based sample, and the relatively large proportion of women between 20 and 24 weeks of gestation reduces the likelihood that we failed to detect interactions between BMI, gestational duration and complications, especially at greater gestational duration.

Limited access to abortion consistently has been shown to be one of the most serious health threats for women seeking abortion.[24] By some estimates, there is likely to be a 130% increase in severe obesity prevalence by 2020.[25] These estimates underscore the necessity of ensuring that all women have equal access to timely abortion near their home, regardless of their weight. Although it should not be assumed that our results are generalizable to all practice settings, we believe that abortion clinics and providers in the community should be supported in providing care to obese women. Partnering with abortion clinics to ensure they have the proper equipment and training to care for obese women may be an effective strategy to promote earlier access to abortion.[15] This strategy may decrease risk of complications that occur due to referral-associated delays in care for obese women who are already at higher risk of delay in recognizing pregnancy and seeking abortion [5].[7,8]

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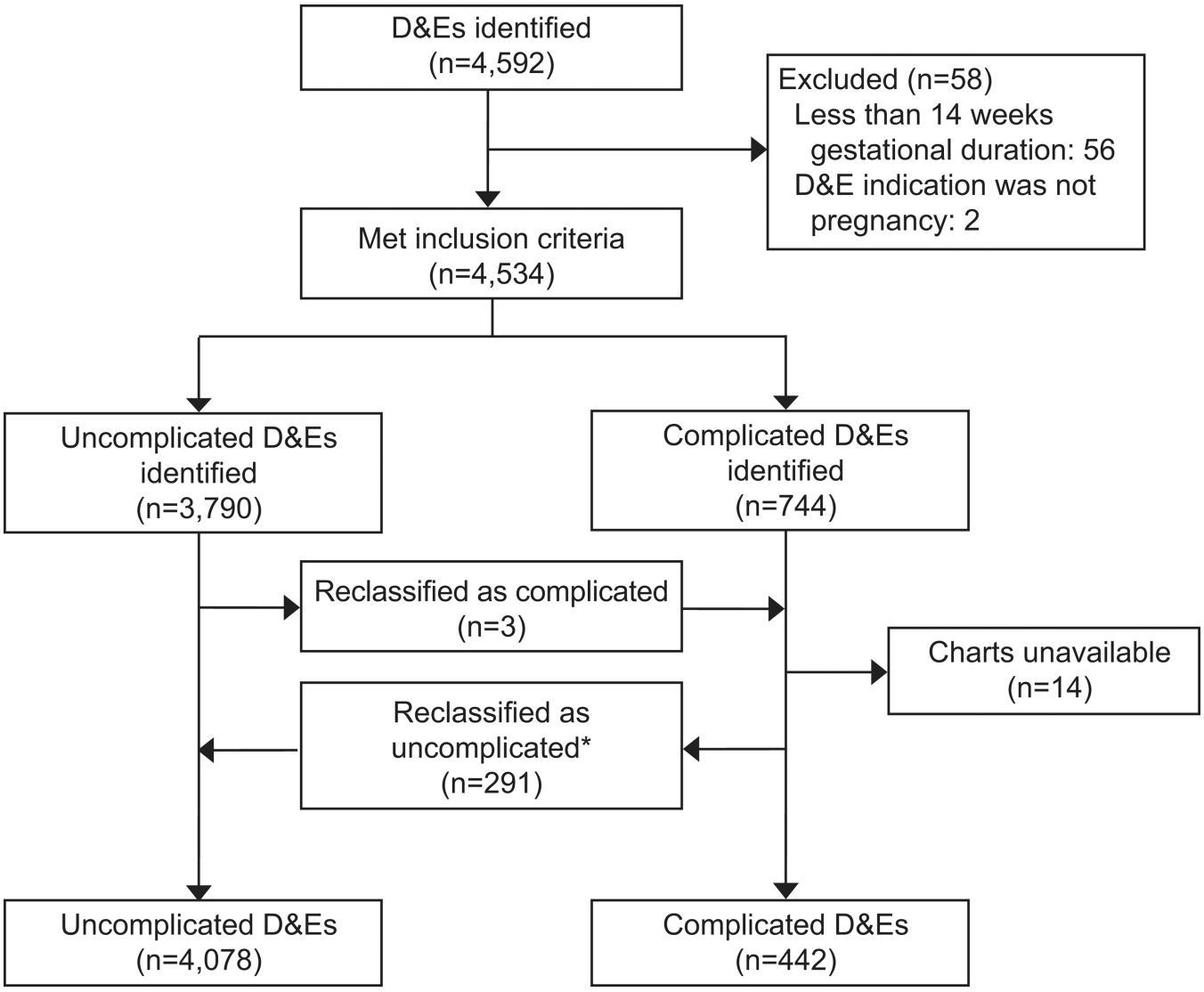

Figure 1.

Identification of cohorts of complicated and uncomplicated dilation and evacuations for analysis. D&E, dilation and evacuation. *Women who did not meet predetermined study criteria for complication upon chart review.

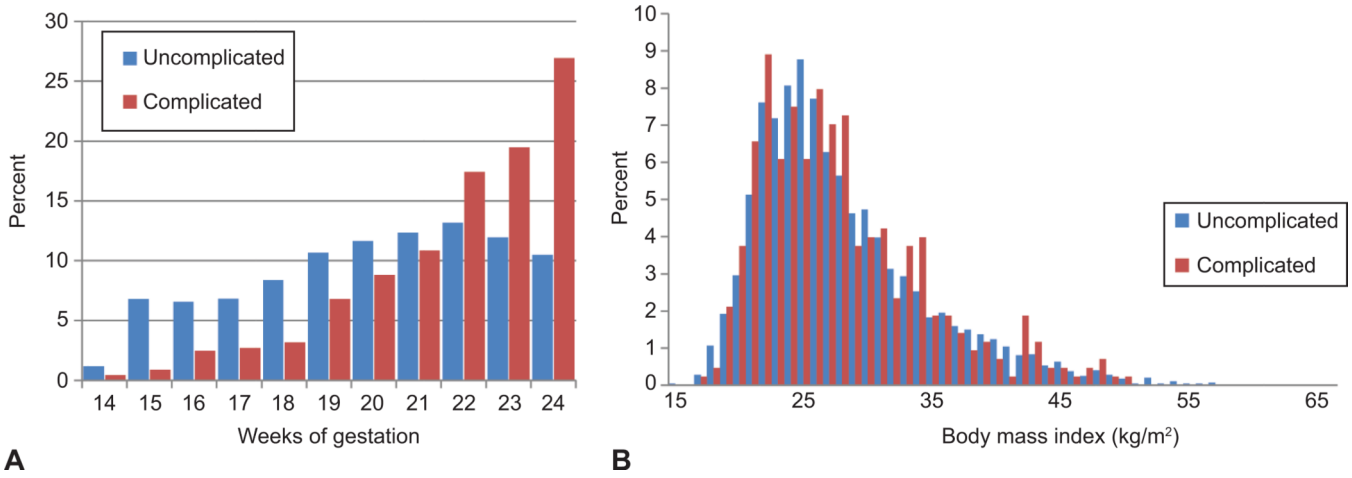

Figure 2.

Distribution of weeks of gestation (**A**) and body mass index (**B**) among uncomplicated and complicated cases.

Table 1

Characteristics of women undergoing dilation & evacuation

Characteristic	Total (4,520) N (%)	Complicated (442) N (%)	Uncomplicated (4,078) N (%)	p-value [a]
Age (years) [b,c]	26.6 (6.8)	26.5 (6.8)	27.1 (6.9)	0.08
Ethnicity				
African American	1,288 (28.5)	111 (25.1)	1,117 (28.9)	
White	1,250 (27.7)	112 (25.3)	1,138 (27.9)	
Hispanic or Latino	1,212 (26.8)	132 (29.9)	1,080 (26.5)	
Asian	448 (9.9)	57 (12.9)	391 (9.6)	
Pacific Islander or Native Hawaiian	85 (1.9)	12 (2.7)	73 (1.8)	
Native American or Eskimo	45 (1.0)	0 (0)	45 (1.1)	
Other or unknown	192 (4.3)	18 (4.1)	174 (4.3)	0.01
Payment type				
State insurance	3,814 (84.5)	367 (83.3)	3,447 (84.5)	
Private insurance	348 (7.7)	30 (6.8)	318 (7.8)	
Self-pay	282 (6.2)	40 (9.1)	242 (5.9)	
Medicare	72 (1.6)	4 (0.9)	68 (1.7)	
Unknown	4 (0.1)	1 (0.2)	3 (0.1)	0.053
Prior vaginal deliveries				
0	2,202 (48.7)	181 (40.9)	2,021 (49.6)	
1	1,105 (24.5)	112 (25.3)	993 (24.3)	
2	647 (14.3)	75 (17.0)	572 (14.0)	
3+	563 (12.5)	71 (16.0)	492 (12.1)	
Unknown	3(0.1)	0 (0)	3(0.1)	<0.001
Prior cesarean deliveries				
0	3,542 (78.4)	333 (75.3)	3,209 (78.7)	
1	598 (13.2)	61 (13.8)	547 (13.2)	
2+	380 (8.4)	48 (10.9)	332 (8.1)	0.12
Prior abortion	2,400 (53.1)	231 (52.6)	2,169 (53.2)	0.80
Gestational duration in weeks [b]	19.8 (2.8)	21.3 (2.2)	19.6 (2.8)	<0.001
Gestational duration categories				
14^0 to 15^6	573 (12.7)	14 (3.2)	559 (13.7)	
16^0 to 17^6	612 (13.5)	28 (6.3)	584 (14.3)	
18^0 to 19^6	952 (21.1)	59 (13.4)	893 (21.9)	
20^0 to 21^6	1,149 (25.4)	126 (28.5)	1,023 (25.1)	
22^0 to 24^0	1,234 (27.3)	215 (48.6)	1, 019 (25.0)	<0.001

Characteristic	Total (4,520) N (%)	Complicated (442) N (%)	Uncomplicated (4,078) N (%)	p-value [a]
Body Mass Index (BMI, kg/m^2) [b,d]	27.6 (6.7)	27.4 (6.4)	27.6 (6.7)	0.56
BMI (dichotomous)[d]				
BMI < 30	3,159 (71.9)	308 (71.8)	2851 (71.9)	
BMI ≥ 30	1,234 (28.1)	121 (28.2)	1113 (28.1)	
Unkown	127 (2.8)	13 (2.9)	114 (2.8)	0.96
BMI WHO Categories[d]				
Underweight	96 (2.2)	10 (2.3)	86 (2.2)	
Normal weight	1,789 (40.7)	170 (39.6)	1619 (40.8)	
BMI ≥25 and < 30	1,274 (29.0)	128 (29.8)	1146 (28.9)	
BMI ≥30 and < 35	639 (14.5)	69 (16.1)	570 (14.4)	
BMI ≥35 and < 40	328 (7.5)	26 (6.1)	302 (7.6)	
BMI ≥ 40	267 (6.1)	26 (6.1)	240 (6.1)	0.80
Additional cervical dilation during procedure	663 (14.7)	37 (8.4)	626 (15.4)	<0.001
Primary operator [e]				
Attending	1,781 (39.4)	199 (45.0)	1582 (38.8)	
Family planning fellow	955 (21.1)	89 (20.1)	866 (21.3)	
Third Year Resident	1,781 (39.4)	154 (34.8)	1627 (39.9)	0.03
Procedure duration, minutes [b,f]	13.2 (7.5)	16.4 (8.9)	12.8 (7.2)	<0.001

[a] P-values were calculated using a t-test for continuous variables and chi-squared test for categorical variables as appropriate.

[b] Mean (SD), not N (%)

[c] Total N= 4,519 (1 missing value)

[d] Total N= 4,393 (127 missing values)

[e] Total N= 4,517 (3 missing values)

[f] Total N= 4,492 (28 missing values)

Table 2

Unadjusted and adjusted odds of complication after dilation and evacuation

Characteristic [a]	Unadjusted [b]	Multivariate Logistic Regression	
	All Complications	All Complications [c]	Major Complications [d]
	OR[e] (95% CI[f])	OR (95% CI)	OR (95% CI)
Age per 10 years	1.1 (1.0, 1.3)	1.0 (0.9, 1.2)	1.3 (0.9, 1.8)
Ethnicity			
White	*reference*	*reference*	*reference*
Non-White	1.1 (0.9, 1.4)	1.2 (1.0, 1.5)	1.0 (0.6, 1.7)
Prior vaginal delivery			
No	*reference*	*reference*	*n/a*
Yes	1.4 (1.2, 1.7)	1.5 (1.2, 1.9)	
Prior abortion			
No	*reference*	*n/a*	*n/a*
Yes	1.0 (0.8, 1.2)		
Prior cesarean delivery			
None	*reference*	*reference*	*reference*
One or more	1.2 (1.0, 1.5)	1.8 (1.4, 2.3)	1.8 (1.1, 3.1)
Gestational duration			
< 20 weeks	*reference*		
≥ 20 weeks	3.4 (2.7, 4.2)		
Additional week of gestation	1.3 (1.3, 1.4)	1.3 (1.3, 1.4)	1.3 (1.2, 1.4)
Body Mass Index (BMI) categories (kg/m^2)			
Normal	*reference*	*reference*	*reference*
Underweight	1.0 (0.5 2.1)	1.2 (0.6, 2.7)	0.9 (0.1, 6.7)
BMI 25–30	1.0 (0.8, 1.4)	0.9 (0.7, 1.2)	0.9 (0.5, 1.6)
BMI 30–35	1.2 (0.9, 1.6)	1.0 (0.7, 1.4)	1.1 (0.6, 2.1)
BMI 35–40	0.8 (0.5, 1.3)	0.7 (0.5, 1.2)	0.5 (0.2, 1.7)
BMI ≥40	1.0 (0.7, 1.6)	1.2 (0.8, 2.0)	1.5 (0.6, 3.8)
BMI per 5-point increase	1.0 (0.9, 1.1)	*n/a*	*n/a*
BMI, dichotomous			
BMI <30	*Reference*	*n/a*	*n/a*
BMI ≥30	1.0 (0.8, 1.3)		
Received mechanical dilation at time of procedure			
No	*reference*	*n/a*	*n/a*

Characteristic [a]	Unadjusted [b]	Multivariate Logistic Regression	
	All Complications	All Complications [c]	Major Complications [d]
	OR[e] (95% CI[f])	OR (95% CI)	OR (95% CI)
Yes	0.5 (0.4, 0.7)		
Primary operator			
Attending	*Reference*	*n/a*	*n/a*
Fellow	0.8 (0.6, 1.1)		
Resident	0.8 (0.6, 0.9)		

[a] Missing values for the below characteristics are as noted in Table.1.

[b] Univariate logistic regression was used to calculate odds ratios and confidences intervals for the unadjusted analysis.

[c] Age, ethnicity, prior vaginal delivery, prior cesarean delivery, and gestational duration were adjusted for in determining the effect of BMI. N= 4,293 after deletion of observations with missing values.

[d] Age, ethnicity, prior cesarean delivery, and gestational duration were adjusted for in determining the effect of BMI. N= 4,308 after deletion of observations with missing values.

[e] OR= odds ratio

[f] CI= confidence interval

[*] n/a - indicates that these variables did not meet inclusion criteria for inclusion in the model and were not included *a priori.* Models were built using stepwise forward selection with p≤0.05 criteria for inclusion. Age, ethnicity, prior cesarean delivery and gestational duration were included *a priori*

Table 3

Incidence of specific complications & interventions for women undergoing dilation and evacuation by body mass index (kg/m^2) (BMI)

Complication	N (%)	BMI < 30	BMI ≥ 30	p-value [a]
Total [b]	4,520	3,159	1,234	
All complications [c]	442 (9.8)	308 (9.8)	121 (9.8)	0.96
Major complication [d]	78 (1.7)	52 (1.7)	22 (1.8)	0.75
Individual complications [e]				
Cervical laceration	173 (3.8)	132 (4.2)	37 (3)	0.07
Atony	137 (3.0)	94 (3.0)	39 (3.2)	0.75
Hemorrhage by clinical criteria	299 (6.6)	206 (6.5)	86 (7.0)	0.59
Hemorrhage by estimated blood loss ≥500cc	105 (2.3)	70 (2.2)	30 (2.4)	0.67
Retained products of conception	10 (0.2)	10 (0.3)	0 (0)	0.07
Uterine perforation	3 (0.1)	2 (0.1)	1 (0.1)	1.0
Disseminated intravascular coagulation	10 (0.2)	6 (0.2)	2 (0.2)	1.0
Other [f]	12 (0.3)	6 (0.2)	4 (0.4)	0.48
Intervention				
Administration of ≥3 uterotonic medications	278 (6.2)	192 (6.1)	79 (6.4)	0.69
Reaspiration [e]	125 (2.8)	90 (2.9)	32 (2.6)	0.64
Within initial procedure time	46 (1.0)	33 (1.0)	13 (1.0)	0.74
Returned to procedure room	79 (1.8)	57 (1.8)	19 (1.5)	0.80
For bleeding	114 (2.5)	82 (2.6)	29 (2.4)	0.64
For RPOC	10 (0.2)	10 (0.3)	0 (0)	0.07
For pain	4 (0.1)	2 (0.1)	2 (0.2)	0.32
Intrauterine balloon	119 (2.6)	84 (2.7)	32 (2.6)	0.91
Hospitalization	73 (1.6)	48 (1.5)	21 (1.7)	0.66
Transfusion	38 (0.8)	26 (0.8)	9 (0.7)	0.75
Uterine artery embolization	22 (0.5)	14 (0.4)	4 (0.4)	0.86
Laparoscopy or laparotomy	5 (0.1)	3 (0.1)	2 (0.2)	0.62
Hysterectomy	2 (0.04)	1 (0.03)	1 (0.1)	0.51

[a] P-values were calculated using chi-square test or Fisher's exact test for n<5 as appropriate, comparing groups BMI<30 to BMI≥30

[b] In total there are 127 cases with missing BMI data

[c] 13 cases with complication are missing BMI data, of which 4 are major complications

[d] Major complications are those requiring admission, transfusion or major surgery.

[e] Indicates that sub-categories are not mutually exclusive

[f] 6 cases of post-abortion endometritis, 2 cases of labial laceration requiring repair, 1 case of unintentional induction of labor with dilator placement requiring urgent D&E, 1 case of dilator misplacement requiring replacement, 1 case of post-operative pain requiring reaspiration, and 1 case of a post-operative infarcted leiomyoma requiring myomectomy.