

Manual Vacuum Aspiration: Early Detection of Products of Conception

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Abstract

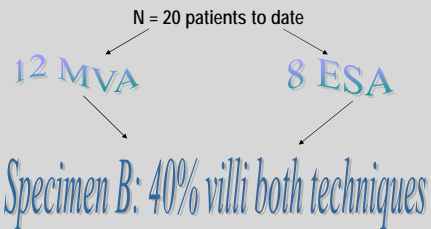
Objective #1: To compare the occurrence of retained products of conception (POC) in the surgical treatment of early pregnancy with the Manual Vacuum Aspiration (MVA) versus the Electric Suction Aspiration (ESA).

Hypothesis: There is no difference in the rate of retained POCs when comparing MVA to ESA.

Objective #2: To determine if POCs may be identified at an earlier gestational age with MVA when compared to ESA.



Preliminary Results

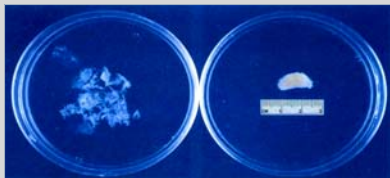


- The rate of subclinical retained products of POC is identical as hypothesized
- Data not sufficient to address Objective #2

Introduction

In 2004, Goldberg et al. Studied complication rates between MVA and EVA : "Significantly more re-aspirations for inability to accurately identify the pregnancy occurred in the electric group"

Products of Conception (POC)



Electric Suction Machine

MVA Aspirator

Creinin and Edwards 1997; Edwards and Carson 1997; Maclsaac and Darney 2000.

The safety and efficacy of MVA has already been well studied and established:

TABLE 2: Safety Data for Manual Aspiration (MVA) and Sharp Curettage (SC) for Induced Abortion

Author, Date, Country	Aspiration Method	N	Success			Major Complications per 100 Procedures		
			Rate (%)	95% CI	95% CI	Rate (%)	95% CI	95% CI
Hahn & Malmgren, 1984, Sweden	MVA	217	98	96-100	0	0	0	
Edwards & Carson, 1997, USA	MVA	100	98	95-100	0	0	0	
Creinin & Edwards, 1997, USA	MVA	100	98	95-100	0	0	0	
Maclsaac & Darney, 2000, USA	MVA	100	98	95-100	0	0	0	
Edwards & Carson, 1997, USA	SC	100	98	95-100	0	0	0	
Creinin & Edwards, 1997, USA	SC	100	98	95-100	0	0	0	
Maclsaac & Darney, 2000, USA	SC	100	98	95-100	0	0	0	

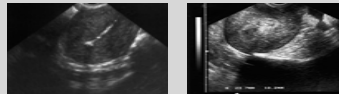
TABLE 1: Effectiveness Data for Manual Vacuum Aspiration (MVA)

Author, Date, Country	Aspiration Method	Success Rate (%)	95% CI
Hahn & Malmgren, 1984, Sweden	MVA	98	96-100
Edwards & Carson, 1997, USA	MVA	98	95-100
Creinin & Edwards, 1997, USA	MVA	98	95-100
Maclsaac & Darney, 2000, USA	MVA	98	95-100
Edwards & Carson, 1997, USA	SC	98	95-100
Creinin & Edwards, 1997, USA	SC	98	95-100
Maclsaac & Darney, 2000, USA	SC	98	95-100

Discussion

We do not know the implications for subclinical retained POC:

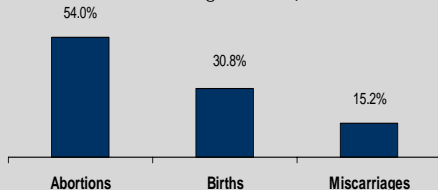
- Diagnosis is made by ultrasonographic EM > 1.3cm
- The rate of symptomatic RPOC ~5% : pain, bleeding, fever



Role of transvaginal sonography in the diagnosis of retained products of conception
 Obstetrics and Gynecology, Volume 277, Number 2, February 2008.

- Issues in need of further clarification:
- Future fertility i.e. rates intrauterine synechiae
 - Pathologic dx of molar pregnancies, r/o ectopic

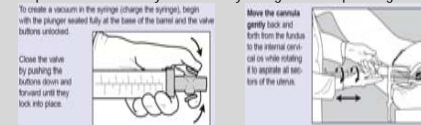
Potentially far-reaching findings:
 % of Unintended Pregnancies (3 million annually)



- Gestational age = strongest risk factor for abortion-related mortality
- Lowest risk of death: abortions at <8 weeks
- Risk of death increases by 38% for each additional week of pregnancy
- Up to 87% of deaths in women undergoing abortions after 8 weeks may have been avoided if the abortion had been performed before 8 weeks

Methods

- Patients (>18yrs) less than 9 wks pregnant participated in a blinded randomized controlled study
- Group I subjects were treated with MVA. Group II received an ESA
- POCs from the "completed" procedure (when the physician clinically judged the uterine cavity to be empty) were sent to pathology (Specimen A).
- At the end of the procedure in both groups a final pass was made with the electronic suction machine to determine if there were any retained POCs (Specimen B).
- Both specimens were analyzed for villi by a single blinded pathologist



Conclusion

Known advantages of MVA over ESA are many:

- Equally Safe and Effective
- Portable
- Low Cost
- Reusable
- Quiet

If with further data collection, our second hypothesis proves to be true: that POCs are more easily detectable at an earlier gestational age with MVA over ESA, the expense incurred by the treatment of early pregnancy termination (both monetarily and to women's health) could be greatly reduced.