Amniotic Fluid Index or Deepest Vertical Pocket?

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Amniotic Fluid Index or Deepest Vertical Pocket? 

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Abstract:
INTRODUCTION: A 2009 Cochrane review found that amniotic fluid index (AFI) use increases the rates of oligohydramnios and labor induction without improvement of perinatal outcomes. We thus sought to determine the use of either AFI or DVP among Society of Maternal Fetal Medicine (SMFM) members.

METHODS: Registered SMFM members were contacted via mail 9/2012 and 2/2013 and asked to participate in a web-based survey addressing the use of AFI and DVP.

RESULTS: 212 members participated (9.9%). DVP was considered the most accurate method of evaluating amniotic fluid in the second trimester regardless of years since fellowship (<10 years 61.8% vs. >10 years 68.9%, p=0.18) or practice type (academic 42.5% vs. non-academic 47.1%, p=0.36). AFI was considered the most accurate method of evaluating fluid in the third trimester regardless of years since fellowship (<10 years 60.3% vs. >10 years 53.9%, p=0.59) or practice type (academic 62.7% vs. non-academic 73.9%, p=0.50). Most respondents thought antepartum interventions were more common when fluid is documented as low by AFI (graphs). 111 respondents (52.3%) replied oligohydramnios is overdiagnosed when using AFI vs. DVP.

CONCLUSIONS: Variations in evaluating amniotic fluid persist, suggesting the need for consensus in the diagnosis and management of low amniotic fluid in singleton gestations.

Objectives:
A 2009 Cochrane report suggested that the single DVP measurement in the assessment of amniotic fluid volume seems a better choice than AFI since data suggest AFI increases the rate of diagnosis of oligohydramnios and the rate of induction of labor without improvement of perinatal outcomes. 

The Cochrane review evaluated 5 randomized controlled trials involving women with a singleton pregnancy, whether low or high risk, undergoing amniotic fluid measurement via ultrason as part of antenatal testing that compared AFI and the single DVP measurement. Given the results of this review, we sought to determine the current use of either AFI or DVP among Society of Maternal Fetal Medicine (SMFM) members.

Results:
212 members participated for a 9.9% response rate. 71% respondents were male. 84 additional responses were obtained after the second mailing.

Demographics of Survey Respondents (%), n
- Years since completion of fellowship in maternal Fetal Medicine
- >10 years: 60.3% (128)
- ≤5 years: 23.7% (50)
- 6-10 years: 10.0% (21)

- Type of practice
- Private practice with inpatient / outpatient consultations and obstetric care: 12.4% (26)
- Community hospital, with academic affiliation: 10.0% (21)
- Community hospital, without academic affiliation: 6.7% (14)

- Number of deliveries performed at your institution per year
- >3000 deliveries: 94.1% (133)
- 1000-3000 deliveries: 4.2% (6)
- <1000 deliveries: 3.7% (3)

- Average number of ultrasounds performed in your institution per year
- >5000 ultrasounds: 51.8% (111)
- 3000-5000 ultrasounds: 37.9% (84)
- <1000: 5000 ultrasounds: 17.2% (39)

- AFI certified practice: 75.5% (187)
- Average number of physicians in the practice - 32

Survey Results:
- DVP was considered the most accurate method of evaluating amniotic fluid in the second trimester regardless of years since fellowship (<10 years 61.8% vs. >10 years 68.9%, p=0.18) or practice type (academic 42.5% vs. non-academic 47.1%, p=0.36).
- AFI was considered the most accurate method of evaluating fluid in the third trimester regardless of years since fellowship (<10 years 60.3% vs. >10 years 53.9%, p=0.59) or practice type (academic 62.7% vs. non-academic 73.9%, p=0.50).
- Most respondents thought antepartum interventions were more common when fluid is documented as low by AFI (graphs).
- When asked which intrapartum interventions were more common when fluid was documented as low, most respondents said none (51%, n=101) followed by cesarean delivery (52.8%, n=65).

- Of those who use AFI, most singleton pregnancies with low fluid between 34-36 weeks gestation were managed simultaneously with antenatal testing (90.4%, n=151), fetal growth evaluation (76.0%, n=127) and repeat AFI in 1-2 days (71.9%, n=120).
- Of those who use AFI, most singleton pregnancies with low fluid > 37 weeks are evaluated for delivery (80.0%, n=117).
- Of those who use DVP, most singleton pregnancies with low fluid between 34-36 weeks gestation were managed simultaneously with antenatal testing (60.9%, n=112), fetal growth evaluation (48.9%, n=90) and repeat AFI in 1-2 days (46.2%, n=65).
- Of those who use DVP, most singleton pregnancies with low fluid > 37 weeks are evaluated for delivery (68.6%, n=137).

- Of those who use DVP, most singleton pregnancies with low fluid > 37 weeks gestation were considered the most accurate method of evaluating amniotic fluid in the second trimester (41.7%, n=99).

- Of those who use AFI, 30.6% thought more data favoring DVP is needed.

Conclusion:
Variations in evaluating amniotic fluid persist among surveyed members of the Society of Maternal Fetal Medicine despite the Cochrane review findings. Our data suggest that in the absence of a consistent diagnosis and management of amnioncritis gestations the concern for management and decision-making which may vary depending on the method used to measure amniotic fluid in singleton gestations.

Reference: