

UOG Journal Club: May 2015

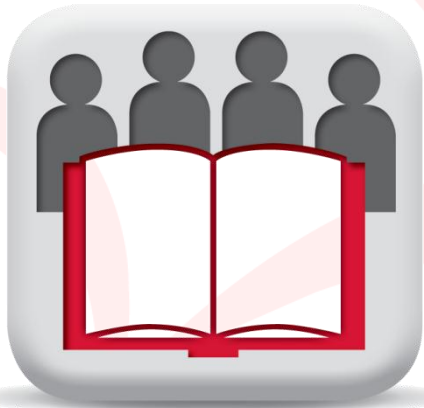
妇产科超声杂志期刊俱乐部：2015年5月

Systematic review of accuracy of ultrasound in the diagnosis of vasa previa

超声诊断血管前置准确性的系统评价

L. Ruiter, N. Kok, J. Limpens, J.B. Derks, I.M. de Graaf,
B.W.J. Mol and E. Pajkrt

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(UOG Editor for Trainees)

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Ruiter et al., UOG 2015

- Vasa previa occurs when fetal blood vessels lie outside of the chorionic plate in close proximity to the internal cervical os
- 血管前置发生在胎膜血管位于绒毛膜板之外接近宫颈内口。
- Prevalence of 1:1200 to 1:5000 pregnancies
- 发生率为1/1200-5000次妊娠。
- Complications include compression of the vessels by the presenting fetal part and spontaneous vessel rupture which could lead to fetal exsanguination
- 并发症包括在分娩时胎先露压迫血管和自发性血管破裂，可导致胎儿失血。
- Prenatal recognition enables elective delivery by Cesarean section, thereby avoiding potential fetal demise or neonatal morbidity
- 产前识别可以选择剖宫产分娩,从而避免潜在的胎儿死亡或新生儿患病。
- The accuracy of ultrasound detection of vasa previa by routine evaluation of the umbilical cord insertion site remains unknown
- 超声通过常规评估脐带插入点发现血管前置的准确性仍然未知。

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Objective
目的

To perform a systematic review to investigate the accuracy of ultrasound in the diagnosis of vasa previa

系统回顾探讨超声诊断血管前置的准确性

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Methodology 方法

Systematic Review 系统回顾

Search Strategy: MEDLINE, EMBASE, The Cochrane Library, PubMed, ongoing Trial registers

检索策略: MEDLINE, EMBASE, The Cochrane Library, PubMed, 进行中的试验

Eligible Studies: Observational studies which described ultrasound and its accuracy in the prenatal diagnosis of vasa previa

符合条件的研究: 观察性研究, 这些研究都描述了超声和产前诊断血管前置的准确性

Index Test: An ultrasound evaluation performed during the second trimester with the specific aim of detecting vasa previa

试验指标: 超声波在妊娠中期针对性检测前置血管来进行评估

Reference Standard: Confirmation of vasa previa after delivery by macroscopic observation of the placenta and umbilical cord insertion site by the caregiver

参考标准: 在分娩后通过肉眼观察胎盘和脐带插入点证实血管前置

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Methodology 方法论

Systematic Review 系统的回顾

Outcomes: 结果:

- Prenatal detection rates of vasa previa 血管前置的产前检出率

Statistical Analysis: 统计分析:

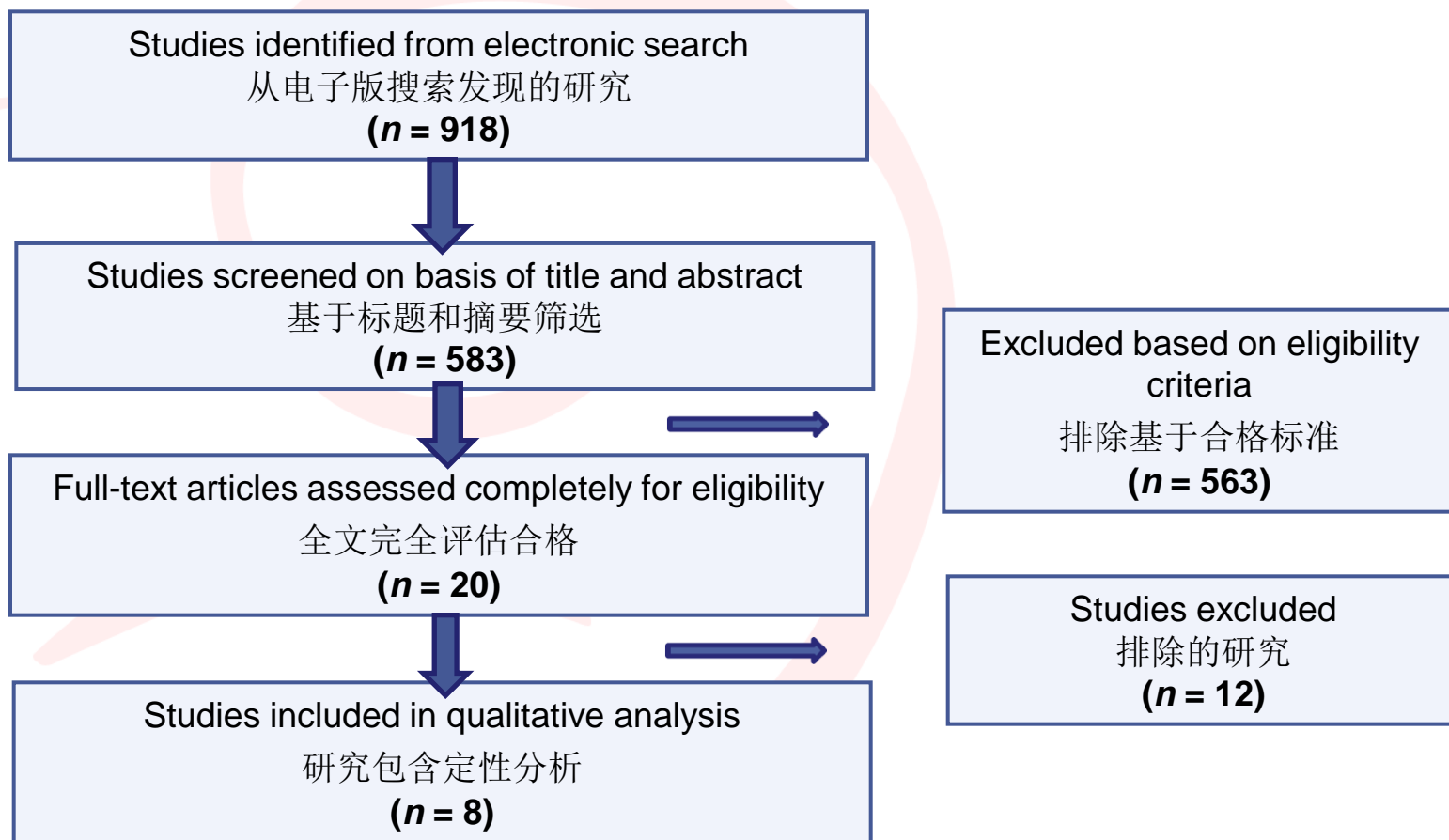
- Evaluation of methodologic quality of included studies (QUADAS-2)
- 包括研究的方法学质量评价 (QUADAS-2)
- Construction of 2×2 tables to calculate sensitivity, specificity and positive and negative predictive values
- 建立 2×2 表来计算敏感性、特异性、阳性和阴性预测值
- Random-effects model planned for statistical pooling of data
- 随机效应模型设计统计的数据池
- Heterogeneity assessment using Higgin's I^2
- 使用 Higgin's I^2 的非均质性评价
- Summary ROC curves applied to assess accuracy of ultrasound
- SROC 曲线应用于评估超声检查的准确性

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Results结果



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Results结果

- Of **442 633** total patients, there were **138** cases of vasa previa
- 在442 633名患者中,有138例血管前置
- Transvaginal ultrasound was the primary method used to diagnose vasa previa in four of the eight studies
- 8个研究中有4个使用经阴道超声检查为主要方法用于诊断血管前置
- Gestational age at diagnosis ranged from 18+0 to 26+6 weeks
- 诊断孕周介于18 + 0 周至26 + 6周
- All studies reported the use of color or pulsed-wave Doppler for the diagnosis of vasa previa
- 所有研究报道了血流信号或脉冲波多普勒诊断血管前置的作用

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Results结果

Study研究	Cases of vasa previa 血管前置的病例	Prenatal Diagnosis 产前诊断	Diagnosed after delivery 分娩后诊断
<i>Baulies et al.</i>	9	9 (100)	—
<i>Bronsteen et al.</i>	60	56 (93)	4 (7)
<i>Catanzarite et al.</i>	10	10 (100)	—
<i>Hasegawa et al.</i>	10	10 (100)	—
<i>Kanda et al.</i>	10	9 (90)	1 (10)
<i>Nomiyama et al.</i>	1	1 (100)	—
<i>Smorgick et al.</i>	19	10 (53)	9 (47)

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Results结果

- Statistical pooling of the predictive parameters of diagnostic accuracy could not be performed because of insufficient data owing to heterogeneity
- 因为异质性导致的数据不足，诊断准确性的预测参数统计池不能进行。
- Seven false-positive diagnoses were reported in total
- 总共七个假阳性诊断报告
- In the majority of undetected cases, the umbilical cord insertion site had not been evaluated or only transabdominal ultrasound had been performed
- 在大多数未被发现的病例中,没有评估脐带插入点或仅经腹部超声检查

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Conclusions 结论

- The accuracy of ultrasound detection of vasa previa is high when performed transvaginally and combined with color Doppler in the second trimester
- 在妊娠中期结合彩色多普勒，经阴道超声检测血管前置的准确性高。
- Median prenatal detection rate was 93% with a specificity ranging from 99–100%
- 产前检出率中位数为93%，特异性为99-100%。
- An increase in missed cases of vasa previa is seen when ultrasound evaluation does not involve color Doppler, is transabdominal and/or is performed only in third trimester
- 当不使用彩色多普勒超声评价，仅在妊娠晚期和/或经腹部超声检查，血管前置的误诊病例增加。
- Future studies are needed prior to making an informed decision on the effectiveness of either routine or targeted prenatal screening for vasa previa
- 对常规或者针对性产前筛查血管前置的有效性，未来的研究需要提前作出知情决策

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Strengths 优势

- Comprehensive and iterative search strategy
全面和重复搜索策略
- Inclusion of study quality assessment
质量评估的研究
- Postnatal confirmation of diagnosis
产后证实诊断
- Presents qualitative assessment of available literature in order to guide future studies on the topic
提出了可用文献的定性评估,以指导今后此领域的研究

Limitations 局限性

- Significant heterogeneity between studies precluded statistical pooling of results
研究之间明显的异质性妨碍统计池的结果
- Rare outcome with few relevant studies identified
一些相关研究确定的罕见结果
- No assessment of publication bias
没有发表偏倚的评估
- Unable to evaluate associated fetal/neonatal morbidity and mortality
无法评估相关胎儿或新生儿发病率和死亡率

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Discussion Points 讨论要点

- Should documentation of umbilical cord insertion site by transvaginal ultrasound be a routine component of the second-trimester anatomic survey?
• 经阴道超声检查脐带插入点应该作为一个中期妊娠结构检查的常规部分吗?
- What is the appropriate antenatal management of a patient with a prenatal diagnosis of vasa previa? What type of antenatal surveillance should be performed? When should delivery occur?
• 对产前诊断前置血管的病人，什么是适当的产前管理?应该执行什么类型的产前监测?何时分娩?
- Why did the authors choose not to statistically combine the results in a meta-analysis? What are the limitations of combining observational studies in a meta-analysis?
• 为什么作者选择不把结果统计学上合并到meta分析?meta分析中，结合观察性研究的局限性是什么?
- What would be the implications of a high false-positive rate of prenatal ultrasound diagnosis of vasa previa?
• 产前超声诊断血管前置的高假阳性率的含义是什么?
- Should all patients with prenatally-diagnosed vasa previa undergo elective Cesarean section to prevent hemorrhage of the fetal vessels?
• 是否所有产前诊断为血管前置的患者都应该进行选择性剖宫产来防止胎儿血管的出血?