

超声常规三切面与特殊切面法筛查唇腭裂胎儿的价值

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【摘要】目的:观察超声常规三切面与特殊切面法筛查唇腭裂胎儿的应用价值。**方法:**选取佛山市妇幼保健院6 000例孕妇, 对2 556例胎儿唇腭部予以单一切面法(对照组), 3 444例胎儿唇腭部予以超声常规三切面+特殊切面法(观察组), 以出生儿颜面部检查为“金标准”, 比较对照组与观察组检查结果灵敏度、特异度、准确性、阳性预测值、阴性预测值、漏诊率。**结果:**共47例(0.78%)唇腭裂;对照组20例(0.78%)唇腭裂, 观察组27例(0.78%)唇腭裂, 两组唇腭裂率比较无显著差异($P>0.05$);单一切面法灵敏度60.00%, 特异度99.88%, 准确性99.57%, 漏诊率40.00%, 阳性预测值80.00%, 阴性预测值99.69%, Kappa值0.68;超声常规三切面+特殊切面法灵敏度92.59%, 特异度100.00%, 准确性99.94%, 漏诊率7.41%, 阳性预测值100.00%, 阴性预测值99.94%, Kappa值0.96。观察组筛查灵敏度、准确性及阴性预测值均明显高于对照组($P<0.05$)。**结论:**超声常规三切面+特殊切面法可有效提高唇腭裂胎儿筛查准确性, 具有较高应用价值。

【关键词】胎儿;唇腭裂;超声检查;常规三切面;特殊切面

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Application value of conventional 3 sections and special cross section in the ultrasonic screening of cleft lip and palate in fetuses

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Abstract: Objective To investigate the application value of conventional 3 sections combined with special cross section in the ultrasound screening of fetal cleft lip and palate. **Methods** A total of 6 000 pregnant women in Foshan Women and Children Hospital were enrolled in the study. The lips and palates of 2 556 fetuses were examined by single section (control group), while the lips and palates of 3 444 fetuses were examined by conventional 3 sections and special cross section (observation group). With the facial examination of neonates as the golden standard, the sensitivity, specificity, accuracy, positive predictive value, negative predictive value and the rate of missed diagnosis were compared between control group and observation group. **Results** There were 47 cases (0.78%) with cleft lip and palate, with 20 cases (0.78%) in control group and 27 cases (0.78%) in observation group. There was no significant difference in the rate of cleft lip and palate between two groups ($P>0.05$). The sensitivity, specificity, accuracy, the rate of missed diagnosis, positive predictive value, negative predictive value and Kappa value in control group were 60.00%, 99.88%, 99.57%, 40.00%, 80.00%, 99.69% and 0.68, respectively, while those in observation group were 92.59%, 100.0%, 99.94%, 7.41%, 100.00%, 99.94% and 0.96, respectively. The sensitivity, accuracy and negative predictive value in observation group were significantly higher than those in the control group ($P<0.05$). **Conclusion** The conventional 3 sections combined with special cross section in ultrasonic examination can effectively improve the screening accuracy of fetal cleft lip and palate, with a higher application value.

Keywords: fetus; cleft lip and palate; ultrasound examination; conventional 3 sections; special cross section

前言

唇腭裂属于胎儿相对常见颜面部畸形, 类型主

要为唇裂、腭裂以及唇腭裂, 有调查显示唇腭裂居我国新生儿出生缺陷前5位^[1-3]。以往临床常用筛查方式为鼻唇冠状切面法, 但其检出率有待进一步提升^[4-5]。因为唇腭裂新生儿不能正常吸吮母乳与进水, 可对其成长发育造成严重影响, 增加家庭与社会负担, 同时畸形会随着患儿逐渐生长发育出现变化, 导致其社会交往时易产生一定心理障碍, 故准确筛

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查唇腭裂胎儿具有重要意义。有报道称超声常规三切面联合特殊切面法能够获得更准确的产前唇腭裂筛查结果^[6]。本文以6 000例孕妇为研究对象,探讨超声常规三切面联合特殊切面法对唇腭裂胎儿的筛查价值,以期为提高唇腭裂准确筛查提供一定指导。

1 资料与方法

1.1 临床资料

选取2016年1月1日至2018年12月31日期间佛山市妇幼保健院6 000例孕妇,纳入标准:(1)单胎妊娠;(2)产前接受胎儿唇腭裂筛查;(3)无妊娠合并症;(4)对研究知情,签署知情同意书。排除标准:(1)外院分娩难以随访出生情况;(2)双胞胎或多胎妊娠。其中2 556例使用单一切面法进行唇腭裂筛查,纳入对照组;3 444例胎儿唇腭部采取超声常规三切面+特殊切面法,纳入观察组。对照组年龄19~35岁,平均(25.3±2.7)岁;体质指数(BMI)18.76~25.18 kg/m²,平均(23.1±2.7)kg/m²;孕周19~34周,平均(24.4±4.5)周。观察组年龄18~36岁,平均(25.4±2.7)岁;BMI 18.80~25.23 kg/m²,平均(23.0±2.4) kg/m²;孕周18~36周,平均(24.3±4.5)周。两组孕妇临床一般资料比较无统计学意义($P>0.05$),具有可比性。

1.2 方法

选择美国 Voluson E8、Voluson730Expert 及韩国三星 WS80A 彩超诊断仪,设置探头频率3~5 MHz。对照组通过鼻唇冠状切面法(单一切面法)开展唇腭裂筛查。观察组予以超声常规三切面+特殊切面法,常规三切面主要包括颜面部正中矢状切面(图1)、上牙槽弓横切面(图2)与鼻唇冠状切面;特殊切面包括经下唇或下颌斜冠状切面(图3)、矢状切面,经梨状孔斜冠状切面,经面颊部斜横切面。观察组中颜面部正中矢状切面呈现腭中缝区相应强回声光带消失或上颌骨前突、通过上牙槽弓横平面呈现上牙槽“C”形曲线连续性中断、通过鼻唇冠状切面呈现上牙槽连续性中断,口腔与鼻腔相通。如果上述切面发现可疑胎儿唇腭裂,增加特殊切面予以进一步筛查:(1)硬腭裂、软腭裂直接征象所呈现有效切面:经下唇或下颌斜冠状切面、矢状切面,产生腭裂时硬腭、软腭回声具有连续性中断特点;(2)经梨状孔斜冠状切面观察胎儿硬腭强回声连续性,能通过此切面从鼻腔观察舌运动,明确舌在口腔与鼻腔所作往复运动;(3)经面颊部斜横切面观察患侧由于继发腭未能与鼻中隔融合导致鼻中隔下段呈条状强回声带显示。对每例胎儿按要求予以口唇部进行仔细检查并存图,结束超声检查后持续随访直至孕妇产后1周,新生儿出生后予以颜面部检查。



图1 颜面部正中矢状切面显示腭骨强回声带中断,提示继发腭硬裂

Fig.1 Interruption of strong-echo vocal cord of palate bone displayed in facial mid-sagittal section suggests secondary clefts in the hard palate

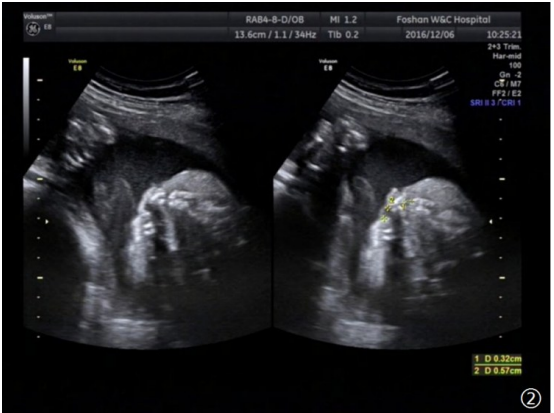


图2 上牙槽横切面显示左侧、右侧原发腭裂

Fig.2 Primary left and right cleft palate displayed in upper alveolar cross section

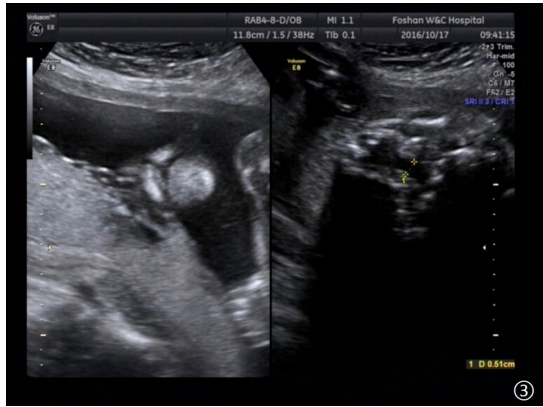


图3 经下颌斜冠状切面显示软腭裂

Fig.3 Clefts in the soft palate displayed in trans-mandibular oblique coronal section

1.3 观察指标

以出生儿颜面部检查为“金标准”,比较两组检查结果灵敏度、特异度、准确性、阳性预测值、阴性预测值、漏诊率。

1.4 统计学处理

采用SPSS19.0软件处理相关数据,计数资料表示为率(%),以 χ^2 或Fisher精确检验, $P<0.05$ 为差异有统计学意义。采取Kappa检验法行一致性分析,Kappa值 >0.4 为比较有一致性。

2 结果

2.1 出生儿颜面部检查结果

共47例(0.78%)唇腭裂。对照组20例(0.78%)唇腭裂,观察组27例(0.78%)唇腭裂,两组唇腭裂率比较无显著差异($P>0.05$)。

2.2 对照组与出生儿颜面部检查对照

单一切面法筛查唇腭裂灵敏度60.00%(12/20),特

异度99.88%(2 533/2 536),准确性99.57%(2 545/2 556),漏诊率40.00%(8/20),阳性预测值80.00%(12/15),阴性预测值99.69%(2 533/2 541);Kappa值0.68。

2.3 观察组与出生儿颜面部检查对照

超声常规三切面+特殊切面法筛查唇腭裂灵敏度92.59%(25/27),特异度100.00%(3 417/3 417),准确性99.94%(3 442/3 444),漏诊率7.41%(2/27),阳性预测值100.00%(25/25),阴性预测值99.94%(3 417/3 419);Kappa值0.96。

2.4 两组筛查结果比较

观察组筛查灵敏度、准确性及阴性预测值均显著高于对照组($P<0.05$,见表1)。

表1 两组筛查结果比较
Tab.1 Comparison of screening results between two groups

组别	灵敏度	特异度	准确性	阳性预测值	阴性预测值
观察组	92.59%(25/27)	100.00%(3 417/3 417)	99.94%(3 442/3 444)	100.00%(25/25)	99.94%(3 417/3 419)
对照组	60.00%(12/20)	99.88%(2 533/2 536)	99.57%(2 545/2 556)	80.00%(12/15)	99.69%(2 533/2 541)
χ^2 值	5.471	2.037	7.762	2.907	4.290
P值	0.019	0.154	0.005	0.088	0.038

3 讨论

本研究6 000例孕妇中,共47例(0.78%)出生儿为唇腭裂,说明胎儿唇腭裂发生率较高,这也与本院是佛山地区产前诊断中心、部分病例外院转诊过来有关。传统胎儿颜面部超声诊断一般选择单一鼻唇冠状切面予以筛查,该手段尽管在筛查胎儿唇裂方面具有一定价值,但在确诊腭裂方面存在一定局限性,通常难以判定胎儿唇裂是否伴随腭裂^[7-9]。采取常规三切面联合特殊切面筛查法时,若怀疑胎儿唇裂,利用矢状切面、冠状切面与横切面能够呈现胎儿唇部情况,如果胎儿超过两个正交切面呈现唇裂特征,则能够确诊胎儿唇裂(I度唇裂除外)^[10-12]。此外,能够通过颜面部正中矢状切面发现双侧唇腭裂;能够通过上牙槽弓横切面发现单侧唇腭裂、双侧唇腭裂及中央性唇腭裂;通过下唇或下颌向上进行扫查能够发现继发硬腭裂、软腭裂;通过梨状孔向下做斜冠状切面扫查,能将硬腭征象直接呈现出来^[13-16]。由于特殊切面在筛查腭裂时能够直接呈现腭及腭裂裂口,故其为显示胎儿上牙槽、硬腭或者硬腭裂直接征象相对较好方式,主要通过观察胎儿硬腭强回声线呈现的连续性,掌握腭裂直接征象,最终得以诊断^[17-18]。本研究中单一切面法筛查唇腭裂与“金标

准”对照发现Kappa值0.68,超声常规三切面+特殊切面法与“金标准”对照,Kappa值0.96,表明超声常规三切面+特殊切面法筛查唇腭裂与出生儿颜面部检查结果具有更高一致性。研究结果还显示,观察组筛查灵敏度、准确性及阴性预测值显著高于对照组,提示相较于单一切面法,超声常规三切面+特殊切面法可以更准确筛查胎儿唇腭裂。观察组漏诊率7.41%,显著低于对照组的漏诊率(40.00%),表明超声常规三切面+特殊切面法能够降低胎儿唇腭裂漏诊率。观察组依然出现2例漏诊单纯性腭裂,1例为II度腭裂,1例为I度腭裂。笔者对其原因进行分析:(1)单纯腭裂由于无原发性腭裂的裂口作为透声窗,诊断尤其困难;(2)对II度腭裂经下唇或下颌斜冠状切面显示硬腭回声中断裂口较小,后上方短小犁骨强回声未引起重视;(3)对I度腭裂(软腭裂)诊断缺乏经验,未排除舌头的干扰作用。当前,临床尚未完全确定唇腭裂致病因素,认为孕妇妊娠期出现分泌异常、病毒感染或者营养缺乏等均为胎儿唇腭裂主要诱因^[19]。为降低唇腭裂发生风险,孕妇妊娠期需要摄取各种营养,防止挑食,确保其有充分维生素与各种离子(钙、铁、磷)摄入^[20]。此外,还应该合理调整好情绪,利用听音乐等方式改善紧张精神状态,切勿服用抗惊厥药或安眠药,保持良好生活习惯,不吸

烟、不酗酒,同时避免接触放射线以及微波辐射等。

综上所述,临床筛查唇腭裂胎儿时,相较于单一切面法,超声常规三切面+特殊切面法可获得更准确筛查结果,对减少漏诊、提高筛查灵敏度具有重要意义。

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