Evaluating the Safety of Labour in Women With a Placental Edge 11 to 20 mm From the Internal Cervical Os

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Abstract

Objective: The purpose of this study was to evaluate pregnancy outcomes in a cohort of women with a placental edge between 11 and 20 mm from the internal cervical os, and to determine the likelihood of a successful vaginal delivery when trial of labour is attempted in these women.

Methods: We carried out a prospective observational study of women with singleton pregnancies and a placental edge between 11 and 20 mm from the internal cervical os (identified by transvaginal sonography) who underwent a trial of labour.

Results: Fourteen women with the above characteristics underwent a trial of labour during the study period. The mean interval (± SD) from ultrasound to delivery was 17.2 ± 9.6 days. Thirteen women (92.9%) delivered vaginally with no complications, and only one woman (7.1%) required an emergency Caesarean section for intrapartum bleeding. The risks of antepartum and postpartum hemorrhage were 21.4% and 14.3%, respectively.

Conclusion: Having a placental edge more than 10 mm from the internal os, measured by transvaginal sonography near term, justifies allowing a trial of labour and carries a low risk of subsequent obstetrical hemorrhage.

Résumé

Objectif : Cette étude avait pour objectif d'évaluer les issues de grossesse au sein d'une cohorte de femmes qui présentaient un pourtour placentaire se situant à 11-20 mm d'écart par rapport à l'orifice cervical interne; elle cherchait également à déterminer la probabilité d'un accouchement vaginal réussi lorsqu'un essai de travail est tenté chez de telles femmes.

Méthodes : Nous avons mené une étude observationnelle prospective portant sur des femmes qui connaissaient une grossesse monofœtale, qui présentaient un pourtour placentaire se situant à 11-20 mm d'écart par rapport à l'orifice cervical interne (identifié par échographie transvaginale) et qui ont tenté un essai de travail.

Résultats : Quatorze femmes présentant les caractéristiques susmentionnées ont tenté un essai de travail au cours de la période d'étude. L'intervalle moyen (± σ) entre l'échographie et l'accouchement a été de 17,2 ± 9,6 jours. Treize femmes (92,9 %) ont connu un accouchement vaginal sans complications; une seule femme (7,1 %) a nécessité une césarienne d'urgence en raison de la présence de saignements pendant la période intrapartum. Les risques d'hémorragie antepartum et postpartum étaient de 21,4 % et de 14,3 %, respectivement.

Conclusion : La constatation d'un pourtour placentaire se situant à plus de 10 mm d'écart par rapport à l'orifice cervical interne (mesuré par échographie transvaginale peu avant le terme) justifie la tenue d'un essai de travail et ne s'accompagne que d'un faible risque d'hémorragie obstétricale subséquente.

Key Words: Placenta previa, low-lying placenta, transvaginal sonography, Caesarean section, trial of labour

Competing Interests: None declared.

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INTRODUCTION

The classical description of placenta previa relates to the degree to which the placenta encroaches on the cervix. Placenta previa is classified as complete or centralis, partialis, or marginalis. This classification was based on digital palpation of the edge of the placenta through the dilated cervix in cases of antepartum hemorrhage.[1] This remained unchanged until the application of ultrasound in the diagnosis of placenta previa became widespread.[1] Initially, transabdominal sonography was used for this purpose, but this approach was found to have false-positive and false-negative rates of

at least 10%.[2,3] The advent of high-resolution transvaginal transducers led to significant diagnostic improvement, to the point that the exact distance from the placental edge to the internal cervical os can be accurately measured to the nearest millimetre.[4–7] Transvaginal sonography has proved to be a safe procedure in the assessment of women with placenta previa and APH, and it is greatly superior to transabdominal sonography in accurately predicting placental location at delivery.[4,5,8] TVS has therefore become the standard for the diagnosis of placenta previa.[9]

The term "low-lying placenta" refers to a placenta that extends into the lower uterine segment, and it is typically used in cases where the placental edge is 20 mm or less from the internal cervical os. This minimum distance of 20 mm has become the generally accepted threshold for performing Caesarean section to prevent obstetrical hemorrhage resulting from proximity of the placenta to the cervix.[9,10] However, there is very little evidence to support this 20 mm threshold. The Society of Obstetricians and Gynaecologists of Canada, in the 2007 Clinical Practice Guideline "Diagnosis and Management of Placenta Previa," called for further studies to better establish the relationship between the placenta-to-cervix distance and the likelihood of subsequent maternal hemorrhage during labour for patients with low-lying placenta.[9]

The purpose of this study was to evaluate the pregnancy outcomes in women with a placental edge between 11 and 20 mm from the internal cervical os, and specifically to determine the likelihood of a successful vaginal delivery when a trial of labour is attempted in these women.

METHODS

We carried out a prospective observational study of all women with singleton pregnancies in our hospital who had a placental edge between 11 and 20 mm from the internal cervical os and who attempted vaginal delivery. We recruited participants between August 2010 and June 2013 in our tertiary-level obstetrical unit, which has approximately 5400 deliveries per year.

All women who presented with APH and/or the ultrasound diagnosis of placenta previa or low-lying placenta were referred for further evaluation in the fetal assessment unit in our centre. All women underwent an initial TVS, and if a low-lying placenta was identified, serial TVS examinations were performed before delivery, according to our departmental protocol. All women with low-lying placenta were identified at presentation and their clinical information recorded for future follow-up. All of these women had at least one TVS at approximately 36 weeks' gestation to aid in deciding about mode of delivery.

Eligible women, in whom the placental edge was between 11 and 20 mm from the internal cervical os at approximately 36 weeks' gestation, with a singleton fetus in a cephalic presentation, and with no contraindications to vaginal delivery, were counselled regarding a TOL by a member of the maternal-fetal medicine team.

All participants were admitted to the high-risk labour and delivery unit when they presented in labour. All had intravenous access established and were cross-matched for blood to be available.

Data collected included antenatal medical or obstetrical complications, occurrence of antepartum, intrapartum, or postpartum hemorrhage, progress in labour, mode of delivery, indications for intrapartum interventions, requirement for blood transfusion, and maternal and neonatal complications.

Ethics approval was obtained from the Research Ethics Board of the University of Manitoba Bannatyne Campus.

RESULTS

During the study period, 17 women met our study eligibility criteria. All women were counselled about the ultrasound findings and were offered a vaginal delivery. In three cases, the attending obstetrician decided with the patient to proceed with an elective Caesarean section solely because the low-lying placenta had been identified. Elective Caesarean section was performed in these three cases with no maternal or neonatal complications.

Fourteen women underwent a TOL at our centre in accordance with our study protocol. The mean (± SD) gestational age at the final TVS was 37+5 weeks ± 12.6 days and the mean ultrasound-to-delivery interval was 17.2 ± 9.6 days (Table 1).

Of these 14 women, three (21.4%) had a history of APH. All were very mild episodes requiring no intervention other than admission to hospital for several days of observation. No emergency Caesarean section was prompted by antepartum bleeding, nor was blood transfusion required. All three women subsequently delivered vaginally.

One woman had three episodes of mild APH, once at 29 weeks and twice at 40 weeks. All bleeding episodes stopped during observation without intervention in hospital. At 41+0 weeks' gestation, this woman presented

ABBREVIATIONS

APH	antepartum hemorrhage
TOL	trial of labour
TVS	transvaginal sonography