

**OVERCOMING BARRIERS AND APPROACH TO SELF-MANAGEMENT
STRATEGIES FOR AMISH PATIENTS IN RURAL MANITOBA**

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Background

An Amish community of approximately eleven families settled near the town of Vita, Manitoba, in the fall of 2017. These Amish families have increased the cultural diversity of Vita while also creating unique challenges for our rural healthcare system. Cornerstones of the Amish culture include strong conservative Christian values and intentional separateness from the outside world.^{1,2} Maintaining separation from others has resulted in decreased gene pool mixing and higher rates of recessive genetic disorders among the Amish community.¹ In addition, Amish peoples practice an agrarian lifestyle, refrain from the use of modern technologies, and have distinct healthcare practices that traditionally involve the use of self-management strategies and herbs.¹ The Amish community in Manitoba consists of individuals who are registered Canadian citizens but have voluntarily chosen to not register with Manitoba Health. Some choose not to register due to fears of military conscription, while others simply don't want to be indebted to the government in any form. The heavy reliance on self-management strategies as well as the lack of healthcare insurance often prevents Amish patients from seeking professional medical care sooner, posing unique challenges to the delivery of healthcare in rural Manitoba.

Abstract

The social, cultural, and financial barriers to providing health services for the new Amish community in Vita, Manitoba are highlighted by the following case report which describes an Amish patient who ingested castor oil for labor induction, had an unattended home birth with meconium-stained amniotic fluid (MSAF) present, and developed severe post-partum hemorrhage and endometritis. To improve future patient education regarding prenatal self-management strategies endorsed by the Amish community, a literature search was conducted. Firstly, literature searches of Pubmed and Cochrane Library were conducted to determine if castor oil use is associated with increased incidence of MSAF. While some studies have found a positive association between castor oil and incidence of MSAF,³ a Cochrane systematic review conducted in 2013 concluded that current evidence is insufficient to confirm this.⁴ Secondly, literature was searched to determine if MSAF is associated with increased incidence of post-partum maternal infections like endometritis. Best practice guidelines as well as a Cochrane systematic review conducted in 2014 stated that increased rates of chorioamnionitis and endometritis have been associated with MSAF.^{5,6} Recommendations for culturally competent care in a rural setting include interprofessional collaboration with Public Health and patient education including the use of free sample medications.

Case history

A 32 year old, G7P7, Amish patient gave birth to a term infant at approximately 11:00 on June 12, 2019. Due to Amish cultural beliefs and financial costs, the patient received no prenatal care, and the vaginal delivery occurred at the patient's home. The delivery was attended by a community member who is not currently licensed but received midwifery training in Germany. The ingestion of large doses of garlic two weeks prior to delivery as well as the use of castor oil to induce labor were some of the self-management strategies employed by this patient. In addition, meconium-stained amniotic fluid was noted by a community member who observed the

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delivery. Shortly after the delivery, the unlicensed midwife phoned Dr. Penner to report that the patient was bleeding uncontrollably. Dr. Penner gave verbal instructions over the phone and was able to attend in person fifteen minutes later, by which point the bleeding had already stopped. The community member indicated during the phone call that she had sterile gloves and could remove clots from the uterus, which she did while Dr. Penner was en route to the residence.

At approximately 13:34 that same day, the patient presented to Bethesda Regional Health Centre emergency via EMS with significant postpartum hemorrhage and an estimated blood loss between of 2 litres. Relevant past medical history included no prenatal care, history of previous postpartum hemorrhage with her second child and three children with GBS (not swabbed during most recent pregnancy). Upon arrival, she was visibly underweight, hypotensive (BP 90/60 mmHg), afebrile (37.3°C), and tachypneic (RR 22) while other vitals were within normal limits (HR 88 bpm and SpO₂ 100% on room air). She was initially given 1.5L crystalloid which resulted in only a transient improvement in blood pressure. Then, she received another 0.5L crystalloid, 1g tranexamic acid, 5 units oxytocin IV and another 40 units in 1000cc IV fluids. Physical exam results showed a uterus initially two finger widths above the umbilicus (U+2) and boggy, which became firm and was palpated at the level of the umbilicus after oxytocin administration. Also, there were no external or internal perineal lacerations visualized and there were no clots observed in the trickle bleeding. The patient's lab work was mildly abnormal except for hemoglobin, which was noticeably decreased (Hgb 74) and monitored for stability. She was discharged the next day on June 13, 2019 with a diagnosis of postpartum hemorrhage likely secondary to uterine atony in the context of grand multipara. Her discharge instructions included treatment for anemia with 1000mcg VitB12 and 300mg ferrous sulphite to be taken daily.

Approximately two weeks later, the patient presented to Bethesda Regional Health Centre emergency at 06:41 on June 28, 2019 with severe lower abdominal pain and vaginal discharge since 04:30 that morning. The pain was described as cramping/stabbing, and the patient denied any nausea, vomiting, diarrhea, fever or urinary symptoms. Her last bowel movement had occurred the night before and was completely normal. The patient was now approximately two weeks postpartum and was still experiencing some vaginal bleeding including the passage of clots but denied any foul odor, color, or abnormal volumes of blood loss. Upon admission, she was tachycardic (HR 121bpm), tachypneic (RR 22 bpm), and septic (2 or more SIRS criteria were noted to be present), with a blood pressure of 94/63mmHg. Urgent pelvic ultrasound and infused CT of the abdomen and pelvis was ordered to rule out retained products of conception (RPOC), appendicitis, or abscess. Pelvic ultrasound showed no evidence of RPOC, and infused CT was unremarkable except for the following findings: trace bilateral pleural effusions with some passive atelectasis in both lower lung lobes and a markedly distended urinary bladder. The patient was subsequently diagnosed with endometritis and prescribed IV hydromorphone every two hours and IV piperacillin-tazobactam to be taken until 24 hours had passed with no uterine tenderness, at which point they would be prescribed oral antibiotics as the patient was looking to reduce costs.

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Two days passed with minimal pain relief. On June 30, 2019, surgery was consulted for a second opinion and they concluded that there was nothing to operate. However, an abdominal mass was palpated to above the umbilicus. Therefore, a catheter was inserted to drain the bladder; this resulted in some pain relief and the patient was switched to oral hydromorphone. Physical examination revealed that the uterus was soft but still very tender with guarding present. The patient was reported as very pale and moaning during the exam, though her WBC and vitals were within normal limits and stable. It was thought that she may have developed a degree of neurogenic bladder since her bladder was markedly distended and she did not describe the expected sensation of that. Finally, the patient was discharged June 30, 2019, diagnosed with endometritis and bladder outlet obstruction possibly secondary to a large uterus/infection/or opioid administration. Her creatinine was normal as were her vitals (HR 54 bpm, RR 16, BP 103/65mmHg, SpO2 100% on room air) and she was prescribed one week of 1g IV ceftriaxone to be administered daily at the Vita and District Health Centre, 500mg Flagyl to be taken orally three times per day for another week, 6 tabs of 2mg hydromorphone and Tylenol 3 to be taken as needed for pain management. Additionally, the catheter was advised to stay in situ until the patient was able to void normally.

July 2, 2019, the patient presented to Vita and District Health Centre for day 3 of her one-week course of IV antibiotics and declined lab work to check CBC, electrolytes, or creatinine. Additionally, the patient expressed wanting to discontinue the IV ceftriaxone and switch to oral antibiotics due to financial reasons since she was self-pay. Though she expressed feeling better, she still appeared very pale and was continuing to experience abdominal pain. On July 3, 2019, the patient presented for dose 4 of her one-week course of IV antibiotics and was given oral antibiotics prematurely at her request (Cephalexin 500mg to be taken QID for 7 days). Though she refused further treatment, she did agree to lab work which showed decreased WBC ($3.5 \times 10^9/L$), decreased hemoglobin levels (98), decreased urea whole blood (1.8mmol/L) and decreased creatinine whole blood (37umol/L). On July 9, 2019, the patient presented to Dr. Trish Penner for a follow-up and denied any fever or chills. She stated that she was feeling well.

Literature Search

A literature search was performed using Pubmed with the following MeSH terms: Amish, Meconium, and Endometritis. In addition, the Cochrane Library was searched using the following term combinations: Castor oil and induction, and Meconium-stained amniotic fluid and postpartum outcomes.

Discussion

Meconium-stained amniotic fluid (MSAF) is defined as the passage of meconium in-utero. While poor perinatal outcomes associated with meconium-aspiration syndrome secondary to MSAF have been well-studied and documented in infants, it is less clear what factors are responsible for initiating the first passage of stool in-utero and what role self-management strategies like castor oil play in MSAF.⁷ To ensure more effective prenatal patient education in future encounters, a literature search was conducted to determine if castor oil use to induce labor is associated with increased incidence of MSAF and to determine if MSAF is associated with

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increased incidence of postpartum maternal infections. Literature review of Pubmed revealed that some studies have found an association between castor oil use and labor induction,^{8,9,10,11} as well as increased incidence of MSAF in pregnancies where castor oil was ingested to induce labor.³ However, a Cochrane systematic review conducted in 2013 concluded that there is insufficient evidence to conclude that castor oil is better than placebo for labor induction or occurrences of MSAF and highlighted the current lack of high-quality research regarding these associations.⁴ A best practice guideline as well as a Cochrane systematic review conducted in 2014 concluded that increased rates of chorioamnionitis and endometritis have been associated with MSAF.^{5,6} Therefore, future prenatal Amish patients should be counseled regarding the possible increased risk of MSAF with castor oil use, the lack of scientific data to confirm its efficacy and safety in labor induction, as well as the increased risk of post-partum maternal infections associated with MSAF. Counseling Amish patients regarding self-management strategies is essential to improving health outcomes in a group of people who are already more likely to have poorer outcomes.

Although the patient recovered well from endometritis and sepsis, the healthcare team at Vita and District Health Centre was concerned about her prognosis as treating this Amish patient posed unique challenges to healthcare providers. Although this patient is a registered Canadian citizen, she is not registered with Manitoba Health due to fears of being indebted to the government. Therefore, all healthcare services and diagnostic testing provided were not insured and paid with cash by the patient. Consequently, appropriate treatment (i.e IV ceftriaxone) as well as further testing (i.e. follow-up lab work) was often refused due to financial reasons. This resulted in healthcare providers needing to assess patient status as well as determine treatment recommendations without access to pertinent data (i.e. daily lab work or follow-up ultrasound). This patient did not receive prenatal care during her pregnancy as services were cost-prohibitive with no medical card. Her religious beliefs also prohibited the use of electricity as well as running water inside her home. Since the patient presented to the family physician to document the pregnancy just prior to the home-delivery, the family physician ensured the patient was aware of recommendations to get appropriate delivery care. However, due to both financial barriers and environmental factors relating to the home, the patient was unable to receive care from the registered midwifery service that was initially contacted by the family. Ultimately, the patient employed self-management strategies including the ingestion of large amounts of garlic as well as the use of castor oil to induce labor and the use of a non-licensed community member to deliver her infant at home.

Providing culturally competent and medically appropriate care to prenatal Amish patients requires the identification of barriers to healthcare as well as the implementation of feasible solutions. Physical barriers preventing the registered midwife from assisting in the home delivery included the lack of hydro and running water in the home. Since the patient refused to deliver in-hospital due to cultural and religious beliefs and there was no registered healthcare professional willing to assist in-home without electricity or running water, the patient was advised to call the doctor-on-call/EMS in case issues arose during delivery. Financial barriers to healthcare included the lack of registration with Manitoba Health; this was accommodated by switching from IV to oral antibiotics earlier than recommended, forgoing additional follow-up lab work, as well as

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accessing the Public Health Nurse who conducted a free home visit to assess mother and baby. Other social determinants that posed barriers to healthcare for this Amish patient included lack of health literacy regarding use of self-management strategies, lack of access to healthy and adequate foods, limited access to transportation, and cultural beliefs inhibiting the access of preventative health services. Some of these social determinants of health were addressed by providing the patient with a gift basket containing iron-rich foods, which was donated by some of the medical staff at the Vita and District Health Centre. In addition, the Public Health Nurse conducted a home visit which helped address the patient's limited access to transportation as well as reduced the financial burden of healthcare to the patient as the nurse's services were free.

Conclusions/Recommendations

While the patient recovered well from sepsis and endometritis, the unique religious, cultural, and financial factors encountered during this case prompted questions regarding the provision of culturally safe and competent healthcare for the Amish community located in rural Manitoba. Medical risk factors encountered in the Amish community include lack of preventative care, delayed presentation, heavy reliance on self-management/folk medicines, and poor health literacy.^{1,2} In addition, since the Amish peoples in Manitoba are not registered with Manitoba Health, Amish patients face large financial barriers to receiving appropriate medical care. Recommendations for culturally competent care include increasing cultural awareness by encouraging healthcare providers to reflect on how their own behaviors and beliefs influence patient interactions.² In addition, recommendations for the promotion of cultural knowledge and skills include enhanced education opportunities for healthcare professionals where information such as common diseases, healthcare practices, and cultural values of a particular group of people can be discussed.¹ Also, interprofessional collaboration with the community Public Health Nurse and home visits are recommended as a free resource to Amish patients who are needing pre-natal counseling or post-partum follow-up, and may have limited access to transportation. Lastly, patient support and counseling regarding "red flag" signs/symptoms, self-management strategies, and the provision of free prenatal vitamin/medication samples are highly recommended as strategies to overcoming health literacy and financial barriers to appropriate care as well as promoting the utilization of preventative care.

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