Bilateral Tubal Ligation after Parturition Among Medicaid Patients in West Virginia: An Institutional Experience

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Abstract

Postpartum tubal ligation is one of the safest and most effective methods of contraception. Yet, not all women who desire it actually undergo the procedure. We studied clinical and demographic factors that were associated with receipt of tubal ligation among West Virginia Medicaid patients. A retrospective study was performed evaluating Medicaid patients in West Virginia requesting postpartum sterilization from May 2012 to November 2014 (N = 153). Demographic information was obtained on these patients. Clinical factors complicating pregnancy were analyzed. For those patients choosing not to undergo tubal sterilization, contraceptive plan at discharge was also evaluated. Statistical tests included Chi square and Fisher’s Exact Test where appropriate. 71% (n=96) received tubal ligation before discharge. 21% (n = 29) requesting postpartum tubal ligation went unsterilized, indicating that significant barriers remain.

Introduction

Populations covered by public insurance are particularly vulnerable to unwanted pregnancy.1 These pregnancies are also likely to be high risk due in part to increased complications such as preterm birth, stillbirth, and low birth weight.2,3

In 2010, 52% of all pregnancies in West Virginia were unplanned.4 Of those, 76% were publicly funded through Medicaid compared with 68% nationally.5 In 2010, the federal and state governments spent $145.4 million on healthcare for unintended pregnancies in West Virginia. Of this, $120.5 million was paid by the federal government and $24.9 million was paid by the state.4,5

For women wanting sterilization, the immediate postpartum period represents a favorable time to address the impact of unwanted future pregnancy. Tubal ligation performed immediately postpartum ensures women are protected from future pregnancy prior to leaving the hospital.

It is also highly cost effective to perform sterilization during the immediate postpartum period. The procedure does not extend the length of hospitalization or require additional anesthesia.6 Women that have obtained an epidural for anesthesia during delivery can maintain this anesthesia for the sterilization procedure.

Despite the advantages of cost and time, between one third and one half of postpartum tubal ligation requests go unfilled in the United States.7 The objective of this study was to determine the rate of West Virginia Medicaid patients receiving immediate postpartum tubal sterilization upon request at West Virginia University Hospital. As a secondary outcome, we wished to identify modifiable barriers to receiving postpartum tubal sterilization among West Virginia Medicaid patients.

Materials and Methods

This retrospective case series was performed at Ruby Memorial Hospital, West Virginia University, Morgantown, WV. Potential patients were identified from all patients receiving West Virginia Medicaid insurance and expressing interest in tubal sterilization within the electronic medical record. These patients were consented for bilateral tubal sterilization, delivered, and discharged between 5/1/2012 and 11/30/2014. A total of 153 patients having West Virginia Medicaid insurance and expressing interest in tubal sterilization were identified. Subjects delivering elsewhere were excluded, leaving a total study population of 135.

Patient demographics were collected from electronic medical records. The following demographics were recorded: Patient age (years) on the day of admission for delivery, body mass index (BMI), gravidity, parity, gestational age at delivery,
mode of delivery, timing of delivery (day versus night), and dietary fasting postpartum. Relevant clinical information including if the pregnancy was complicated by a medical condition such as hypertension or diabetes, history of preterm birth, total number of living children, and days from signed Medicaid tubal consent until delivery all of which were collected from electronic medical records. Federal regulation requires a consent be signed at least 30 days before sterilization to be valid. This document must accompany the patient to wherever the sterilization is to be performed. For those patients that did not undergo tubal sterilization postpartum, contraceptive plan at discharge was also evaluated.

This study was approved by the West Virginia University Institutional Review Board. No consent was obtained or required. We primarily evaluated completion rates of tubal sterilization. Contingency tables were used to display frequency distribution of the variables.

Continuous data were analyzed as mean +/- standard deviation. Statistical tests included Chi square and Fisher’s Exact Test where appropriate. When p-values were < 0.05, an effect was considered statistically significant. Data were analyzed using JMP software Version Pro 12.2, SAS Institute Inc., Copyright 2015.

Results

Only patients delivering at West Virginia University Hospital were included in the study (n = 135) with 71% (n=96) receiving tubal ligation before discharge and an additional 7.4% (n= 10) getting sterilized at a later date (Figure 1). Of the study participants expressing interest in postpartum tubal ligation, 21% (n=29) went unsterilized. Women with a history of cesarean section delivery in a prior pregnancy (83% vs. 61%; p = <0.0007) and those that delivered in the current pregnancy by cesarean section rather than vaginal delivery (86% vs. 55%; p = <0.001) were more likely to receive tubal ligation (Figures 2 and 3). All other factors did not significantly influence rate of completion for tubal sterilization (Table 1). Primary reasons for tubal ligation to go uncompleted were: withdrawal of consent (51%), documentation issues (22.7%), medical complications (10%), and other issue (10%). Of those Medicaid patients that didn’t undergo tubal sterilization, 52% chose a long acting reversible form of contraception such as an intra-uterine device. The remaining 48% chose either barrier methods or short-term reversible contraceptive methods at their six week postpartum visit.

Table 1

<table>
<thead>
<tr>
<th>Demographics</th>
<th>Sterilized</th>
<th>Not Sterilized</th>
<th>P-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (years)</td>
<td>29.9 +/- 5.0</td>
<td>29.1 +/- 6</td>
<td>P=0.47</td>
</tr>
<tr>
<td>Gest Age at Delivery</td>
<td>38w 0d +/- 2d</td>
<td>38w 4d +/- 1.4d</td>
<td>P=0.32</td>
</tr>
<tr>
<td>Gravidity</td>
<td>4.3 +/- 2.3</td>
<td>3.6 +/- 1.6</td>
<td>P=0.13</td>
</tr>
<tr>
<td>Term Births</td>
<td>2.5 +/- 1.3</td>
<td>2.7 +/- 1.2</td>
<td>P=0.46</td>
</tr>
<tr>
<td>Preterm Births</td>
<td>0.7 +/- 1.1</td>
<td>0.4 +/- 0.6</td>
<td>P=0.16</td>
</tr>
<tr>
<td>Abortions</td>
<td>1.1 +/- 1.7</td>
<td>0.6 +/- 0.8</td>
<td>P=0.13</td>
</tr>
<tr>
<td>Total Living Children</td>
<td>3.2 +/- 1.3</td>
<td>3.0 +/- 1.2</td>
<td>P=0.46</td>
</tr>
<tr>
<td>BMI</td>
<td>32.8 +/- 9.4</td>
<td>31.5 +/- 7.9</td>
<td>P=0.50</td>
</tr>
<tr>
<td>Days from consent to delivery</td>
<td>65.0 +/- 33.8</td>
<td>60.0 +/- 51.2</td>
<td>P=0.54</td>
</tr>
</tbody>
</table>

Discussion

This retrospective case series showed greater than 70 percent of women with Medicaid who request postpartum sterilization undergo the procedure at West Virginia University Hospital, which is more than the national average. This finding is important given the high cost of unintended pregnancy within the state of West Virginia. The relatively

Figure 1.
Retrospective Study | WVMJ OA

Our study showed a significantly higher number of Medicaid patients undergoing sterilization at the time of cesarean section. This agrees with national norms. In a 2015 report, data from the National Hospital Discharge Survey between 2000-2008 noted that postpartum tubal sterilizations at the time of cesarean sections were more common in those with Medicaid coverage. Although we were unable to assess the role of provider bias on the likelihood of sterilization at the time of cesarean section, persistently higher rates of sterilization during this procedure may suggest it plays some role. For example, the provider could be influenced by the ease of the sterilization at the time of a cesarean section than after vaginal delivery.

Of those patients in our study that didn’t undergo postpartum sterilization, 52% chose a long acting reversible contraceptive (LARC) method after contraceptive counseling. For appropriate candidates, LARCs have also been shown to reduce unintended pregnancy. Their ease of use coupled with immediate reversibility if another pregnancy is desired makes this a popular option for many patients postpartum. Recently, the American College of Obstetricians and Gynecologists have endorsed counseling patients prenatally about the option of LARC immediately postpartum. Despite the increased expulsion rate of 10 – 27% compared to interval insertion of an intra-uterine device, strong evidence exists to suggest the effectiveness in preventing unwanted pregnancy, particularly in a Medicaid population where 1 in 4 will not attend the postpartum visit. Many providers at our institution felt uncomfortable offering this immediately postpartum out fear of complications such as uterine perforation. This, unfortunately, continues to be an obstacle which may be overcome through proctoring and training.

In our study, the main barrier to postpartum tubal sterilization was patients changing their mind about the procedure. This may, in part, be due to future regret over permanent sterilization. In one recent study, the cumulative probability of expressing regret after tubal sterilization in patients under the age of 30 was as high as 20%. Other reasons that patients may change their minds...
include fear of surgery, anesthesia, or wanting another child. The lack of a signed Medicaid tubal consent form also proved to be a barrier to postpartum tubal sterilization. To ensure informed consent and prevent coercion into permanent sterilization, federal regulation requires this consent form be signed 30 days prior to the procedure. West Virginia University Hospital is a large referral center and roughly 80% of the deliveries are from patients that have been transferred from an outside labor and delivery unit. Failed transfer of a completed Medicaid tubal consent may have prevented postpartum tubal sterilization. Unfortunately, we have no way of knowing how often this occurred from our electronic medical record. The obvious question that arises is how does this compare to women covered by private insurance who do not have these same restrictions regarding sterilization. Unfortunately, due to limitations within our electronic medical record, we were unable to perform this comparison. However, in the study by Albanese et al, patients with private insurance were no more likely to have their postpartum tubal performed than those covered by public insurance. In this study, other factors besides insurance status influence postpartum sterilization rates.

In addition to not being able to draw comparisons to patients with private insurance, our study has several other limitations. For example, our study design did not account for limited chart documentation as to why so many women changed their mind about postpartum sterilization. We also do not have information about physician knowledge, attitudes, or practices with regard to postpartum sterilization. Lastly, this data was collected at one institution. It remains unknown whether our findings can be extrapolated to patients across the entire state of West Virginia.

**Conclusion**

Although the postpartum sterilization rate at West Virginia University hospital is higher than the national average, a large number of patient requests went unfulfilled, indicating that significant barriers remain. This study further demonstrates the importance of postpartum contraceptive counseling as a large number of patients are likely to change their mind about the procedure. More research is needed pertaining to patient perception regarding postpartum sterilization in West Virginia. Clinical challenges such as access to anesthesia, proper signed Medicaid consent, and pre-existing medical conditions must be overcome. Labor and delivery units should prioritize the completion of postpartum sterilization to combat the potential for serious medical and financial consequences throughout this state.

**References**