

PERSISTENT POSTPARTUM URINARY RETENTION: PREVALENCE, OBSTETRIC RISK FACTORS AND MANAGEMENT

Hypothesis / aims of study

Persistent postpartum urinary retention, beyond the early puerperium, is uncommon in modern obstetric practice. However, unrecognized urinary retention and mismanagement may lead to recurrent urinary tract infections, upper urinary tract damage and permanent voiding difficulties. Data concerning the prevalence, etiology, diagnosis and management of this clinical situation are limited. The present study was undertaken to evaluate the prevalence and presumed etiologies of persistent postpartum urinary retention.

Study design, materials and methods

The study population comprised 9935 consecutive, unselected women who delivered in our maternity hospital during 2006. Of these, 4380 (44%) were primiparae. Vaginal deliveries and cesarean sections were performed in 76.5% and 23.5% of the women, respectively. The rate of instrumental deliveries was 4.2%; all were carried out by vacuum extraction. Epidural analgesia was administered to 68% of the women. Dysfunctional labor was defined by clinical criteria proposed by the American College of Obstetricians and Gynecologists [1995]. According to these criteria, the first stage of labor is considered abnormal if cervical dilatation is less than 1.2 cm per hour, or there is dilatation arrest for more than 2 hours. Prolonged second stage is defined as 2 or 3 hours depending on parity and the use of epidural anesthesia. After delivery, if a woman was unable to void within 6 hours, or if an over distended bladder was suspected and sonographically confirmed, the bladder was catheterized and a Foley catheter was inserted and left in situ for 24 hours. At this time, if the patient was still unable to void, or voiding was unsatisfactory (residual urinary volume >200 ml), a catheter was re-inserted for an additional 48 hours. The term "persistent postpartum urinary retention" was defined as the absence of adequate voiding despite the use of an indwelling catheter for 3 days. These patients were referred to the urogynecologic unit for further evaluation and treatment. An attempt to remove the catheter was performed every 3-5 days. On each occasion, if the patient was unable to void, or voiding was unsatisfactory (residual urinary volume >200 ml), the catheter was left in situ for an additional 3-5 days. Obstetric data of patients with persistent postpartum urinary retention were collected from a computerized data base. Details of maternal, fetal, obstetric and anesthesiologic parameters were obtained and compared to the general obstetric population.

Results

Seventeen (0.17%) patients (11 primiparae, 6 multiparae) developed persistent postpartum urinary retention. All were healthy young women, age 26-40 years, with no previous history of voiding difficulties. Twelve (71%) women underwent labor induction by oxytocin for various obstetric indications. Four (24%) other women received oxytocin augmentation for dysfunctional labor. All but one received epidural analgesia. Duration of the first stage of labor was 1.5-11 hours. Duration of the second stage of labor was 20-270 minutes (mean 147±68). Seven (41%) patients had, by definition, prolonged second stage. Twelve (71%) patients had spontaneous vaginal deliveries, four (24%) delivered by vacuum extraction, and one underwent cesarean section for prolonged second stage (270 min). Posterolateral episiotomy was performed in twelve (71%) women. All 17 patients were diagnosed as having acute urinary retention within 4-24 hours after delivery, and were treated according to the presented protocol. The initial bladder volumes at the time of diagnosis were 600-3500 ml (1473±691). The residual urinary volumes after 24 hours were 320-1400 ml (765±383). Twelve patients (71%) achieved normal spontaneous voiding within 4-10 days postpartum. In the remaining patients normal voiding was achieved 15-28 days after delivery. Further comparison of the postpartum time intervals (4-10 versus 15-28 days) to complete resolution failed to reveal any significant differences (Table 1).

Interpretation of results

Results of our study demonstrate a 0.17% prevalence rate of persistent postpartum urinary retention in an unselected population. The use of oxytocin, prolonged second stage and vacuum deliveries were relatively common among cases of persistent postpartum urinary retention.

Concluding message

Persistent postpartum urinary retention is an uncommon but troublesome complication of labor and delivery. With early diagnosis and timely intervention, complete resolution is expected within 28 days postpartum.

Table 1: Comparison of postpartum time intervals (4-10 versus 15-28 days) to complete resolution

Mean±SD, or N (%)	4-10 days N=12	15-28 days N=5
Age	31±4	30±3.6
Weight (kg)	78±15	68±4
Induction of labor	9 (75%)	3 (60%)
Second stage (min)	150±79	142±21
Epidural	11 (92%)	5 (100%)
Spontaneous delivery	9 (75%)	3 (60%)
Vacuum extraction	2 (17%)	2 (40%)
Cesarean section	1 (8%)	0
Birth weight (gm)	3318±321	3361±247
PVR at diagnosis (ml)	1491±738	1425±540

PVR at 24 hours (ml)	770+405	754+334
Foley catheter (days)	5.8+1.8	19.6+4.5

PVR- Post Void Residual volume

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HUMAN SUBJECTS: This study did not need ethical approval because Not required but followed the Declaration of Helsinki Informed consent was obtained from the patients.