The Pump Ball Catheter Drainage Bag Pilot Study for Acute Management of Visible Haematuria/Clot Retention

O OFAGBOR, O QUINN, C WATSON, W FINCH
NORFOLK AND NORWICH UNIVERSITY HOSPITAL

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PURPOSE / OBJECTIVES

Visible haematuria (VH), is a common finding on the urology ward. The high frequency of catheter blockages by clots presents a burden due to the need for multiple bladder washes and irrigation.

The pump ball catheter drainage bag (PBCB) is designed to allow the use of a hand pump to dislodge blood clots through suctioning a closed system. The study aimed to assess the effectiveness of this device for patients with VH and, secondarily, the cost effectiveness and environmental impact of the PBCB.

MATERIALS / METHODS

A mixed-methods approach was used, incorporating both quantitative and qualitative elements. In the qualitative arm, effectiveness was assessed through an anonymous questionnaire circulated to the urology MDT.

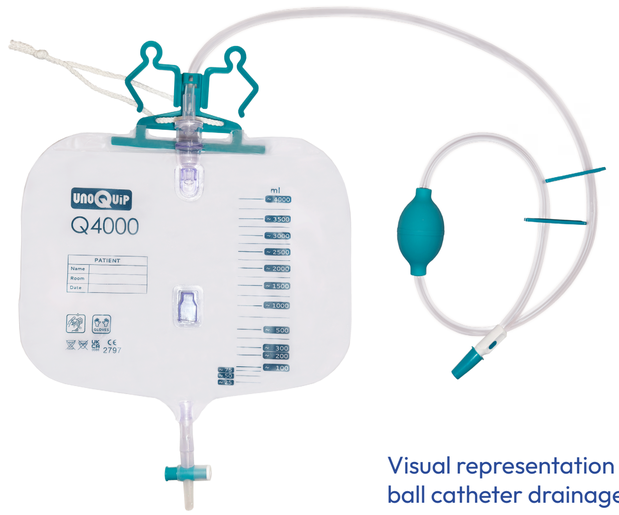
In the quantitative arm, data were retrospectively gathered from EPR to identify a control group who used the standard urine bag, while an intervention group using the PBCB was prospectively followed. Analyses were conducted using Excel® to calculate averages and determine statistical significance.

RESULTS

The questionnaire received 26 responses. Overall findings revealed that the PBCB was faster when dislodging clots and helped to avoid bladder washouts.

Of the 63 patients admitted with haematuria, 38 patients were taken as control, and 25 were in the intervention group, who used the PBCB.
The average number of bladder washouts decreased in the PBCB cohort when compared to the control, 1.68 and 2.6 respectively, chi-squared (p=0.011) . We demonstrated an average saving of £3.38 per patient per inpatient stay using the PBCB.

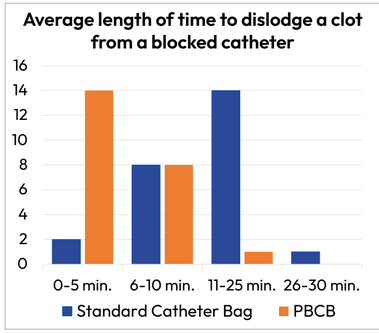
The closed pump bladder drainage system is a promising tool for managing haematuria on hopsital wards. It offers faster clot clearance compared to manual bladder washouts, potentially reducing the number of formal washouts needed. Staff found it easy to use and less intrusive, though less effective for large blot clots. Cost analysis suggests a small per-patient saving, while the reduced need for equipment may lessen environmental impact.
Although the system is associated with more patient discomfort, its advantages in time efficiency, potential infection reduction, and sustainability support broader adption, with recommendations for further staff training and clear escalation guidelines.

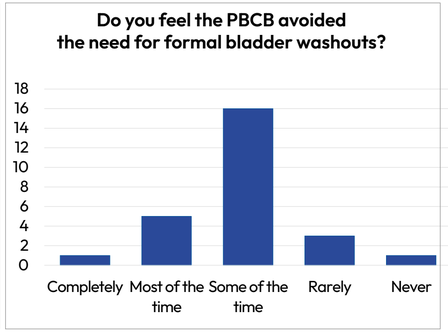


Visual representation of a pump ball catheter drainage bag.

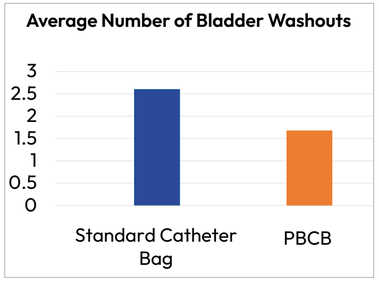
RESULTS

Figures 1 and 2 - Key Qualitative Arm Findings





Figures 3 and Table 1 - Key Quantative Arm Findings



	Control	PBCB Cohort
Number of patients	38	25
Total bladder washouts	99	42
Average number of bladder washouts	2.60	1.68
Average number of stay (days)	5.79	6.76
Return to theatre (number)	2	2
Number of patients previously on any anticoagulants/antiplatelets	19 (50%)	12 (48%)

SUMMARY / CONCLUSION

Overall, the PBCB is a quick and effective adjunct to formal syringe bladder washouts for managing haematuria on the wards. It serves as a valuable tool in reducing nursing workload and saving clinical time.

The PBCB may lower the average number of formal bladder washouts required, thereby contributing to a reduction in the average cost per patient per inpatient stay. Additionally, by decreasing the frequency of full bladder washouts, which typically involve the use of single-use kits, the PBCB may also offer environmental benefits through reduced plastic consumption and a smaller ecological footprint.