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Preoperative ultrasound monitoring can reduce postoperative bladder distension: A randomized study

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Abstract

Objective. The aim of this study was to explore whether close preoperative ultrasound monitoring starting in the emergency room (ER) could prevent postoperative bladder distension among acute orthopaedic patients. *Material and methods.* A randomized controlled trial was conducted at a 650-bed level-2 centre in Sweden. Inclusion criteria were admittance via ER to an orthopaedic ward for acute surgery. Bladder volumes were measured with a portable ultrasound scanner (Bladderscan BVI 3000). In the intervention group, all patients were scanned in the ER and then regularly at the ward at predefined times until surgery. In the control group, no regular scanning was performed before surgery. During surgery, the same procedure was performed for both groups: bladder scanning immediately after arrival to the recovery room and continuous postoperative scanning until voiding. The primary outcome was postoperative bladder distension, defined as a bladder volume ≥ 500 ml. Secondary outcomes were postoperative urinary tract infection and hospital length of stay. *Results.* A total of 281 patients completed the study, 141 in the intervention group and 140 in the control group. Postoperative bladder distension was significantly higher in the control group (27.1% vs 17.0%; $p = 0.045$, 95% confidence interval 4.9–19.8) in the intention-to-treat, per-protocol and as-treated analyses. No statistical difference was found between the intervention group and the control group regarding the secondary outcomes. *Conclusions.* Frequent bladder monitoring starting in the ER can reduce postoperative bladder distension among acute orthopaedic patients. A preoperative bladder monitoring protocol should be implemented early in the ER for all patients admitted for acute orthopaedic procedures.

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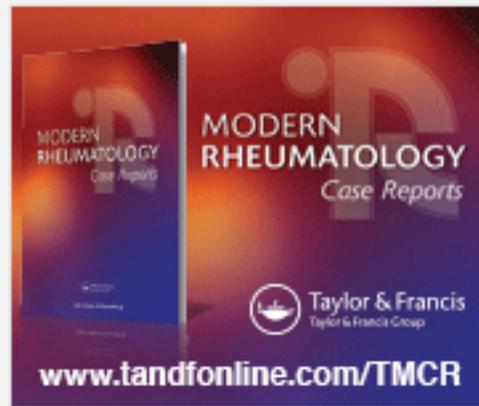
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