

A Training Model for Suprapubic Catheter Insertion: The UroEmerge™ Suprapubic Catheter Model

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Suprapubic catheter insertion is a fundamental practical skill that all clinicians should be familiar with, yet there are great practical difficulties in training in this area. A training model was designed to facilitate teaching, and then this model was subsequently tested in an emergency urology practical skills course. *UROLOGY* 72: 196–197, 2008. © 2008 Elsevier Inc.

Suprapubic catheter (SPC) insertion is a common procedure in clinical practice, especially in the emergency setting. Although trainees acquire basic skills and knowledge during their training, learning SPC insertion has traditionally been an “on-the-job” experience. To our knowledge there are currently no training devices available for this purpose. A simple model was introduced to teach junior doctors the technique of SPC insertion in a safe and reliable manner, to improve patient safety. The method was used in an emergency urology practical skills course—The UroEmerge™ Course¹—to assess its impact on training and use in clinical practice.

MATERIAL AND METHODS

A 3-L bag of irrigation fluid (Baxter, Newbury, United Kingdom [UK]) was injected with 10 mL of povidone-iodine (Ecolab, Swindon, UK) and then tied with two tourniquets (Morton Medical, London, UK) to simulate a full bladder. This was then placed in a plastic trainer (Fig. 1). An abdominal open and closure pad (Limbs & Things, Bristol, UK), which simulates abdominal skin and rectus sheath, was then securely fastened to the trainer to complete the training model (Fig. 2). The technique of SPC insertion was demonstrated and practised using a 16-F trocar and introducer set (Bard, Crawley, UK), and more recently, using the Mediplus Seldinger SPC² (Mediplus, Wycombe, UK). The sides of the trainer was covered during simulation, and the model was viewed at the end to assess correct positioning of the SPC (Fig. 3). The ability of 36 candidates to perform SPC insertion using this model was assessed before and after a new emergency urology practical skills course, on a visual analogue scale of 1 (poor) to 5 (excellent). During this 1-day course, in which mannequins and no real patients were used,



Figure 1. Plastic trainer housing the simulated full bladder.

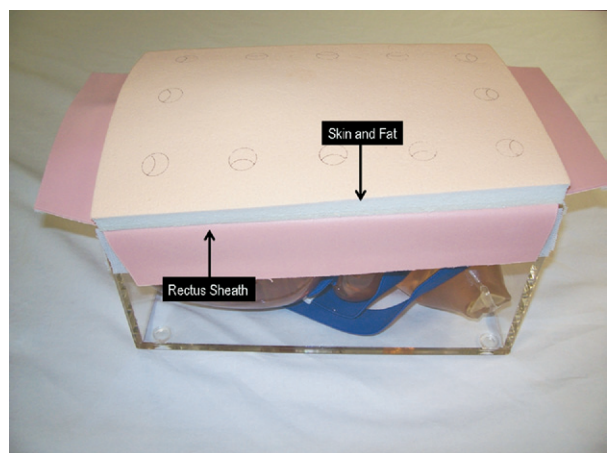


Figure 2. Abdominal pad that simulates abdominal skin and the rectus sheath.

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after a 10-minute video demonstration and 10-minute lecture, candidates assisted and then performed one SPC insertion each. They were all contacted at 6 weeks and 3 months to assess the number of SPC insertions performed during their clinical practice.

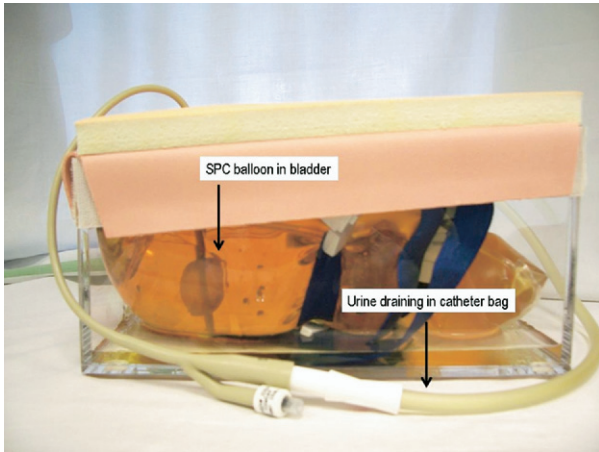


Figure 3. Model can be viewed at the end to assess correct positioning of the suprapubic catheter.

RESULTS

Before the skills course the candidates' mean (standard deviation) ability to perform SPC insertion was 3.14 (0.6) (range, 1-5). Immediately after the course, the ability was 4.48 (0.7) (range, 4-5). After 6 weeks the mean ability was to 4.31 (0.7) (range, 4-5) and then at 3 months was 3.89 (0.8) (range, 3-5). The average number of SPC inserted was 0.08 in the 4 weeks before the course, 6.5 at 6 weeks, and then 6.0 at 3 months.

COMMENT

Complications of SPC insertion may be disastrous and include bleeding, infection, and stone formation.^{3,4} Oc-

asionally injury to adjacent bowel may occur, necessitating emergency laparotomy.^{5,6} A training model for SPC insertion has been developed on which to practice the technique to improve skills and subsequent patient safety. Using this technique, junior urology trainees attending a urology practical skills course improved their ability to perform the procedure, and this was maintained up to 3 months after the course.

CONCLUSION

A simple training model for SPC insertion has been developed that is reliable and allows improved ability of junior doctors to perform SPC insertion in clinical practice.

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