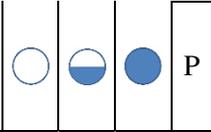


PERFORMING URETHROVESICAL CATHETERIZATION (FOLEY PROBE) IN FEMALE PATIENTS

Creating a direct communication with the content of the urinary bladder by means of a specially designed tube (Foley probe) inserted through the urethra into the bladder.



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| 1. | Assess patient's vital functions presence (<i>by observing, by example consciousness, movements, speech, breathing, other vital signs</i>): Good morning/afternoon. My name is I am your doctor / nurse and I will examine you in a short while. | | | | | 0 2 5 |
| 2. | Can you tell me your name, please (or, check patient's ID bracelet, if available) And your date of birth Thank you. (<i>This is done to avoid performing the procedure on the wrong patient as there may be several patients with the same name. Also, do not ask e.g. "Are you Mr. Smith?" to avoid receiving false confirmation from patients distracted by their symptoms or other reasons.</i>) <i>Double-check in the medical records for Name: <input type="checkbox"/> DOB: <input type="checkbox"/></i> | ESSENTIAL | | | | |
| 3. | Secure a private examination environment (<i>room with one bed, curtains, paravans etc.</i>) What I need to do is place a probe into your urinary bladder in order to drain it into some special medical containers. (<i>what we will do</i>) | | | | | 0 1 3 |
| 4. | The manoeuvre involves passing a flexible tube through areas associated with urination. This is generally easy to perform, involves no cuts or punctures, so it should not hurt. (<i>what the manoeuvre consists of</i>) | | | | | 0 1 3 |
| 5. | It is very important that you stay relaxed and calm during the procedure. When I tell you, please don't move and keep your legs as we will place them so we can insert the probe without touching the surrounding areas which may carry microbes. Also, upon my signal, breathe in deeply and then blow it all out – breathe several times, deeply, slowly, freely. (<i>how to contribute to the procedure</i>) | | | | | 0 1 3 |
| 6. | Emptying the bladder is an important element of your medical condition. Based on this, we will decide what medicines to recommend further. (<i>the benefit of the procedure</i>) | | | | | 0 1 3 |
| 7. | Now, are you clear about the procedure? Would you like to ask me anything else? | ESSENTIAL | | | | |
| 8. | Can you tell me when and how much you urinated the last time? (<i>assessing patient perception and involvement in own health issues</i>) | | | | | 0 1 3 |
| 9. | Have you undergone a urinary probe insertion procedure before? For previous surgery, perhaps? | | | | | 0 1 3 |
| 10. | Are you allergic to anything, rubber products, iodine, adhesive tape maybe? (<i>evaluating possible allergies to the materials commonly used in the procedure</i>) | ESSENTIAL | | | | |
| 11. | Do you agree to the sampling of your biological products? (<i>evaluation of personal beliefs regarding the sampling of biological products</i>) | ESSENTIAL | | | | |
| 12. | When did you last eat? (<i>if possible, avoid performing urethrovvesical catheterization immediately before or after the patient's meals</i>) | | | | | 0 1 6 |
| 13. | Selecting the Foley probe to be used (technical characteristics) in the given clinical situation (if not already specified in the patient's medical records). | | | | | 0 1 9 |

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| | <p>Evaluation of the patient's medical records as concerns: <i>patient's age and gender:</i></p> <ul style="list-style-type: none"> - child - gauge 8-10 probe (external circumference 2.7 ~ 3.4 mm), length of 30 cm, balloon of 3 ml; - adult - gauge 14-18 probe (4.7 to 6 mm), with a 5 ml volume for the balloon (<i>a smaller balloon size allows for the distal end of the probe - where the drainage holes are, to be positioned nearest to the urethral point of the bladder, thereby resulting in a more complete evacuation</i>), 23-26 cm in length | | | | |
| 14. | <p>Evaluation of the patient's medical records as concerns: <i>patient diagnostics supporting the indication of urethrovesical catheterization (pre-existent urogenital pathology):</i></p> <ul style="list-style-type: none"> - in cases of urinary retention (<i>suspected inability of the urethrovesical system to ensure the evacuation of urine accumulated in the bladder</i>) catheterization is postponed until the existing volume of urine in the bladder is assessed using a portable bladder echograph (<i>the detected volume is digitally displayed with an accuracy of 85% for volumes of less than one litre; documentation of a volume of 500-800 ml leads to the indication to trigger the sensation of urination; if a volume of less than 500 ml is detected, catheterization is postponed to allow further accumulation of fluids at urinary bladder level. This is due to the infectious risk of catheterization associated to the potential mobilisation of microorganisms commonly existing at the distal portion of the urethra, which get to be transferred inside the urinary bladder, a normally uncontaminated space</i>) <p>I will now let the sink run and you can keep your hands under the running water. This is to speed up the urge to void.</p> <ul style="list-style-type: none"> - in the drainage of clots, dense urinary flakes, haematuria – larger size probes, gauge 20 (6.6 mm) - in pathologies requiring continuous or intermittent irrigation of the bladder - Foley probe with three channels (<i>one for bladder drainage, the second for filling/emptying the probe balloon, and the third for introducing the bladder irrigation fluid</i>) | | | | 0 1 9 |
| 15. | <p>Evaluation of the patient's medical records as concerns: <i>estimated duration of urethrovesical catheterization:</i></p> <ul style="list-style-type: none"> - up to 1 week - use Foley probe from plastic (<i>reduced flexibility with increased traumatic consequences</i>), PVC (<i>improved flexibility at body temperature, moulding on the contours of the urethra</i>) or latex (<i>allergic risk always to be assessed in advance; the high frequency of allergic phenomena to latex in the medical environment currently acts as a deterrent in actual use</i>) - up to 4 weeks – use Foley probe from polytetrafluoroethylene (teflon) - up to 12 weeks - use silicone Foley probe (<i>more expensive</i>) optionally impregnated with antimicrobial substances (<i>nitrofurantoin, hydrogel, silver etc.</i>) | | | | 0 1 3 |
| 16. | <p>Evaluation of the patient's medical records as concerns: associated diagnoses (<i>e.g. coagulopathies, etc.</i>), laboratory parameters (<i>e.g. platelets <150,000, INR > 1.5, etc.</i>) and associated medication (<i>e.g. Sintrom, Trombostop, Aspirin, Plavix, etc.</i>) – to assess the risk of prolonged bleeding.</p> | | | | 0 1 5 |
| 17. | <p>Once the technical characteristics of the probe have been selected, two such urethrovesical catheters should be available from the start in order to be able to quickly replace the probe in case of contamination or damage during the procedure.</p> | | | | 0 1 3 |
| 18. | <p>Assessment of patient willingness to collaborate in performing the procedure.</p> <p>Evaluation of the patient's medical records from the standpoint of associated conditions that could contraindicate either the supine position (<i>e.g. severe heart failure with decubitus dyspnoea</i>) or knee flexion / thigh external rotation (<i>orthopedic / rheumatologic</i>)</p> | | | | 0 1 5 |

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| | diseases) | | | | |
| 19. | I will need you to lie on your back in this bed, with your knees bent and kept apart for between 15 to 30 minutes (<i>external thigh rotation and knee flexion allow optimal view of the perineal region, where the urinary meatus to be instrumented during the manoeuvre is located</i>). Can you show me, please? And bend your knees. Good. Now move your knees further apart and then rotate your thigh outward. Thank you. Can you keep this position? (<i>if the patient has difficulty in positioning and keeping their body segments as required, a colleague may be asked to support the patient's knees and hips. Alternately, the patient may be placed slightly on one side or in the semi-prone position - Sim's</i>) | | | | 0 1 3 |
| 20. | Your genital area will be exposed for this manoeuvre. As a matter of personal privacy, would you rather have women only perform it? | | | | 0 1 9 |
| 21. | If they have not been recently evaluated: BP measurement, pulseoximetry, thermometry: BP..... mmHg, SaO ₂ %, T °C. Hand wash. Apply clean medical gloves as part of standard precautions. | | | | 0 1 3 |
| 22. | Use a rubbing alcohol swab to decontaminate any furniture surfaces with which there will be contact during the manoeuvre. | | | | 0 1 3 |
| 23. | Dispose of used gloves in the non-sharp infectious waste container. Hand wash. Apply a new pair of medical gloves as part of standard precautions. | | | | 0 1 3 |
| 24. | The manoeuvre involves the prior cleaning of the genital area with water and soap. You can do this yourself or we can do it for you – which do you prefer? Clean perineal region with water and soap – most patients choose to do it themselves (<i>as this involves the genital area</i>) and manage quite successfully if they receive clear guidance: Always wash and wipe from the clean areas towards the dirty ones, from front to back. (<i>the anal area carries a high microbial load</i>) | | | | 0 1 9 |
| 25. | Cover the patient with a bath blanket arranged in the shape of a diamond, corners pointing to the head, legs and sides of the bed, respectively. | | | | 0 1 3 |
| 26. | Use your hands to hold the corner of the bath blanket under your chin while we pull the linen from underneath you. Without exposing the patient under the bath blanket, roll up the sheet and blanket to the foot of the bed and store them in the space between patient's feet and footboard. | | | | 0 1 3 |
| 27. | Now, please undress from waist down, under the bath blanket. We will store your clothes for you until the manoeuvre is over. Thank you. | | | | 0 1 3 |
| 28. | Bend your knees now, please. Your soles about 60 cm apart. Like this. Very good. Now rotate your thighs slightly outside. | | | | 0 1 3 |
| 29. | Place the necessary materials at the level of the worktable. | | | | 0 1 3 |
| 30. | Ensure there is a good lighting for examination and instrumentation of perineal area (<i>use of a flashlight may be appropriate</i>) | | | | 0 1 3 |
| 31. | Position yourself at the right side of the patient (<i>or left side if staff performing the manoeuvre is left-handed</i>). Raise patient's bed to the waist level of the staff performing the urethrovessical catheterization. | | | | 0 1 3 |

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| 32. | <p>Cross the corners of the bath blanket under the patient's thighs, leaving the corner pointing to the feet to mask the perineal area like a tent. (<i>reduced exposure of private areas limits the feeling of embarrassment while also providing better thermal comfort during urethrovessical catheterization</i>)</p> |  | 0 1 3 |
| 33. | <p>Lift the bath blanket by the corner that points to the patient's feet and roll it up to create access to the patient's perineal area. Place an absorptive towel under the patient's buttocks and below them, between the patient's thighs (<i>to prevent wetting/compromising bed linen</i>)</p> | 0 1 3 | |
| 34. | <p>Unpack the sterile kit which contain the bag for urine collection, anchor it to the bed using the specially designed hook, leaving at hand reach the end of the tube which connects the urinary bag to the Foley probe.</p> | 0 1 9 | |
| 35. | <p>Unpack the sterile kit for urethrovessical catheterization and place it at hand, taking care not to desterilize the contents.</p> | 0 1 3 | |
| 36. | <p>Apply antiseptic solutions (usually of the betadine-iodine type) on five sterile compresses which will be used to decontaminate the urinary peri-meatus area. Dispose of the empty sachets for antiseptic solution in the non-infectious waster container.</p> | 0 1 6 | |
| 37. | <p>Dispose of used gloves in the non-sharp infectious waste container. Medical hand wash. Apply a pair of sterile medical gloves while keeping sterile the wrapping to be placed between the patient's legs (<i>on the wrapping will be placed the sterile compresses with antiseptic solution used for decontaminating the area of urethral meatus</i>)</p> | 0 1 6 | |
| 38. | <p>Extract the Foley probe from its packaging and inject a volume of sterile distilled water as specified on the probe (<i>using a sterile syringe of appropriate volume which is connected to the specially designed end of the Foley probe by inserting it firmly all the way through the valve that exists at this level</i>) to fill out the balloon and thus check its integrity and functionality (<i>timely detecting of dysfunctions allows for the probe to be replaced before the actual implementation of catheterization</i>).</p> <p>Using the syringe again, empty the Foley probe balloon completely and then disconnect the syringe which now contains the exact volume of sterile distilled water needed to refill the balloon when required. Place the syringe on the sterile wrapping of the medical gloves previously used.</p> <p>Apply (2.5-5 cm in length) a sterile lubricant on the end of the probe, the end where the balloon is located. Sterile connecting of the probe to the urine collection bag.</p> | 0 1 9 | |
| 39. | <p>With the non-dominant hand, expose the urethral meatus area – distance the large labia by using fingers III and IV (which are thus desterilized!), palm facing up. <i>Take care to keep the large labia widely apart; they should not get in contact with the urinary meatus at any time throughout the manoeuvre. By doing this, fingers I and II are free to assure a steady hold on the end of the tube and the valve of the balloon comes to be better connected to the syringe when filling the balloon with sterile distilled water.</i></p> | 0 1 9 | |
| 40. | <p>Using the sterile forceps from the urethrovessical catheterization kit and the antiseptic compresses, wipe down firmly with the dominant hand and decontaminate the labial area with movements only in one-way, as follows: the inside of a large labia in anterior-posterior direction (<i>from front to back</i>); the inside of the opposite major labia in anterior-posterior direction; small labia in anterior-posterior direction; the opposite minor labia in anterior-posterior direction; the urinary meatus in an anterior-posterior</p> | 0 1 9 | |

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| | direction, using successively 5 antiseptic compresses (<i>urethrovessical catheterization is the medical manoeuvre most frequently causing nosocomial infections - infections acquired in the medical environment - therefore antisepsis rules must be strictly respected</i>). After each use, dispose of the compress in the infectious waste container and at the end, dispose of the forceps, too. On this occasion, identify the anatomic structures of the perineal area and detect the location of the urethral meatus (sometimes difficult to be identified to female patients). | | | |
| 41. | Inject 10-15 ml lubricant gel into the urethral meatus (<i>lidocaine gel can also be used to reduce the discomfort associated with the passage of the probe at urethral level, but the use of lidocaine requires an additional 5 minutes for the anaesthetic to take action</i>). After use, dispose of lubricant gel syringe in the infectious waste container. | | | 0 1 9 |
| 42. | Hold the end of the Foley probe (<i>the side with the connecting tubes</i>) in the dominant palm, with the probe making a loop (to control its length) and the opposite end that has to be introduced into the urethral meatus held at 5-7.5 cm from its tip positioned as a pen between fingers I on one side and fingers II and III on the other. | | | 0 1 9 |
| 43. | Hold the catheterized area using the non-dominant hand, keeping labia majora spread apart. (<i>by means of this manoeuvre, the urethral trajectory becomes straight, thus facilitating the advance of the probe at its level</i>) | | | 0 1 3 |
| 44. | Insert Foley probe into the urinary meatus without touching neighbouring structures. (<i>if such an incident happens, the Foley probe is contaminated and must be replaced; in case of accidental insertion inside the vagina, the probe is kept there during the urethrovessical catheterization in order to guide the subsequent correct insertion, through the urinary meatus, of a new sterile probe</i>) |  | ESSENTIAL | |
| 45. | Now, breathe several times deeply and slowly. In and out, (<i>advancing the probe during patient's exhalation</i>), slowly ... all of it. Yes, like this ... and now again. | | | 0 1 6 |
| 46. | Continue to advance the probe along the urethra in the time offered by patient expiration. | | | 0 1 3 |
| 47. | In case of perceived resistance to the advancement of the Foley probe along the urethral sphincter. Maintain a steady, but not heavy, pressure on the probe (<i>the urethral sphincter is expected to relax, allowing the advancement of the probe or alternately, the probe can be repeatedly rotated to one side and then to the other to make it advance</i>). | | | 0 1 6 |
| 48. | Conduct the loop of the probe on its progress inside the urethra and look for the appearance of urine in the probe. | | | 0 1 3 |
| 49. | Hold the distal end of the Foley probe at the level of the urethrovessical catheterization casserole to allow for the urine evacuated from the bladder to accumulate. | | | 0 1 3 |
| 50. | From this point on, insert the probe another 5 cm (<i>in order to maximize the chances for the balloon of the probe to have passed through the urethra and secured a bladder location. The filling of the balloon in its urethral location traumatizes the urinary duct and leads to unwanted complications</i>). | | | 0 1 9 |
| 51. | Using the dominant hand, bring the end of the Foley probe which includes the balloon valve to the level of fingers of the non-dominant hand, while continuing to keep the large labia spread apart (through the previously mentioned positionings). | | | 0 1 3 |

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| 52. | Using the now free dominant hand, take the syringe with sterile distilled water previously placed within reach and connect it to the end of the probe with the balloon valve. With the valve supported by fingers of the non-dominant hand, push the syringe tip all through the valve and inject the appropriate volume of distilled water to fill the balloon completely (<i>using saline solutions at this stage was abandoned after studies revealed that by the partial precipitation of NaCl solutions that occurs in time, the filling of the balloon, and implicitly its volume, diminishes</i>). |  | | | | 0 1 3 |
| 53. | In the event of pain or discomfort during the manoeuvre of filling the balloon, it is mandatory to stop injecting sterile water, empty the balloon completely and further advance the probe into the bladder. Then, try again to fill the balloon, guided by symptoms. | | ESSENTIAL | | | |
| 54. | Disconnect the syringe from the Foley probe and dispose of it in the non-sharp infectious waste container. | | | | | 0 1 3 |
| 55. | While keeping the urethral meatus area well away from any contact with the surrounding structures, use the dominant hand to gently withdraw the Foley probe backwardly, into the urethral tract until a stop is felt, generated by the placement of the balloon at the bladder level of the urethral orifice. |  | | | | 0 1 3 |
| 56. | Withdraw non-dominant hand from the level of the structures supported during the manoeuvre and relocate it at the level of the urine drainage tube. Use the dominant hand to connect the Foley probe to the tube of the urinary collection bag. (<i>This stage is therefore performed by using both hands</i>) | | | | | 0 1 3 |
| 57. | Secure the Foley probe tube while positioning it at the level of patient's inner thigh so that the tubing is stretched (<i>to prevent the balloon from sliding back inside the bladder, with subsequent leaking of urine from the bladder along the probe, which causes difficulties in maintaining patient hygiene and transforms a closed, sterile circuit into an open one</i>), though not in tension, in order to allow the patient to perform customary movements (<i>dedicated devices with a scientifically proven record of risk reduction of urethrovesical catheterization-related infection are highly recommended, rather than simply attaching the tubing with adhesive tape</i>). | | | | | 0 1 3 |
| 58. | You might experience a stinging sensation and the urge to void. This will only last until you get used to the probe, it should go away in a few minutes. | | | | | 0 1 3 |
| 59. | Wipe the perineal region with alcoholic solution compresses (<i>to remove the betadine previously used in decontamination and which could generate local irritation in case of prolonged contact with the skin/mucous membranes</i>). | | | | | 0 1 3 |
| 60. | Measure the volume of the collected urine and evaluate its appearance. | | | | | 0 1 3 |
| 61. | Adjust the tubing to avoid bending and make sure that the upper level of the collecting bag is at all times positioned lower than any segment of the tube (<i>not to create conditions for the urine from the bag to flow backwards, toward the urinary tracts – risk of contamination</i>) | | | | | 0 1 3 |
| 62. | Dispose of the remaining materials from the procedure in the non-sharp infectious waste container. | | | | | 0 1 3 |
| 63. | Remove the used gloves and throw them into the non-sharp infectious waste container. Wash hands with soap and water. | | | | | 0 1 3 |

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| 64. | You may now stretch your legs and relax. We have finished the procedure. Well done, congratulations. | | | | | 0 1 3 |
| 65. | Roll up the bed linen to cover the patient (<i>to be done under the bath blanket</i>). Remove and place bed linen in the infectious waste bag. | | | | | 0 1 3 |
| 66. | Use a rubbing alcohol swab to decontaminate all furniture surfaces that were involved in the procedure. Wash hands. | | | | | 0 1 3 |
| 67. | The urine bag will be emptied every 8 hours or as often as needed, not to get filled more than half. | | | | | 0 1 3 |
| 68. | At least daily, the genital area must be washed with soap and water to prevent the occurrence of local irritation or infection. | | | | | 0 1 3 |
| 69. | Under no reason should the urinary tube be pulled out. If something about the urinary drainage system bothers you, let us know and we will sort it out for you. | | | | | 0 1 3 |
| 70. | Be careful that the urinary tubing does not bend, become twisted or clamped because this will block the flow of urine. | | | | | 0 1 3 |
| 71. | You must also take care that the collecting bag is always placed below the level of the urinary bladder and urethrovesical tubes. | | | | | 0 1 3 |
| 72. | While wearing the probe your sexual life will change. You will be advised on these issues if you wish. | | | | | 0 1 3 |
| 73. | It is advisable to take showers instead of baths while you carry the catheter (<i>prolonged immersion favours the occurrence of urinary infections</i>) | | | | | 0 1 3 |
| 74. | Please watch out for any signs of infection. If it stings or if you have lower abdominal pains, a frequent urge to urinate or even drowsiness or unexplained fatigue, or if the urine becomes cloudy, it may be that your urine has infected (<i>to diminish the risk, a diet that acidifies the urine is highly advisable – e.g. cranberry juice</i>). Should that happen, you will require specialized medical care. | | | | | 0 1 3 |
| 75. | In order that you urinate the correct amount, we recommend that you drink at least 2 litres of fluids every day (<i>preferably, more than 3 litres - an indication to be communicated to the patient only if the associated pathologies allow the ingestion of such volumes</i>). | | | | | 0 1 3 |
| 76. | Fill out the patient's medical record with all the details related to the realisation of the procedure, accidents, complications - as the case may be, volume and aspect (colour, clarity etc.) of discharged urine, date and time. | ESSENTIAL | | | | |
| 77. | All steps must be taken for the patient's safety (<i>adjust the bed at an inferior height level and lift the lateral limiters</i>). Make sure the patient can easily reach personal objects (<i>e.g. mobile phone, book, crossword puzzle etc.</i>), the glass of water and the remote control for calling medical help. Give details about the medical schedule to follow and the time when the patient will be re-examined). | | | | | 0 1 3 |
| Total score: 300 | | <input type="radio"/> | | | | % |
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| | | <input type="radio"/> | | | | % |

Legend: - unfulfilled criterion; – partially fulfilled criterion; – completely fulfilled criterion

(score according to column P)

Selective references

1. Berman Audrey, Synder Shirlee, Jackson Chistina – Skills in clinical nursing, 6-th ed., Pearson Prentice Hall, New Jersey, 2009