


## Troubleshooting for nephrostomy tube

Problem	Potential cause	Possible solution
<b>Granulation tissue at tube exit site</b>	Normal physiological reaction	Secure tubing to avoid associated pressure injury or movement. <sup>1, 2</sup>
<b>Haemorrhage or haematuria</b>	Percutaneous nephrolithotomy (PCNL) procedure related rare complications, e.g. pseudoaneurysm	Check vital signs and severity of bleeding or haematuria. Notify senior medical officer immediately and monitor vital signs, pain, patency of nephrostomy tube and its output. Rapid identification of bleeding problem is essential so that effective treatment can be arranged. <sup>1-3</sup>
	Infection	*If significant bleeding occurs after discharge home, patient must return to the emergency department for assessment. <sup>1, 2</sup>
	Malignant renal tumour, e.g. tumour in renal pelvis	
<b>High nephrostomy outputs (diuresis)</b>	Diuresis from previously obstructed kidney. Hourly urine output >200mL for at least two consecutive hours following the relief of obstruction, such as urinary retention	Check patient's vital signs and notify medical officer urgently. Carry out strict fluid intake and output monitoring at least hourly during acute diuresis. <sup>1-2, 4</sup> Ensure patient is well hydrated. Seek medical assistance to match fluid input and output. IV fluid replacement is usually necessary. Caution in patients with significant impaired renal function. Daily blood tests to monitor electrolyte levels. <sup>1-2, 4</sup> Daily body weight might be necessary. <sup>1, 4</sup>
<b>Lack of drainage</b>	Kinked, dislodged, capped or blocked tube	Check tubing for kinks and debris or blood clots. Milk tubing to break up debris and reassess. <sup>1</sup> Notify medical officer immediately and discuss any need to flush the tube. <sup>1-2, 5-6</sup> Follow steps to unblock tube using gentle pressure by trained staff. <sup>1-2, 7</sup> Reposition the patient. Assess hydration, have the patient drink fluid. <sup>2, 4, 8</sup>

Problem	Potential cause	Possible solution
<b>Leakage of urine from the connector of pigtail nephrostomy tube</b> Figure 1: Thread in the pigtail nephrostomy tube is too long 	Connector is a bit loose	Tighten connection.
	The thread in the pigtail nephrostomy tube was a bit long (see Figure 1). Drainage system is not watertight, resulting in urine leak at the junction between nephrostomy tube and drainage bag	Use aseptic technique (this procedure is performed by trained staff): <ul style="list-style-type: none"> <li>• Unscrew the connector and inspect the visible tip of the thread in the nephrostomy tube.</li> <li>• If the thread is long, cut it short with a stitch cutter. The cut segment is then removed and inspect on a piece of gauze square.</li> <li>• Wipe the tubing clean with antiseptic solution and re-establish a closed and secured drainage system.</li> </ul>
<b>Leakage of urine from nephrostomy exit site</b>	Kinked or twisted drainage tubing	Release twisted or kinked tubing, adjust securement device or use wider waterproof adhesive tape to align drainage tubing lower than the nephrostomy site. <sup>1-2, 6, 8-9</sup>
	Defective drainage bag	Change drainage bag. <sup>1-2</sup>
	Size of the wide-bore Foley catheter is smaller than the incision made in percutaneous renal stone surgery	Apply skin protective wipe, use absorbent dressing or Comfeel wafer, inspect insertion site regularly and change dressing as required. Educate patient. <sup>1, 6-10</sup> Notify medical officer.
<b>Localised pain</b>	Dislodged or blocked tube	Check tube for signs of blockage, bleeding or infection. <sup>1-2,4,7-8</sup>
	Infection or procedure-related injury	Check vital signs. Notify medical officer of abnormalities. <sup>1-2, 7-8</sup>

Problem	Potential cause	Possible solution
<b>Nephrostomy site skin irritation (redness, swelling, tenderness or pain)</b>	Urine or blood	Keep site dry and clean. <sup>1,4, 6-9</sup>
		Apply skin protective wipe
	Allergic reaction	Apply skin protective wipe. Use different adhesive product.
	Inflammation	Remove traces of antiseptic solution, such as betadine, with sterile saline 0.9%. Keep tube site clean and dry. <sup>1</sup>
		Secure nephrostomy tube with adhesive dressing or drain fixation device to stop tugging and movement causing irritation. <sup>1-2, 4, 6-9</sup>
		Check exit site and change dressing at least every seven days. Increase frequency of dressing change when indicated. <sup>1, 6, 9</sup>
<b>Nephrostomy tube falls out</b>	Failed drain locking mechanism	Keep nephrostomy tube in a plastic bag for inspection.
	Loose retaining suture and/or failed securement device	Notify medical officer immediately. Cover site with a sterile absorbent dressing. <sup>6</sup>
<b>Urinary tract infection (UTI)</b>	Foreign body in renal pelvic – renal calculi	Discuss patient management with medical officer.
	Bacterial or fungal UTI in patients with intermediate or long term nephrostomy tube	Collect urine sample from nephrostomy tube. Send urine sample for culture and sensitivities. <sup>1-2, 4</sup>  Treat UTI based on culture results, patient medical conditions and treatment guidelines. <sup>1-2, 4</sup>

## References

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