medCOMP®

Peritoneal Catheters and Kits

For Acute and Chronic Peritoneal Dialysis
(Littleford-Spector) Technique

使用說明書
適用於急性和慢性腹膜透析
（Littleford-Spector）技術

使用说明书
用于急性和慢性腹膜透析
（Littleford-Spector）技术

TABLE OF CONTENTS

Sterilized with ethylene oxide. Sterile and non-pyrogenic in unopened and undamaged package.

CAUTION: Federal law (USA) restricts this device to sale by or on the order of a physician.

READ ALL INSTRUCTIONS, WARNINGS, AND CAUTIONS CAREFULLY PRIOR TO USE.

DESCRIPTION:

Medcomp's peritoneal catheters are made of translucent silicone rubber tubing containing a radiopaque stripe.

A variety of lengths and cuff configurations are available in straight or curled catheters styles.

INDICATIONS:

The peritoneal catheter is indicated for acute and chronic peritoneal dialysis.

CONTRAINDICATIONS:

Infected anterior abdominal wall.

Patients with extensive intra-abdominal adhesions.

Conditions resulting in diaphragmatic tears or abdominal-chest communication.

Unresolved peritonitis.

Severe respiratory insufficiency: distending the abdomen with large amounts of dialysate may further compromise pulmonary function.

The catheter is not intended for the Tenckhoff trocar method of insertion, nor is it meant to be used for any purpose other than indicated.

Recent intestinal surgery.

POTENTIAL EARLY COMPLICATIONS:

bleeding
dialysate leak
obstruction (one- or two-way)
ileus
viscus perforation
abdominal pain
subcutaneous hematoma

POTENTIAL LATE COMPLICATIONS:

exit site infection
tunnel infection
external-cuff extrusion
obstruction by omentum
dialysate leak
peritonitis
sepsis
infusion pressure or pain
organ erosion
genital edema
allergic reaction

WARNINGS AND PRECAUTIONS:

- The medical techniques and procedures described in these instructions do not represent ALL medically acceptable protocols, nor are they intended as a substitute for the physician's experience and judgment in treating any specific patient.
- The catheter should be inserted and removed only by a qualified, licensed physician or other health care practitioner authorized by and under the direction of such physician.
- Observe sterile technique at all times when handling catheter or insertion components.
- Caution is necessary to avoid injuring the abdominal viscera, particularly when using the sharp introducer needle. Do not use excessive force when inserting the catheter and other components of the Kit. Carefully confirm correct tip placement before beginning the subcutaneous tunnel.
- Use the guidewire straightener to insert the "J" end of the guidewire into the introducer needle. **Do not insert or withdraw the guidewire forcibly from any component; the wire could break or unravel.**
- Overtightening catheter connections can crack some adapters.
- Clamping the catheter repeatedly in the same spot could weaken the tubing: change the position of the clamp regularly to prolong the life of the tubing. Avoid clamping near the adapter.
- Use only smooth-jawed forceps for clamping when not using the clamp supplied with the catheter.
- Exercise caution when using sharp instruments near the catheter.
- Catheter tubing can tear when subjected to excessive force or rough edges
- Inspect the catheter frequently for nicks, scrapes, cuts, etc., which could impair its performance.

- **Do not use ointments on any part of the catheter. Exposure to these agents may cause catheter damage.**
- Catheter and kit components are for single patient use; discard; do not resterilize after use.
- Do not use components if package has been previously opened or damaged.
- Do not use the catheter or components if they appear damaged or defective.
- To avoid exposure to blood-borne pathogens, observe universal precautions during use.
- Remove the catheter as soon as it is no longer necessary. Discard after use: the catheter is for one time insertion only.
- Do not use iodine-based disinfectants for exit site care. The recommended disinfectant solution is chlorhexidine gluconate (i.e. Chloraprep).

DETERMINING CATHETER AND SUBSECTION LENGTH:

The catheter may need to be customized before being used in a child or unusually obese patient. As a rule, the required intra-abdominal catheter length for adults corresponds closely to the distance between the upper rim of the symphysis pubis and the umbilicus when the patient is lying supine (except in obese patients with a grossly protuberant or pendulous lower abdomen.) The depth of the abdominal subcutaneous adipose tissue after implantation at the usual site (about 3 cm below the umbilicus) gives the catheter sufficient length to reach deep into the pelvic gutter. If the straight catheter is too long for small adults, up to 5 cm can be pared off the distal intra-abdominal segment. In unusually tall subjects, the implantation site can be moved downwards by a few centimeters.

For pediatric straight catheter, both the intra-abdominal segment and the subcutaneous segment can be shortened proportionally. The distance between umbilicus and symphysis pubis is used as a guide for the length of the intra-abdominal catheter segment. At least 2 cm of the most distal intra-abdominal segment should have wall perforations. The external segment should always be about 20 cm for ease of handling. For obese patients, a longer intra-abdominal segment may be required.

IMPLANTING THE CATHETER:

Beginning with the description in 1968 by Tenckhoff and Schechter[1] of the peritoneal access catheter, several effective methods for insertion of this device have come into use. Many physicians prefer to use an open method[2] of implantation, performing all steps under direct vision and securely closing each layer of the abdominal wall to prevent a dialysate leak. The open technique permits omentectomy, which has been recommended for pediatric patients.[3] Other authors have described a closed method using a guidewire and Vascu-Sheath.[4]

Patients who have had previous surgery, in whom it may be difficult to position correctly a peritoneal catheter, may be candidates for peritoneoscopic placement. [5, 6]

Instructions for implanting a peritoneal catheter by both the open and closed (percutaneous) methods are presented below. It is suggested that physicians with limited previous experience first consult the published literature and enlist the assistance of an experienced colleague.

Choosing the Exit Site:

Straight Catheters:

The catheter may be implanted at the medial border of the rectus muscle between the umbilicus and symphysis pubis, through the rectus muscle just below belt line, or at the lateral border of the rectus muscle, in a line between the umbilicus and anterior iliac crest. Do not implant at the belt line, beneath a scar or fat fold, in areas of known or suspected intra-abdominal adhesions, or in areas of abdominal or skin infection. Determine fat folds while the patient is sitting. It also is useful to consider the patient's preferences and whether he or she is right- or left-handed.

Preparing the Patient:

Ask the patient to empty both bladder and bowel. An enema may be given if requested by the physician. Explain the procedure to the patient. This will enable the patient to cooperate during insertion. Bedside insertion, in selected patients, is acceptable provided strict aseptic technique is observed.

1. Shave the insertion area as requested. Some physicians prefer the use of an electric razor to maintain skin integrity. Scrub the area with bactericidal agent selected.
2. Prepare a sterile field. Those persons handling the components should perform a surgical scrub and then don appropriate surgical attire. The patient should also wear a mask.
3. Place sterile drapes and anesthetize the skin and surrounding tissues of the tunnel with local anesthesia.

NOTE: The catheter can be inserted either surgically or percutaneously through a Vascu-Sheath introducer. Procedures for both methods follow.

A. Open Surgical Insertion Procedure:

1. To reduce leakage and hernia risk, we recommend insertion through the rectus sheath and muscle. Make a 3-4 cm transverse incision through the skin and subcutaneous tissue. Ensure hemostasis, preferably with cauterization. The anterior rectus sheath is exposed and may be infiltrated with more local anesthetic. Make a transverse incision in the anterior rectus sheath.
2. Separate the rectus muscle down to the posterior rectus sheath. Place a purse string suture through the posterior rectus sheath, transversalis fascia, and peritoneum. Make a small incision, approximately 5-6 mm, in the peritoneum to accommodate the catheter.
3. Immediately prior to insertion, soak the catheter in sterile saline. Gently squeeze the cuffs to expel air.
4. Thread the catheter onto a long, blunt stiffening stylet. To protect the bowels, a tiny portion of the catheter overlaps the tip of the stylet. Insert the catheter caudally into the deep pelvis if there is no resistance. Correct positioning can be confirmed in the awake patient by a sensation of "rectal pressure." When the catheter is ½ to ¾ inserted, remove the stylet and push the catheter the rest of the way into the pelvis.
5. Tie the purse string suture securely. Position the cuff longitudinally on the posterior rectus sheath. Make a small stab wound in the anterior rectus sheath above the transverse incision and pull the catheter through this incision. Use another purse string suture here to make the area watertight.
6. Close the anterior rectus sheath with a nonabsorbable suture in an uninterrupted fashion. This will help to avoid leakage.
7. Create a subcutaneous tunnel (see one of the methods in "Creating a Subcutaneous Tunnel" following).

   After creating the subcutaneous tunnel:

8. Attach the adapter and clamp provided. Ensure there are no kinks or twists in the catheter.
9. Attach a transfer set and assess catheter function. Check the wound for leaks and hemostasis.
10. At least 200 ml of solution should drain within one minute. If good flow is obtained, close the subcutaneous tissue and the entry site with absorbable suture. Do not suture the exit site. Complete incision closure with Steri-strips.
11. To prevent accidents, assure the security of all caps and line connections prior to and between treatments. Place several layers of gauze dressings over the area and secure. The dressing should remain in place for one week unless there is bleeding or excessive drainage at the site.

    Postpone dialysis for 1 to 3 days if possible (2 weeks is optimal) to allow proper healing. If dialysis is done sooner, the patient should be in a supine position with reduced volume exchanges of 500 ml. For patients who will continue on intermittent dialysis, increase the initial volume gradually, providing it is tolerated well.

CREATING A SUBCUTANEOUS TUNNEL:

With a Peritoneal Tunneling Stylet:

1. If necessary, anesthetize the skin exit site approximately 6 cm to one side of the entry site. Make a 5 mm incision.
2. For a curved tunnel, place the tunneling stylet between the two incision sites and bend the stylet to match the desired shape of the tunnel (be sure the cap is on the plastic end of the stylet before creating the curve).
3. Wet the subcutaneous cuff thoroughly with saline.
4. Attach the catheter to the tunneling stylet by pushing the catheter over the plastic end of the stylet until it meets the hub. Slide the cap over the connection. Remove the catheter clamp.
5. Insert the tip of the tunneling stylet into the primary incision. Thread the stylet through the tissue, creating a curved subcutaneous tunnel to the exit site. The catheter should exit at a downward angle to the skin.

   Note: Some physicians may prefer to make a straight tunnel. For efficient dialysis, slant a straight tunnel slightly upwards to lessen the risk of catheter migration.
6. Spread the tunnel entrance with a hemostat to guide the cuff into the tunnel.
7. Pull the tunneling stylet through the exit site, positioning the catheter as desired in the tunnel.

8. Position the cuff 2-3 cms from the exit site, deep subcutaneously, to avoid cuff infection or extrusion. Clamp the catheter.
9. Detach the tunneling stylet carefully and discard.

B. Percutaneous Insertion Procedure (Modified Seldinger Technique Using Vascu-Sheath Introducer):

Procedure:

1. Make a 1.5 to 2.0 cm incision at the selected abdominal entry site.
2. Use blunt dissection to form a pocket for the preperitoneal cuff (if applicable)
3. Attach the introducer needle to a 10 cc syringe filled with heparinized saline. Insert the needle through the incision into the peritoneal cavity and carefully inject the saline. Aspiration of peritoneal fluid indicates the needle tip is in the peritoneal cavity.

   Caution: Do not advance the needle further; it could injure the viscera.
4. Immediately remove the syringe and insert the flexible end of the guidewire through the introducer needle, directing it caudally and posteriorly. Advance the wire approximately one-fourth its length (approximately 18 cm).
5. Withdraw the introducer needle, leaving the guidewire in the peritoneum.
6. Check that the dilator is locked within the introducer sheath to prevent separation of the two components during insertion.
7. Thread the Vascu-Sheath introducer over the end of the guidewire. **Caution: To avoid damaging the tissue and the sheath tip, do not let the sheath advance over the dilator. The two must be grasped as one unit.**

   Advance the introducer into the peritoneum, gently rocking it back and forth to assist passage through the tissue. **Do not force the introducer into the peritoneum. Do not insert it further than necessary for the patient's size and access site. Ensure that the guidewire does not move further into the peritoneum.**
8. Hold the sheath in place and gently remove the dilator and guidewire.
9. Use a straightening stylet to insert the coiled catheter. Lubricate the catheter with sterile normal saline and insert the stylet into the catheter.

   NOTE: If not using a catheter straightening stylet, lubricate the catheter with sterile, water-soluble lubricant.

   Roll the cuffs between thumb and index finger to expel air. Position the stylet approximately 4 mm above the tip of the catheter. Clamp a hemostat on the stylet **(do not clamp the catheter)** to prevent it from advancing further towards the tip. **Caution: Do not insert the stylet beyond the tip of the catheter. This can cause the injury during insertion.**
10. Insert the catheter with catheter stylet into the sheath, directing it towards the desired position.
11. Remove the catheter straightening stylet. Confirm drainage by infusing and draining dialysate.
    NOTE: Confirming drainage immediately after insertion does not guarantee permanent function. There is a five percent incidence of drainage problems caused by catheter migration occurring within a week after placement.[7]
12. Grasp the tabs of the sheath and, while holding the catheter in place, pull the tabs outward simultaneously to peel the sheath from the catheter.
13. Create a subcutaneous tunnel (see one of the methods in the preceding section "Creating a Subcutaneous Tunnel").

    After creating the subcutaneous tunnel:
14. Attach the adapter and clamp provided and ensure there are no kinks or twists in the catheter. Attach a transfer set and assess catheter function.
15. If there is no leakage of solution, and good outflow is obtained, close the subcutaneous tissue and the entry site with absorbable suture in a subcuticular fashion. Do not suture the exit site. Complete incision closure with Steri-strips.
16. To prevent accidents, assure the security of all caps and line connections prior to and between treatments. Place several layers of gauze dressings over the area and secure. The dressing should remain in place for one week unless there is bleeding or excessive drainage at the site.
    NOTE: Confirm proper catheter placement with fluoroscopy before use.
    Postpone dialysis for 1-3 days if possible (2 weeks is optimal) to allow proper healing. If dialysis is done sooner, the patient should be in a supine position with reduced volume exchanges of 500 ml. For patients who will continue on intermittent dialysis, increase the initial volume gradually, providing it is tolerated well.

CATHETER REMOVAL:

Elective removal of the uninfected catheter is an outpatient procedure. Double cuff catheters may require two incisions, one over each cuff, though many physicians prefer simply to reopen the original incision to avoid creating another scar.

Perform surgical scrub with particular emphasis on the umbilicus and create a sterile field. Administer anesthesia to the area of the deep cuff. If the cuff cannot be palpated, one can put traction on the catheter and dissect along its path. Sharp dissection of the cuff is usually necessary because of connective tissue ingrowth.

Deep or Preperitoneal Cuff:

Identify the deep cuff and the distal sinus tract leading from the cuff to the peritoneal cavity. Incise the distal sinus tract, taking care not to transect the catheter.

Close the distal sinus tract with a purse string suture or mattress stitch. After hemostasis is secure, close the wound in layers.

Subcutaneous Cuff:

If it is necessary to make a second incision to release the subcutaneous cuff, infiltrate the skin and area surrounding the subcutaneous cuff with local anesthesia. Make an incision either by extending the exit site or directly over the cuff. Dissect the skin cuff free. Pull out the catheter and close the incision.

Site Opening Care:

In most cases, the “old” exit site sinus tract is excised and the small wound left open for drainage.

WHEN INFECTION IS PRESENT:

Exit Site Infection:

If the exit site is infected, fill the abdomen with 500 cc dialysate containing an appropriate antibiotic before removing the catheter. After removal, approximate the wound edges loosely and allow the site to drain.

Tunnel Infection – No Peritonitis:

If the tunnel is infected, but there is no peritonitis, fill the abdomen with 500 cc dialysate containing an appropriate antibiotic before catheter removal. Systemic therapy may also be indicated. During removal, avoid the area of the deep cuff and subcutaneous sinus tract.

Close the peritoneum, mobilize the deep cuff and subcutaneous sinus tract and sew a Penrose drain to the catheter. Remove the subcutaneous cuff and excess catheter. After the catheter is freed, pull the catheter and drain through the remnant of the sinus tract, leaving the drain protruding from both incisions. Irrigate both wounds with antibiotic and partially close them. Over the next few days, pull the drain gradually out the exit site as the tissue inflammation subsides.

Tunnel Infection – Peritonitis:

Peritonitis related to a peritoneal dialysis catheter can be a serious problem. Therefore, it should be treated aggressively. In some cases, the catheter should be removed immediately and the patient treated with intravenous antibiotics. Other patients respond to intraperitoneal antibiotics and the catheter need not be removed. Treatment should be individualized and is at the physician’s direction.

NOTE: An option is to allow the incisions to heal by secondary intention.

REFERENCES:

1. Tenckhoff H, Schechter H: A bacteriologically safe peritoneal access device. Trans Am Soc Artif Int Organs 1968; 12:181-187.
2. Nghiem DD: A technique of catheter insertion for uncomplicated peritoneal dialysis. Surg Gynecol Obstet 1983; 157:573-576.
3. Orkin BA, Fonkalsrud EW, Salusky IB, et al: Continuous ambulatory peritoneal dialysis catheters in children. Arch Surg 1983; 118:1398-1402.
4. Maher ER, Stevens J, Murphy C, Brown EA: Comparison of two methods of Tenckhoff catheter insertion. Nephron 1988; 48:87-88.
5. Brunk E: Peritoneoscopic placement of a Tenckhoff catheter for chronic peritoneal dialysis. Endoscopy 1985; 17:186-188.
6. Cronen PW, Moss JP, Simpson T, et al: Tenckhoff catheter placement: Surgical aspects. Amer Surgeon 1985; 51:627-629.
7. Perras, Susan, MSN, RN; Anthony Zappacosta, M.D.; Maria Mattern, R.N. “ Comparison of Two Techniques for Percutaneous Peritoneal Dialysis Catheter Placement.” ANNA Journal 12/No.5 (October 1985) 307-310.

ADDITIONAL READING MATERIAL:

Catheter and Exit Site Practices. Peritoneal Dialysis Bulletin, Vol. 7/No.2 (April-June 1989). Tenckhoff, H., ed. Chronic Peritoneal Dialysis Manual (Seattle: University of Washington, 1974).

Twardowski ZJ. 1997. Peritoneal catheter placement and management. In *Therapy of Renal Disease and Related Disorders* (The Netherlands: Massry SG).

產品由環氧乙烷進行滅菌處理。包裝未打開、未破損時內容物處於無菌、無致熱源狀態。

注意：美國聯邦法律規定該設備必須由醫生或憑醫囑銷售。

使用前，請仔細閱讀說明、警告和注意事項。

產品描述
Medcomp生產的腹膜透析導管由帶不透射線條的半透明矽橡膠管組成。
腹膜透析導管有多種長度與套環，有直導管或彎導管設計。

適應症
腹膜透析導管適用於急性和慢性腹膜透析。

禁忌症
腹前壁感染
腹內大範圍粘連患者
導致橫膈膜撕裂或腹胸粘連的情況
腹膜炎未治癒
嚴重呼吸功能不全：大量透析液擴張腹部可能會導致肺功能進一步降低。
該導管不能用於Tenckhoff 套管針置管法，也不能用於任何非適應症用途。
近期接受了腸胃手術

潛在早期併發症
出血　　內臟穿孔
透析液滲漏　　腹痛
阻塞（單向或雙向）　　皮下血腫
腸梗塞
潛在後期併發症
出口部位感染　　敗血症
通道感染　　輸注壓力或疼痛
外套環錯位　　組織糜爛
被網膜堵塞　　生殖器水腫
透析液滲漏　　過敏反應
腹膜炎

警告與注意事項
- 本說明中所描述的醫療技術和過程並未包含所有臨床可接受的規則，也不能替代醫生對治療特殊病人時的經驗和判斷。
- 導管的穿刺、操作及拔除只能由合格的註冊醫生執行，或在醫生指導下由合格的保健專家執行。
- 操作導管或穿刺用配件時必須始終採用無菌技術。
- 操作過程中特別是使用鋒利穿刺針時必須謹慎小心，以免腹內器官受到損傷。在插入導管和包裝內其他組件時，切勿用力過大。開始建立皮下通道之前，必須仔細確認，確保導管尖端位置正確。
- 利用導絲拉直器把導絲的“J”形尖端插入穿刺針。切勿強行把導絲插入任何組件，或者強行把導絲從組件內拔出；否則，導絲可能斷裂。
- 反復過度旋緊針筒或注射帽會減少接頭壽命，可能導致接頭損壞。
- 在導管同一部位反復夾閉可能會使導管強度變弱。定期更換夾閉位置以延長導管壽命。避免夾閉在靠近接頭處。

- 夾閉時若不使用與導管一起提供的管夾，則只能使用平口鉗。
- 在導管附近使用銳器時，必須特別小心。
- 導管受力過大或被棱邊衝撞時，可能撕裂。
- 經常檢查導管有無裂痕、刮傷或切口等，這些缺陷會降低導管的性能。
- 導管和套件組件都是一次性的；患者用後丟棄，切勿對其進行再滅菌。
- 如果包裝先前已開封或破損，不要使用任何配件。
- 如果導管或配件從外觀上看有損壞或缺陷，不要使用。
- 為了避免接觸血液傳染病原體，在使用過程中必須遵從通用注意事項。
- 不再需要導管時應立即取出。用後丟棄：導管只能置入一次。
- 護理出口部位時切勿使用含碘消毒液。推薦使用葡萄糖酸氯己定（即Chloraprep）作消毒液。

確定導管和節段長度

對於兒童或異常肥胖患者，導管使用前可能需要量體定制。通常來說，成人腹內導管長度應為患者仰臥時恥骨聯合上緣到臍之間的距離（下腹部明顯隆起或下垂的肥胖患者除外）。常用部位（臍下約3 cm處）置入導管後腹部皮下脂肪組織的厚度可以保證導管深入骨盆的長度足夠長。如果直導管對瘦小成人來說長度過長，則可在導管遠端腹內段切掉最多5 cm。超高患者的置入深度可以下移幾釐米。

兒科用直導管，腹內段和皮下段可以按比例縮短。臍到恥骨聯合的距離用作腹內段長度參考。最遠端腹內段至少2 cm應該會壁穿孔。通常，外段應該長20 cm左右，以便操作。 對於肥胖患者，可能腹內段需要長一點。

置入導管

自Tenckhoff 和Schechter1於1968年開始介紹腹膜導管起，這種器械的數種有效置入法開始使用。許多醫師偏愛使用開放式置入法2，在直視下執行所有步驟，並且牢固縫合各腹壁層以防透析液洩漏。開放式置管技術允許執行網膜切除，現已推薦這種技術用於兒科患者3 。其他作者介紹了使用導絲和Vascu-Sheath的封閉式置管法4。

先前進行過外科手術的患者，由於腹膜透析導管可能難以放置準確，可能是腹腔鏡置管術的候選人。5,6

下文介紹腹膜透析導管的開放式和封閉式（經皮）置管方法。建議經驗有限的醫師在置入透析導管之前先查閱發表文獻並取得有經驗同事的協助。

選擇出口部位

直導管

導管可以置入臍和恥骨聯合之間的直肌內側緣處，正好通過腹線下方，或者置入直肌側緣，位於臍與髂脊前部之間的直線上。切勿置入腹線上、疤痕或脂肪褶皺下方、已知或懷疑腹內粘接區、腹部或皮膚感染區。在患者坐著時確定脂肪褶皺。考慮患者喜好以及是否是左撇子也非常有用。

患者準備

要求患者排空膀胱和腸。如醫師要求，可以使用灌腸劑。向患者說明手術步驟，以使患者在插管過程中予以配合。某些患者可以在床旁進行插管，但必須嚴格遵從無菌技術。

1. 按要求剃光插管區體毛。一些醫師喜歡使用電動剃刀以保持皮膚完整。利用選定的殺菌劑擦洗插管區。
2. 準備一個無菌區。操作產品配件的人員應進行外科清潔並穿戴適當的手術服。患者也應該戴上防護罩。
3. 鋪放手術巾，利用局麻藥物麻醉皮膚和通道周邊組織。

注：導管可通過外科方法插入，也使用Vascu-Sheath穿刺鞘經皮插入。兩種方法的步驟如下：

A. 開放式外科插管步驟

1. 為了降低滲漏和疝氣風險，我們建議穿過腹直肌鞘和直肌插入腹膜透析導管。作一穿透皮膚和皮下組織的 3-4 cm橫向切口。止血，首選燒烙法。露出腹直肌前鞘，可以利用更多局部麻醉劑進行浸潤麻醉。在腹直肌前鞘內作一橫向切口。
2. 向下分離直肌到腹直肌後鞘。放置一根通過腹肌後鞘、腹橫肌膜和腹膜的荷包縫合線。在腹膜內作一個小切口，約5-6 mm，以容納導管。
3 在插管之前，用無菌鹽水浸泡導管，並輕輕擠壓套環，以排除空氣。
4. 導管連接到一根硬鈍長管心針上。為了保護腸道，導管的極細部與管心針尖端疊合。導管尾端在無阻礙情況下插入骨盆深部。 可以通過蘇醒患者有無“直腸受壓”感確認導管位置是否正確。當導管插入½ ～ ¾時，取出管心針，並把導管推入骨盆。
5. 系牢荷包縫合線。套環縱向放於腹直肌後鞘上。在橫向切口上方的腹直肌前鞘內作一個小穿刺口，並通過該切口拉出導管。使用另一根荷包縫合線縫合該切口使之不漏液。
6. 利用連續不吸收縫合線縫合腹直肌前鞘。這樣做有助於避免滲漏。
7. 建立皮下通道（方法參加下文“建立皮下通道”）。

建立皮下通道後：

8. 連接提供的接頭和管夾。確保導管無扭結。
9. 安裝輸送組件並評估導管的功能。檢查傷口有無滲漏和止血。
10. 1分鐘內至少排出200 ml 溶液。如果流量滿足要求，則利用可吸收縫合線縫合皮下組織和進口部位。不要縫合出口部位。用無菌帶關閉切口。
11. 為了避免出現意外，治療之前和兩次治療期間必須確保所有封蓋和管路連接牢固。在治療區放置幾層紗布，並固定。如果該部位沒有發生出血或排液過多，則紗布至少保留一周。

    可能情況下，透析延期1 - 3 天（兩周最佳），以適當癒合。如果立即執行透析，則患者應該仰臥以降低交換體積，可降低500 ml。如果患者進行間歇透析，則逐漸增大初始體積，如果患者能夠忍受。

建立皮下通道

利用腹膜通道針

1. 如果需要，麻醉距進口部位約6 cm 處的皮膚出口部位。切一個5 mm的切口。
2. 對於彎曲通道，把通道針置於兩個切口部位之間，並彎曲探針使之與期望通道形狀匹配（在建立彎曲通道之前，確保封蓋裝在探針的塑膠端）。
3. 用鹽水徹底浸濕皮下套環。
4. 把導管裝到通道針上，並推動導管使之在探針塑膠端移動，直至插入插孔。把封蓋滑動到連接處。取下導管夾鉗。
5. 把通道針尖端插入主切口內。轉動探針使之穿透組織，建立一條通向出口部位的皮下通道。導管應與皮膚成銳角穿出。
   注：一些醫師可能更喜歡建立直通道。為了有效透析，直通道應該稍微向上傾斜，以降低導管移位風險。
6. 利用止血鉗擴張通道入口，把套環導入通道。
7. 從出口部位拉出通道針，按要求把導管定位在通道中。
8. 使套環位於距出口部位皮下 2-3 cm處，以免套環導致感染或被擠壓出來。夾緊導管。
9. 小心分離出通道針，並丟掉。

B. 經皮插管法（可剝離鞘利用改良的Seldinger技術）
步驟

1. 在選定腹部入口位置切出一個1.5- 2.0 cm 的切口。
2. 利用鈍器解剖法為腹膜前套環建立一個囊袋（如適用）。
3. 把穿刺針裝到一個裝有肝素鹽水的10 cc注射器上。把針通過切口插入腹膜腔內，並小心地注射鹽水。抽吸到腹膜液表明針尖進入了腹膜腔
   注意：切勿進一步推進針，否則可能導致內臟受損。
4. 立即取出注射器，並把導絲撓性端朝尾端或後部方向插入穿刺針。導絲推入約1/4長度（約18 cm）。
5. 取出穿刺針，把導絲留在腹膜內。
6. 確認導管鞘內的擴張器處於鎖定狀態，以防兩個配件在插入過程中分離。
7. 可剝離穿刺鞘接在導絲尾端上。注意：為了避免組織損傷和鞘尖端損壞，不要把導管鞘推至擴張器上。兩個配件必須當作一個單元抓握。
   把導管鞘推入腹膜，輕輕來回搖動以有助於其穿過組織。切勿用力強迫導管鞘進入腹膜。插入長度不要超過患者尺碼和入口部位要求長度。確保導絲沒有進一步推入腹膜。
8. 把導管鞘固定到位，並輕輕取出擴張器和導絲。
9. 把矯直探針插入捲曲導管。利用無菌生理鹽水潤滑導管，並把探針插入導管。
   注：如果沒有使用導管矯直探針，則利用無菌水溶潤滑劑潤滑管心針。
   用食指和拇指碾壓套環以排出空氣。把管心針置於距導管尖端上方約4 mm處。用止血夾閉緊探針（不要夾閉導管），以防其進一步朝尖端推進。注意：切勿把管心針插出導管尖端外。否則，可能在插入過程中導致受傷。

10. 利用導管探針把導管插入導管鞘，朝前推進至期望位置。
11. 取出導管矯直管心針。通過輸注和排泄透析液確認排泄量。
注：插管後立即確認排泄量，不能保證功能一直正常。5%的排泄問題是在導管置入後一周內發生移位引起。7
12. 在把導管固定到位的同時，抓握住導管鞘的凸塊，並向外拉凸塊，直至導管鞘與導管剝離。
13. 建立了一條皮下通道 （參見前節內給出的方法之一“建立皮下通道”）。

建立皮下通道後：
14. 安裝提供的接頭和夾鉗，並確保導管無扭曲。安裝輸送組件並評定導管的功能。
15. 如果無透析液滲漏且流量滿足要求，則利用可吸收縫合線縫合皮下組織和進口部位。不要縫合出口部位。利用無菌帶完全縫合切口。
16. 為了避免出現意外，治療之前和兩次治療期間必須確保所有封蓋和管路連接牢固。在治療區放置幾層紗布，並固定。如果該部位沒有發生出血或排液過多，則紗布至少保留一周。
注：使用之前利用透視確認導管位置正確。
可能情況下，透析延期1 - 3 天（兩周最佳），以適當癒合。如果立即執行透析，則患者應該仰臥以降低交換體積，可降低500 ml。如果患者持續進行間歇透析，則逐漸增大初始體積，以使患者能夠忍受。

取出導管
有選擇的取出未感染導管是一種門診患者手術 。取出雙套環導管可能需要兩個切口，每個套環上方各一個，不過，許多醫師更喜歡重新打開原始切口，以免產生另一道疤痕。
以臍為重點部位執行手術擦拭清洗，建立一個無菌區。把麻醉機注入深部套環區。如果不能觸及到套環，則可以牽引導管，沿其路徑解剖。由於連接組織向內生長，通常需要採用銳器解剖法進行解剖

深部或腹膜前套環
識別深部套環以及從套環延伸到腹膜的末梢竇道。切割末梢竇道，必須小心，以免橫切到導管。
採用荷包縫合或外翻縫合，縫合末梢竇道。止血固定後，用紗布包紮傷口。

皮下套環
在需要時，可切出第二個切口以釋放皮下套環，用局部麻醉劑浸潤麻醉皮膚和皮下套環四周。通過擴張出口部位產生一個切口，或直接在套環上方切出一個切口。 解剖皮膚釋放套環。拉出導管並縫合切口。

開口部位的護理
大多數情況下，“舊”出口部位的竇道被切除，小傷口不縫合，以用於排液。

出現感染時
出口部位感染
如果出口部位感染，則在取出導管前，向腹部充填500 cc含適當抗生素的透析液。取出導管後，適當鬆開創緣，以便該部位排液。

通道感染 ——無腹膜炎
如果通道感染，但沒有出現腹膜炎，則在取出導管

前，向腹部充填500 cc含適當抗生素的透析液。也可採用全身治療。在取出導管過程中，避免損傷深部套環和皮下竇道。

縫合腹膜，調動深部套環和皮下竇道，並且為導管縫合一個Penrose 排液口。取出皮下套環和過長導管。導管被釋放後，拉出導管並通過剩餘竇道排液， 從兩個切口突出來的排液管置之不管。用抗生素沖洗兩個傷口，並部分縫合它們。幾天後，組織炎症消退後，把排液管慢慢拉出出口部位。

通道感染 —— 有腹膜炎
與腹膜透析管相關的腹膜炎是一種嚴重問題。因此，應該積極治療。在一些情況下，應該立即取出導管，並且患者靜脈抗生素進行治療。腹膜內抗生素有療效的患者無需取出導管。治療應該是個體化治療，並且應該尊稱醫師的指示 。
注：一種允許通過二次癒合使切口癒合的選件。

參考文獻

1. Tenckhoff H, Schechter H: A bacteriologically safe peritoneal access device. Trans Am Soc Artif Int Organs 1968; 12:181-187.
2. Nghiem DD: A technique of catheter insertion for uncomplicated peritoneal dialysis. Surg Gynecol Obstet 1983; 157:573-576.
3. Orkin BA, Fonkalsrud EW, Salusky IB, et al: Continuous ambulatory peritoneal dialysis catheters in children. Arch Surg 1983; 118:1398-1402.
4. Maher ER, Stevens J, Murphy C, Brown EA: Comparison of two methods of Tenckhoff catheter insertion. Nephron 1988; 48:87-88.
5. Brunk E: Peritoneoscopic placement of a Tenckhoff catheter for chronic peritoneal dialysis. Endoscopy 1985; 17:186-188.
6. Cronen PW, Moss JP, Simpson T, et al: Tenckhoff catheter placement: Surgical aspects. Amer Surgeon 1985; 51:627-629.
7. Perras, Susan, MSN, RN; Anthony Zappacosta, M.D.; Maria Mattern, R.N. “ Comparison of Two Techniques for Percutaneous Peritoneal Dialysis Catheter Placement.” ANNA Journal 12/No.5 (October 1985) 307-310.

附加資料

Catheter and Exit Site Practices. Peritoneal Dialysis Bulletin, Vol. 7/No.2 (April-June 1989).
Tenckhoff, H., ed. Chronic Peritoneal Dialysis Manual (Seattle: University of Washington, 1974).
Twardowski ZJ. 1997. Peritoneal catheter placement and management. In Therapy of Renal Disease and Related Disorders (The Netherlands: Massry SG).

切勿再次使用

STERILE EO 環氧乙烷滅菌

查閱隨機文件

生產企業
名　　稱：Medical Components, Inc.
地　　址：1499 Delp Drive Harleysville, PA 19438, USA
生產位址：Calle Mercurio N 46,Parque Industrial Mexicali 1, Mexicali, Baja California Norte, Mexico C.P. 20210
電　　話：215-256-4201
傳　　真：215-256-1787

售後服務機構
名　　稱：　　景年國際有限公司
地　　址：　　臺北市中山區建國北路二段85號3樓之1

使用说明书

产品名称：腹膜透析导管及附件
用于改良Seldinger（Littleford-Spector）技术

型号规格
MC200101-C
MC200102-C
MC200201-C
MC200202-C
MC200301-C
MC200302-C
MC200401-C
MC200402-C
MDC31S-C
MDC32S-C
MDC37S-C
MDC42S-C
MDC47S-C
MDC57C-C
MDC63C-C
MPD-141-C
MPD-146S-C
MPD-160-C
MPD-242-C
MPD-257-C
MPD-263-C
MPP40C-C
MPP41S-C
MPP46S-C
MPP57C-C
MPP60C-C
MSC31S-C
MSC37S-C
MSC42S-C
MSC46S-C
MPD-146-C
MC50-C
MC52-C

经环氧乙烷灭菌。未开封且无损坏的包装内容物无菌、无热原。

注意：美国联邦法律规定该设备必须由医生或凭医嘱销售。

使用之前，请仔细阅读说明、警告和注意事项。

产品性能、主要结构组成
本产品由腹膜透析导管（材料为硅橡胶）、J型导丝（材料为不锈钢）、扩张器、穿刺针（材料为不锈钢）、10cc注射器、肝素帽、纱布、塑柄手术刀、隧道工具、夹子和鲁尔接头组成。一次性使用产品，环氧乙烷灭菌。

Medcomp生产的腹膜透析导管由带不透射线条的半透明硅橡胶管组成。
腹膜透析导管有多种长度与套环，有直导管或弯导管设计。

分类	产品型号	产品描述	产品组成
V系列（呈V形）	MC200301-C	43cm Straight Double Cuff (Left) Catheter	腹膜透析导管、夹子、鲁尔接头和肝素帽
	MC200302-C	43cm Straight Double Cuff (Right) Catheter	
	MC200401-C	63cm Coiled Double Cuff (Left) Catheter	
	MC200402-C	63cm Coiled Double Cuff (Right) Catheter	
	MC200101-C	43cm Straight Double Cuff (Left) Catheter Set	腹膜透析导管、塑柄手术刀、纱布、扩张器、10cc注射器、导丝、隧道工具、鲁尔接头、夹子、肝素帽、穿刺针
	MC200102-C	43cm Straight Double Cuff (Right) Catheter Set	
	MC200201-C	63cm Coiled Double Cuff (Left) Catheter Set	
	MC200202-C	63cm Coiled Double Cuff (Right) Catheter Set	
I系列（呈I形）	MDC31S-C	15Fx31cm Straight Double Cuff Catheter	腹膜透析导管、夹子、鲁尔接头和肝素帽
	MDC32S-C	15Fx32.25cm Straight Double Cuff Catheter	
	MDC37S-C	15Fx37cm Straight Double Cuff Catheter	
	MDC42S-C	15Fx42cm Straight Double Cuff Catheter	
	MDC47S-C	15Fx47cm Straight Double Cuff Catheter	
	MDC57C-C	15Fx57.5cm Coiled Double Cuff Catheter	
	MDC63C-C	15Fx63cm Coiled Double Cuff Catheter	
	MSC31S-C	15Fx31cm Straight Single Cuff Catheter	
	MSC37S-C	15Fx37cm Straight Single Cuff Catheter	
	MSC42S-C	15Fx42cm Straight Single Cuff Catheter	
	MSC46S-C	15Fx46cm Straight Single Cuff Catheter	
	MPP41S-C	15Fx41cm Straight Single Cuff Catheter	
	MPP46S-C	15Fx46cm Straight Single Cuff Catheter	
	MPP40C-C	15Fx40.25cm Coiled Single Cuff Catheter	
	MPP57C-C	15Fx57.5cm Coiled Single Cuff Catheter	
	MPP60C-C	15Fx60cm Coiled Single Cuff Catheter	
	MPD-242-C	15Fx42cm Straight Double Cuff Catheter Set	腹膜透析导管、塑柄手术刀、纱布、扩张器、10cc注射器、导丝、隧道工具、鲁尔接头、夹子、肝素帽、穿刺针
	MPD-257-C	15Fx57.5cm Coiled Double Cuff Catheter Set	
	MPD-263-C	15Fx63cm Coiled Double Cuff Catheter Set	
	MPD-146S-C	15Fx46cm Straight Single Cuff Catheter Set	
	MPD-141-C	15Fx41cm Straight Single Cuff Catheter Set	
	MPD-146-C	15Fx46cm Straight Single Cuff Catheter Set	
	MPD-160-C	15Fx60cm Coiled Single Cuff Catheter Set	
附件	MC50-C	Male Luer Lock End Cap	鲁尔接头
	MC52-C	18GAx7cm Introducer Needle	穿刺针

适用范围
适用于急性和慢性腹膜透析。

禁忌症
腹前壁感染
腹内大范围粘连患者
导致横膈膜撕裂或腹胸粘连的情况
腹膜炎未治愈
严重呼吸功能不全：大量透析液扩张腹部可能会导致

肺功能进一步降低。
该导管不能用于Tenckhoff 套管针置管法，也不能用于任何非适应症用途。
近期接受了肠胃手术

潜在早期并发症
出血　　内脏穿孔
透析液渗漏　　腹痛
阻塞（单向或双向）　　皮下血肿
肠梗塞

潜在后期并发症
出口部位感染　　败血症
隧道感染　　输注压力或疼痛
外套环错位　　组织糜烂
被网膜堵塞　　生殖器水肿
透析液渗漏　　过敏反应
腹膜炎

警告与注意事项
- 本说明书内介绍的医疗技术和手术并不代表所有医学可接受方案，也不能替代医师治疗特定患者的经验和判断。
- 插管和拔管只能由合格执牌医师或在其授权指导下由其它医疗保健职业者执行。
- 操作导管或穿刺用组件时必须始终采用无菌技术。
- 操作过程中特别是使用锋利穿刺针时必须谨慎心，以免腹内器官受到损伤。在插入导管和包装内其他组件时，切勿用力过大。开始创建皮下隧道之前，必须仔细确认，确保导管尖端位置正确。
- 利用导丝拉直器把导丝的“J”形尖端插入穿刺针。切勿强行把导丝插入任何组件，或者强行把导丝从组件内拔出；否则，导丝可能断裂。
- 过度拧紧导管连接可能会导致某些接头破裂。
- 重复夹闭导管同一个点，可能消弱导管强度，定期更换夹闭位置以延长导管寿命。避免夹闭在靠近接头处 。
- 夹闭时若不使用与导管一起提供的管夹，则只能使用平口钳。
- 在导管附近使用锐器时，必须特别小心。
- 导管受力过大或被棱边冲撞时，可能撕裂。
- 经常检查导管有无裂痕、刮伤或切口等，这些缺陷会降低导管的性能。
- 切勿在导管的任何部位上使用油膏。与这些试剂接触可能导致导管损坏。
- 导管和套件组件都是一次性的；患者用后丢弃，切勿对其进行再灭菌。
- 如果包装先前已开封或破损，不要使用任何组件。
- 如果导管或组件从外观上看有损坏或缺陷，不要使用。
- 为了避免接触血液传染病原体，在使用过程中必须遵从通用注意事项。
- 不再需要导管时应立即取出。用后丢弃：导管只能置入一次。
- 护理出口部位时切勿使用含碘消毒液。推荐使用葡萄糖酸氯己定（即Chloraprep）作消毒液。

确定导管和节段长度

对于儿童或异常肥胖患者，导管使用前可能需要量体定制。通常来说，成人腹内导管长度应为患者仰卧时耻骨联合上缘到脐之间的距离（下腹部明显隆起或下垂的肥胖患者除外）。常用部位（脐下约3 cm处）置入导管后腹部皮下脂肪组织的厚度可以保证导管深入骨盆的长度足够长。如果直导管对瘦小成人来说长度过长，则可在导管远端腹内段切掉最多5 cm。超高患者的置入深度可以下移几厘米。

儿科用直导管，腹内段和皮下段可以按比例缩短。脐到耻骨联合的距离用作腹内段长度参考。最远端腹内段至少2 cm应该会壁穿孔。通常，外段应该长20 cm左右，以便操作。 对于肥胖患者，可能腹内段需要长一点。

置入导管

自Tenckhoff 和Schechter1于1968年开始介绍腹膜导管起，这种器械的数种有效置入法开始使用。许多医师偏爱使用开放式置入法2，在直视下执行所有步骤，并且牢固缝合各腹壁层以防透析液泄漏。开放式置管技术允许执行网膜切除，现已推荐这种技术用于儿科患者3 。其他作者介绍了使用导丝和Vascu-Sheath的封闭式置管法4。

先前进行过外科手术的患者，由于腹膜透析导管可能难以放置准确，可能是腹腔镜置管术的候选人。5,6

下文介绍腹膜透析导管的开放式和封闭式（经皮）置管方法。建议经验有限的医师在置入透析导管之前先查阅发表文献并取得有经验同事的协助。

选择出口部位

直导管

导管可以置入脐和耻骨联合之间的直肌内侧缘处，正好通过腹线下方，或者置入直肌侧缘，位于脐与髂嵴前部之间的直线上。切勿置入腹线上、疤痕或脂肪褶皱下方、已知或怀疑腹内粘接区、腹部或皮肤感染区。在患者坐着时确定脂肪褶皱。考虑患者喜好以及是否是左撇子也非常有用。

患者准备

要求患者排空膀胱和肠。如医师要求，可以使用灌肠剂。向患者说明手术步骤，以使患者在插管过程中予以配合。某些患者可以在床旁进行插管，但必须严格遵从无菌技术。

1. 按要求剃光插管区体毛。一些医师喜欢使用电动剃刀以保持皮肤完整。利用选定的杀菌剂擦洗插管区。

2. 准备一个无菌区。操作产品组件的人员应进行外科清洁并穿戴适当的手术服。患者也应该戴上防护罩。

3. 铺放手术巾，利用局麻药物麻醉皮肤和隧道周边组织。

   注：导管可通过外科方法插入，也使用Vascu-Sheath穿刺鞘经皮插入。两种方法的步骤如下：

A. 开放式外科插管步骤

1. 为了降低渗漏和疝气风险，我们建议穿过腹直肌鞘和直肌插入腹膜透析导管。作一穿透皮肤和皮下组织的 3-4 cm横向切口。止血，首选烧烙法。露出腹直肌前鞘，可以利用更多局部麻醉剂进行浸润麻醉。在腹直肌前鞘内作一横向切口。
2. 向下分离直肌到腹直肌后鞘。放置一根通过腹肌后鞘、腹横肌膜和腹膜的荷包缝合线。在腹膜内作一个小切口，约5-6 mm，以容纳导管。
3 在插管之前，用无菌盐水浸泡导管，并轻轻挤压套环，以排除空气。

4. 导管连接到一根硬钝长管心针上。为了保护肠道，导管的极细部与管心针尖端叠合。导管尾端在无阻碍情况下插入骨盆深部。可以通过苏醒患者有无“直肠受压”感确认导管位置是否正确。当导管 插入½ ～ ¾时，取出管心针，并把导管推入骨盆。
5. 系牢荷包缝合线。套环纵向放于腹直肌后鞘上。在横向切口上方的腹直肌前鞘内作一个小穿刺口，并通过该切口拉出导管。使用另一根荷包缝合线缝合该切口使之不漏液。
6. 利用连续不吸收缝合线缝合腹直肌前鞘。这样做有助于避免渗漏。
7. 创建皮下隧道（方法参加下文“创建皮下隧道”）。

创建皮下隧道后：

8. 连接提供的接头和管夹。确保导管无扭结。
9. 安装输送组件并评估导管的功能。检查伤口有无渗漏和止血。
10. 1分钟内至少排出200 ml 溶液。如果流量满足要求，则利用可吸收缝合线缝合皮下组织和进口部位。不要缝合出口部位。用无菌带关闭切口。
11. 为了避免出现意外，治疗之前和两次治疗期间必须确保所有封盖和管路连接牢固。在治疗区放置几层纱布，并固定。如果该部位没有发生出血或排液过多，则纱布至少保留一周。
    可能情况下，透析延期1 - 3 天（两周最佳），以适当愈合。如果立即执行透析，则患者应该仰卧以降低交换体积，可降低500 ml。如果患者进行间歇透析，则逐渐增大初始体积，如果患者能够忍受。

创建皮下隧道

利用腹膜隧道针

1. 如果需要，麻醉距进口部位约6 cm 处的皮肤出口部位。切一个5 mm的切口。
2. 对于弯曲隧道，把隧道针置于两个切口部位之间，并弯曲探针使之与期望隧道形状匹配（在创建弯曲隧道之前，确保封盖装在探针的塑胶端）。
3. 用盐水彻底浸湿皮下套环。
4. 把导管装到隧道针上，并推动导管使之在探针塑胶端移动，直至插入插孔。把封盖滑动到连接处。取下导管夹钳。
5. 把隧道针尖端插入主切口内。转动探针使之穿透组织，创建一条通向出口部位的皮下隧道。导管应与皮肤成锐角穿出。
   注：一些医师可能更喜欢创建直隧道。为了有效透析，直隧道应该稍微向上倾斜，以降低导管移位风险。
6. 利用止血钳扩张隧道入口，把套环导入隧道。
7. 从出口部位拉出隧道针，按要求把导管定位在隧道中。
8. 使套环位于距出口部位皮下 2-3 cm处，以免套环导致感染或被挤压出来。夹紧导管。
9. 小心分离出隧道针，并丢掉。

B. 经皮插管法（可剥离鞘利用改良的Seldinger技术）

步骤

1. 在选定腹部入口位置切出一个1.5- 2.0 cm 的切口。
2. 利用钝器解剖法为腹膜前套环创建一个囊袋（如适用）。
3. 把穿刺针装到一个装有肝素盐水的10 cc注射器上。把针通过切口插入腹膜腔内，并小心地注射盐水。抽吸到腹膜液表明针尖进入了腹膜腔
   注意：切勿进一步推进针，否则可能导致内脏受损。

4. 立即取出注射器，并把导丝挠性端朝尾端或后部方向插入穿刺针。导丝推入约1/4长度（约18 cm）。
5. 取出穿刺针，把导丝留在腹膜内。
6. 确认导管鞘内的扩张器处于锁定状态，以防两个组件在插入过程中分离。
7. 可剥离穿刺鞘接在导丝尾端上。注意：为了避免组织损伤和鞘尖端损坏，不要把导管鞘推至扩张器上。
   两个组件必须当作一个单元抓握。把导管鞘推入腹膜，轻轻来回摇动以有助于其穿过组织。切勿用力强迫导管鞘进入腹膜。插入长度不要超过患者尺码和入口部位要求长度。确保导丝没有进一步推入腹膜。
8. 把导管鞘固定到位，并轻轻取出扩张器和导丝。
9. 把矫直探针插入卷曲导管。利用无菌生理盐水润滑导管，并把探针插入导管。
   注：如果没有使用导管矫直探针，则利用无菌水溶润滑剂润滑管心针。用食指和拇指碾压套环以排出空气。把管心针置于距导管尖端上方约4 mm处。用止血夹闭紧探针（不要夹闭
   导管），以防其进一步朝尖端推进。
   注意：切勿把管心针插出导管尖端外。否则，可能在插入过程中导致受伤。
10. 利用导管探针把导管插入导管鞘，朝前推进至期望位置。
11. 取出导管矫直管心针。通过输注和排泄透析液确认排泄量。
    注：插管后立即确认排泄量，不能保证功能一直正常。5%的排泄问题是在导管置入后一周内发生移位引起。7
12. 在把导管固定到位的同时，抓握住导管鞘的凸块，并向外拉凸块，直至导管鞘与导管剥离。
13. 创建了一条皮下隧道 （参见前节内给出的方法之一“创建皮下隧道”）。

创建皮下隧道后：

14. 安装提供的接头和夹钳，并确保导管无扭曲。安装输送组件并评定导管的功能。
15. 如果无透析液渗漏且流量满足要求，则利用可吸收缝合线缝合皮下组织和进口部位。不要缝合出口部位。利用无菌带完全缝合切口。
16. 为了避免出现意外，治疗之前和两次治疗期间必须确保所有封盖和管路连接牢固。在治疗区放置几层纱布，并固定。如果该部位没有发生出血或排液过多，则纱布至少保留一周。
    注：使用之前利用透视确认导管位置正确。可能情况下，透析延期1 – 3 天（两周最佳），以适当愈合。如果立即执行透析，则患者应该仰卧以降低交换体积，可降低500 ml。如果患者持续进行间歇透析，则逐渐增大初始体积，以使患者能够忍受。

取出导管

有选择的取出未感染导管是一种门诊患者手术 。取出双套环导管可能需要两个切口，每个套环上方各一个，不过，许多医师更喜欢重新打开原始切口，以免产生另一道疤痕。

以脐为重点部位执行手术擦拭清洗，创建一个无菌区。把麻醉机注入深部套环区。如果不能触及到套环，则可以牵引导管，沿其路径解剖。由于连接组织向内生长，通常需要采用锐器解剖法进行解剖

深部或腹膜前套环

识别深部套环以及从套环延伸到腹膜的末梢窦道。切割末梢窦道，必须小心，以免横切到导管。

采用荷包缝合或外翻缝合，缝合末梢窦道。止血固定后，用纱布包扎伤口。

皮下套环
在需要时，可切出第二个切口以释放皮下套环，用局部麻醉剂浸润麻醉皮肤和皮下套环四周。通过扩张出口部位产生一个切口，或直接在套环上方切出一个切口。 解剖皮肤释放套环。拉出导管并缝合切口。

开口部位的护理
大多数情况下，“旧”出口部位的窦道被切除，小伤口不缝合，以用于排液。

出现感染时
出口部位感染
如果出口部位感染，则在取出导管前，向腹部充填500 cc含适当抗生素的透析液。取出导管后，适当松开创缘，以便该部位排液。

隧道感染 ——无腹膜炎
如果隧道感染，但没有出现腹膜炎，则在取出导管前，向腹部充填500 cc含适当抗生素的透析液。也可采用全身治疗。在取出导管过程中，避免损伤深部套环和皮下窦道。

缝合腹膜，调动深部套环和皮下窦道，并且为导管缝合一个Penrose排液口。取出皮下套环和过长导管。导管被释放后，拉出导管并通过剩余窦道排液， 从两个切口突出来的排液管置之不管。用抗生素冲洗两个伤口，并部分缝合它们。几天后，组织炎症消退后，把排液管慢慢拉出出口部位。

隧道感染 —— 有腹膜炎
与腹膜透析管相关的腹膜炎是一种严重问题。因此，应该积极治疗。在一些情况下，应该立即取出导管，并且患者静脉抗生素进行治疗。腹膜内抗生素有疗效的患者无需取出导管。治疗应该是个体化治疗，并且应该尊称医师的指示 。
注：一种允许通过二次愈合使切口愈合的选件。

参考文献

1. Tenckhoff H, Schechter H: A bacteriologically safe peritoneal access device. Trans Am Soc Artif Int Organs 1968; 12:181-187.
2. Nghiem DD: A technique of catheter insertion for uncomplicated peritoneal dialysis. Surg Gynecol Obstet 1983; 157:573-576.
3. Orkin BA, Fonkalsrud EW, Salusky IB, et al: Continuous ambulatory peritoneal dialysis catheters in children. Arch Surg 1983; 118:1398-1402.
4. Maher ER, Stevens J, Murphy C, Brown EA: Comparison of two methods of Tenckhoff catheter insertion. Nephron 1988; 48:87-88.
5. Brunk E: Peritoneoscopic placement of a Tenckhoff catheter for chronic peritoneal dialysis. Endoscopy 1985; 17:186-188.
6. Cronen PW, Moss JP, Simpson T, et al: Tenckhoff catheter placement: Surgical aspects. Amer Surgeon 1985; 51:627-629.
7. Perras, Susan, MSN, RN; Anthony Zappacosta, M.D.; Maria Mattern, R.N. “ Comparison of Two Techniques for Percutaneous Peritoneal Dialysis Catheter Placement.” ANNA Journal 12/No.5 (October 1985) 307-310.

附加阅读材料

Catheter and Exit Site Practices. Peritoneal Dialysis Bulletin, Vol. 7/No.2 (April-June 1989).
Tenckhoff, H., ed. Chronic Peritoneal Dialysis Manual (Seattle: University of Washington, 1974).
Twardowski ZJ. 1997. Peritoneal catheter placement and management. In *Therapy of Renal Disease and Related Disorders* (The Netherlands: Massry SG).

Medical Components, Inc.
1499 Delp Drive
Harleysville, PA 19438 U.S.A.
Tel:215-256-4201
Fax:215-256-1787
www.medcompnet.com

标签所用的图形、符号、缩写

STERILE EO 环氧乙烷灭菌	切勿再次使用
LOT 批号	使用前请仔细阅读产品说明书
失效日期	生产日期

生产日期：见产品包装
失效日期：见产品包装

注册人/生产企业
名　　称：Medical Components, Inc.美德康有限公司
住　　所：1499 Delp Drive, Harleysville, PA 19438,USA
生产地址：1) 1499 Delp Drive, Harleysville, PA 19438,USA
2) Calle Mercurio N 46,Parque
Industrial Mexicali 1, Mexicali,
Baja California Norte, Mexico C.P. 20210
电　　话：215-256-4201
传　　真：215-256-1787

代理人/售后服务单位
名　　称：百特医疗用品贸易（上海）有限公司
住　　所：中国（上海）自由贸易试验区富特西一路155号C楼第六层C-1A部位
电　　话：+86 21 24012366
传　　真：+86 21 24012466
灭菌方式：环氧乙烷灭菌
灭菌有效期：5年
医疗器械注册证书编号/产品技术要求编号：国械注进20163101602
修订日期：2021年04月02日