

SURGICAL TECHNIQUE

USE OF FOLEY'S CATHETER TO GAIN ACCESS FOR RETROPERITONEOSCOPY

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With the increasing popularity of laparoscopic urologic surgery, many different methods have been used to dissect the extraperitoneal space and gain access to the kidney and ureter. We present our initial experience using a Foley catheter to gain retroperitoneal access. This technique was successfully used in 30 children. We have not encountered any major complications and recommend its use in children.

Key words: Foley's catheter, retroperitoneal access.

INTRODUCTION

Retroperitoneoscopy had been difficult because of the inability to effectively create a space within the dense retroperitoneal fat. Balloon dissection was introduced in 1992.¹ Many variations of this technique have been proposed, but none have been perfect. Recently we have used the balloon of a Foley catheter to create this space in children.

MATERIALS AND METHODS

Retroperitoneal laparoscopies were carried out in 30 children over a period of 4 months using this technique. The mean age was 5.4 years (2.2 months–15 years). Twenty-three children underwent nephroureterectomy, two had laparoscopic deroofting of renal cysts, four children had heminephrectomies and one had a renal biopsy. Three laparoscopic ports, one 5 mm and two 3 mm, were used for each operation. The children were placed in the lateral decubitus and the retroperitoneum was accessed by blunt dissection through a 5–10 mm lumbodorsal incision, located in the angle between the lateral border of the paraspinal muscles and the 12th rib. A size 16-Fr Foley catheter was introduced through the incision and the balloon was inflated with 80–100 cc of air. Inflation was maintained for 30 s; the catheter was deflated and replaced with a 5-mm port. The remaining ports were placed after creating enough working space by blunt dissection.

RESULTS

All the procedures were successful using this technique. All 30 children stayed in hospital overnight only and returned to normal activity within a week.

DISCUSSION

Retroperitoneal laparoscopy provides direct access to the retroperitoneal organs and avoids the potential complications of transperitoneal laparoscopy. However, the main disadvantage of this method has been in the access and creation of the retroperitoneal space. The original description of using a glove finger

secured around a stiff catheter has been modified but none has been perfect. Other devices like the balloon trocar sheath² and use of a condom³ have also been suggested.

Our method of using a Foley catheter is simple and effective. The 5–10 mm incision allows open access to the retroperitoneum. The Foley catheter can then be slid into this space and the balloon inflated. A properly located balloon does not offer any resistance to inflation. The 16-Fr. Foley balloon accommodates 80–100 cc of air. The balloon ruptured in two children, but we did not encounter any tissue damage or complications as a consequence.

Several authors have shown balloon inflation and dissection to be quite safe.⁴ Others have indicated that using saline instead of air was theoretically safer in the event of balloon rupture.⁵ If the balloon did rupture while using our technique, the Foley catheter also has the added advantage of its central channel allowing the fluid to drain, preventing any compromise in vision caused by the presence of liquid in the retroperitoneal tissues.

One of the problems with the glove-finger balloon is that the tip cannot be directed into the required position accurately and consistently. The advantage of the Foley catheter is that it has a firm conical tip, which is useful in directing it safely and surely into the retroperitoneum. Another disadvantage of the old technique was the frequent leakage of air or rupture of the 'balloon' due to it being punctured by the tube within it. With the Foley catheter these problems do not occur as the very design of the catheter precludes it. The space created by the balloon is sufficient for placement of the initial ports for retroperitoneoscopy in children. We recommend the use of a Foley catheter for retroperitoneoscopy in children.

REFERENCES

1. Gaur DD. Laparoscopic operative retroperitoneoscopy: use of a new device. *J. Urol.* 1992; **148**: 1137–9.
2. Rassweiler JJ, Henkel TO, Stoch C *et al.* Retroperitoneal laparoscopic nephrectomy and other procedures in the upper retroperitoneum using a balloon dissection technique. *Eur. Urol.* 1994; **25**: 229–36.
3. Gaur DD, Agarwal DK, Purohit KC, Darshane AS. Laparoscopic condom dissection: new technique of retroperitoneoscopy. *J. Endourol.* 1994; **8**: 149–51.
4. Gaur DD, Rathi SS, Ravandale AV, Gopichand M. A single centre experience of retroperitoneoscopy using the balloon technique. *BJU Int.* 2001; **87**: 602–6.
5. Moore RG, Demaree RD, Sanda MG, Kavoussi LR. Retroperitoneoscopy: effects of insufflation media on surrounding tissue during balloon rupture. *J. Endourol.* 1995; **9**: 67–71.

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