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# EFFICACY OF EPIDURAL ANESTHESIA FOR RETROPERITONEOSCOPIC RENAL BIOPSY

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**ABSTRACT**

Laparoscopic procedures are performed using general anesthesia due to the perceived limitations of regional anesthesia in the upper abdomen and retroperitoneum. We present our initial experience with epidural anesthesia for retroperitoneal laparoscopic renal biopsy. UROLOGY **55:** 590xv–590xvi, 2000. © 2000, Elsevier Science Inc.

Renal biopsy is used for the investigation of medical renal disease. A percutaneous approach is preferred; however, in some cases the risks are unacceptable and biopsy under direct vision is indicated. In such cases, retroperitoneal laparoscopic renal biopsy is a good alternative to open biopsy.[1] General anesthesia has been chosen for laparoscopic procedures due to the perceived limitations of regional anesthesia. We present the use of epidural anesthesia for retroperitoneal laparoscopic biopsy.

## CASE REPORT

A 64-year-old man with emphysema, diabetes mellitus, and labile hypertension presented with renal failure and nephrotic syndrome (NS). Concurrent chronic lymphoid leukemia (CLL) was diagnosed during his hospital stay. Association between CLL and NS is not common (1% to 2% of all CLL cases), but it is well established.[2] Appropriate treatment of both CLL and NS needs histopathologic diagnosis. A percutaneous approach was contraindicated due to hypertensive episodes, hepatosplenomegaly, and the dependence on anticoagulant therapy. Regional anesthesia was attractive, given his emphysema and the possible pulmonary complications of a general anesthetic.

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### *Anesthesia Technique*

Anticoagulant therapy was discontinued 6 days before the procedure. The patient was sedated with Leptofen 1 mL and fentanyl citrate 2 mL. A lumbar epidural catheter was placed, and an epidural block was established by bolus administration of Carbocaina 2% (10 mL) and Marcaina 0.50% (5 mL) until a T4 level was established. The catheter was removed at the end of the procedure.

### *Retroperitoneoscopic Technique*

With the patient in the flank position, two ports were placed (Fig. 1). Initial insufflation with $CO_2$ at 15 mm Hg was started, and the laparoscope was used to bluntly dissect a working space. The pressure was then decreased to 8 to 10 mm Hg. The lower pole was exposed, and a cup biopsy forceps was used to obtain two cortical specimens. The biopsy site was fulgurated with bipolar electrocautery, packed with a sheet of oxidized cellulose, and observed before scope removal. The total procedure time was 40 minutes, with minimal blood loss and no evidence of hypercarbia. The patient was ambulating postoperatively and discharged the following day. Anticoagulation therapy was resumed on the second postoperative day.

## COMMENT

Laparoscopic renal biopsy is an excellent alternative for patients who are not candidates for percutaneous biopsy.[3] Hemostasis can be ensured before exiting the perirenal space, leading to decreased risks when compared with the percutaneous approach.[4] General anesthesia is standard due to the perceived limitations of regional anesthesia above the pelvis. Recently there have been reports of increased utilization of regional anesthesia up to



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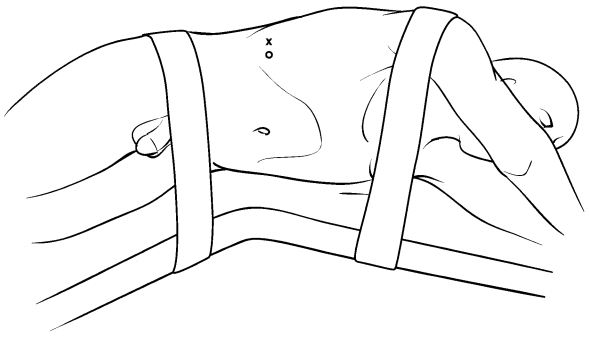

FIGURE 1. *Port configuration. Two ports are utilized: an 11-mm port (x) between the iliac crest and the tip of the 12th rib and a second 5-mm port (o) at the same level in the anterior axillary line. The first trocar (11 mm) was placed using the Visiport (Auto Suture, U.S. Surgical Corporation, Norwalk, Conn), which allows direct visualization and positional confirmation in the retroperitoneum. The second 5-mm port was placed under direct vision after blunt dissection of the retroperitoneum.*

the T4 sensory level.[5] In our first experience, epidural anesthesia provided adequate anesthesia with minimal patient discomfort or pulmonary compromise. The procedure was performed in a fashion identical to that under a general anesthetic.

A major concern with epidural anesthesia is the possibility of excessive $CO_2$ absorption requiring mechanical ventilation. These risks are theoretically minimized by limiting regional anesthesia to laparoscopic procedures of short duration and using low insufflation pressure (8 to 10 mm Hg). An additional factor limiting the possibility of hypercarbia in this patient was that the patient was only mildly sedated and able to control his own ventilation rate. Should a problem have developed, the anesthesiologists were confident that they could place an oral airway in the flank position if necessary.

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