# TECHNIQUE FOR RENAL IRRIGATION USING IVAC VARIABLE PRESSURE INFUSION PUMP

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An IVAC variable pressure infusion pump (IVAC Corporation) can be utilized to control safely and easily the delivery of irrigation solution for the chemolysis of renal and ureteral calculi (Fig. 1). Fundamental principles of chemolysis include control of infection and maintenance of low pressures during infusion to avoid extravasation and absorption. This system has several advantages over the one employed previously which utilized the height of the irrigating solution and insertion of a CVP manometer into the system to control and monitor pressure.*

The maximum infusion pressure is set on the IVAC pump at 20 cm of water. If at any time the intrapelvic pressure exceeds this set limit, the pump audibly signals occlusion. This alarm immediately alerts the nursing staff to this development. As the pressure monitoring device is built into the pump apparatus, this eliminates the need for the CVP manometer. Frequent repeated readings of renal pelvic pressure are no longer required although periodic inspection of the system is still essential. Furthermore, by eliminating the open "overflow" role of the CVP manometer, messy spills of irrigant no

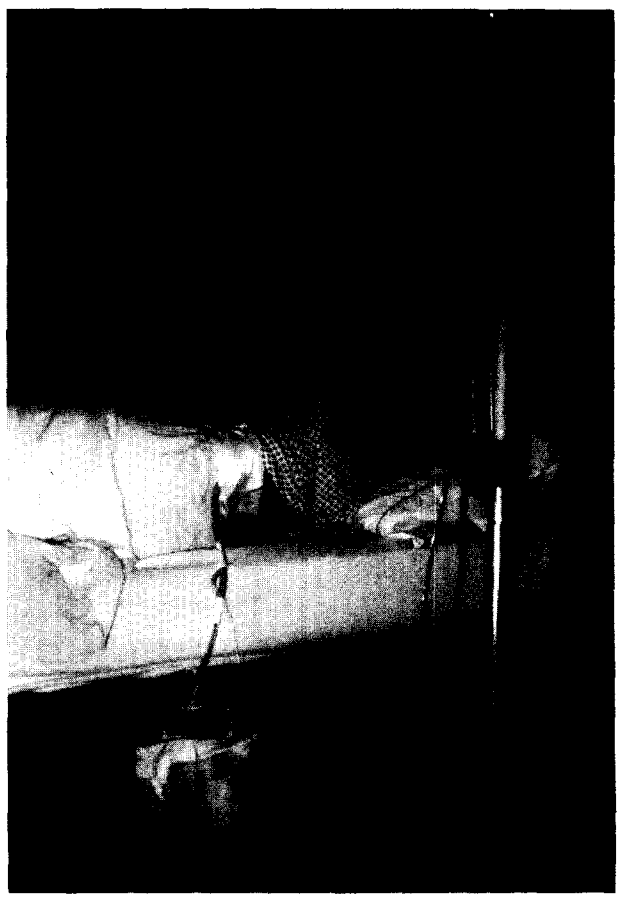

FIGURE 1. *Renal irrigation system utilizing IVAC variable pressure infusion pump.*

*Smith AD, and Lee WJ: Percutaneous stone removal procedures including irrigation, Urol Clin North Am 10: 719 (1983).

longer occur and the overall process is converted to a "closed system" of irrigation and drainage which decreases the possibility of bacterial contamination.

This system accurately delivers a set rate of irrigant within an electronically monitored pressure range. This insures patient safety and efficient delivery of the irrigant and the closed nature of the system prevents contamination. Lastly, less nursing time is involved in setting up and maintaining this system which is familiar to nurses throughout the hospital, not just the urologic nurses, due to their experience with these pumps for the administration of hyperalimentation and medications. We recommend this or a similar pump for all cases of direct irrigation using percutaneous or retrograde techniques.

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