

A prospective randomized comparison between early (<48 hours of onset of colicky pain) versus delayed shockwave lithotripsy for symptomatic upper ureteral calculi: a single center experience

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Background and Purpose: The role of early/emergency shockwave lithotripsy (SWL) in symptomatic upper ureteral calculi has still not been established. We have performed a randomized comparison between early (< 48 hours) vs. delayed (> 48 hours) SWL for symptomatic upper ureteral stones less than 1 cm to evaluate the feasibility, safety, and efficacy of early SWL in these patients.

Patients and Methods: One hundred and sixty consecutive patients with a single radiopaque upper ureteral stone < 1 cm, who presented with an episode of colicky pain and who were undergoing treatment between July 2008 and June 2009 in our department were included. The patients were hospitalized and randomized into two groups-group A: SWL was performed within 48 hours of onset of colicky pain (early SWL) using the electromagnetic lithotripter (Dornier Alpha Compact) along with analgesics and hydration therapy; group B: SWL was performed after 48 hours (delayed SWL) along with analgesics and hydration therapy. The statistical analysis was performed in two groups regarding the patient demographic profile, presence of hydronephrosis, time to stone clearance, success rates, number of sessions needed, auxiliary procedures, modified efficiency quotient (EQ), and complications.

Results: Eighty patients were enrolled in each group. The mean stone size was 7.3 mm in group A vs. 7.5 mm in group B (P = 0.52). The stone fragmentation rate was 88.75% in group A vs. 91.2% in group B (P = 0.35). The overall 3-month stone-free rate was 86.3% (69/80) for group A vs. 76.2% (61/80) for group B (P = 0.34). The mean time taken for stone clearance was significantly less in group A than in group B (10.2 days vs. 21.1 days; P = 0.01). The number of sessions needed in group A were significantly less than in group B (1.3 vs. 2.7; P = 0.01). The auxiliary procedure rate was also significantly lesser in group A than group B (16.3% vs. 32.5%; P = 0.001). The modified EQ (in %) was 67.2 in group A vs 59.4 in group B (P = 0.21). The steinstrasse formation and requirement for percutaneous nephrostomy (PCN) were significantly less in group A (P=0.02 and P=0.01 respectively).

Conclusions: Early SWL (within 48 hours of onset of colicky pain) is feasible, safe, and highly efficacious in the management of symptomatic proximal ureteral stones < 1 cm, resulting in a lesser requirement of number of SWL sessions, time taken for stone clearance, auxiliary procedure rate, and fewer complications in comparison with delayed SWL.

Editorial Comment

This intriguing study lends support to the theory that early management of obstructive ureteral calculi should be considered. Indeed, for a 7 mm proximal ureteral stone, that would have only a 30% chance of spontaneous stone passage, in situ SWL on an urgent basis is an excellent alternative. Ease of scheduling and insurer authorization would likely be a limiting factor for implementation of such a protocol. The impact on time to stone passage and development of steinstrasse is clear. What is less clear is the impact on re-treatment rates - the algorithm followed by the authors of re-image and retreat every 24 hours as an inpatient diverges from current practice in the US where outpatient therapy and re-imaging in 2 weeks might allow more patients the opportunity for stone passage. Similarly, the addition of an alpha-blocker after SWL to promote stone expulsion could change the findings of this study. Lastly treating at a slow rate (60/min.) may have resulted in smaller fragments and improved outcomes. Despite these limitations, the study provides food for thought

- that early intervention prior to the development of ureteral edema and mucosal hyperplasia - may improve outcomes.

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Long-term results of a prospective, randomized trial comparing retroperitoneoscopic partial versus total adrenalectomy for aldosterone producing adenoma

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Purpose: The indication for laparoscopic total or partial adrenalectomy in patients with aldosterone producing adrenal adenoma remains controversial. We compared retroperitoneoscopic partial and total adrenalectomy for aldosterone producing adrenal adenoma in a prospective, randomized, multicenter trial.

Materials and Methods: Patients with aldosterone producing adrenal adenoma were randomized to retroperitoneoscopic partial or total adrenalectomy. Patient characteristics, surgical data, complications and postoperative clinical results were analyzed statistically.

Results: From July 2000 to March 2004, 212 patients were enrolled in this study, including 108 and 104 who underwent total and partial adrenalectomy, respectively. The 2 groups were comparable in patient age, gender, body mass index and tumor site. Mean follow-up was 96 months in each group. No conversion to open surgery was needed and no major complications developed. Partial adrenalectomy required a shorter operative time than total adrenalectomy but this did not attain statistical significance. Intraoperative blood loss in the partial adrenalectomy group was significant higher than in the total adrenalectomy group ($p < 0.05$) but no patient needed blood transfusion. All patients in each group showed improvement in hypertension, and in all plasma renin activity and aldosterone returned to normal after surgery. No patient required potassium supplements postoperatively. In the total and partial adrenalectomy groups 32 (29.6%) and 29 patients (27.9%), respectively, were prescribed a decreased dose of or fewer antihypertensive medicines at final follow-up.

Conclusions: Retroperitoneoscopic partial adrenalectomy is technically safe. It has therapeutic results similar to those of total adrenalectomy in patients with primary aldosteronism due to aldosteronoma.

Editorial Comment

The authors compared retroperitoneoscopic partial and total adrenalectomy for aldosterone producing adrenal adenoma in a prospective, randomized, multicenter trial. Primary aldosteronism often has a higher rate