



Title	Laparoscopic Radical Prostatectomy
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Aim

To compare the safety, efficacy, and costs of laparoscopic radical prostatectomy (LRP) versus open radical prostatectomy and to assess the contribution of learning curve to efficacy outcomes.

Conclusions and results

Twenty-one studies compared open and laparoscopic approaches; 13 compared transperitoneal laparoscopic radical prostatectomy (TLRP) to open radical retropubic prostatectomy (RRP), 3 compared extraperitoneal endoscopic radical prostatectomy (EERP) to open prostatectomy, and 5 compared robotic-assisted radical prostatectomy (RALRP) to open prostatectomy. Nine studies compared different laparoscopic approaches; 6 compared EERP and TLRP and 3 compared RALRP with TLRP. There were no randomized controlled trials, 10 concurrently controlled comparisons (level III-2), 17 historically controlled comparisons (level III-3), and 3 comparisons using concurrent and historical controls (level III-2/3).

Safety: No important differences appeared in the complication rate between laparoscopic and open approaches, but blood loss and transfusions were lower in laparoscopic approaches.

Efficacy: Operative times were longer for laparoscopic than open prostatectomy, but length of stay and duration of catheterization were shorter. Positive margin rates were similar, and no important differences appeared between laparoscopic and open prostatectomy when considering tumor stage or margin location. Recurrence-free survival, continence, and potency were not well reported, but did not appear to differ between the two approaches. Quality of life did not differ between TLRP and RRP in 2 studies. There were no important differences between laparoscopic approaches.

Cost and resource use were not well reported, but 3 economic models found open radical prostatectomy to be less expensive than laparoscopic prostatectomy. None of the models used a patient-relevant effectiveness out-

come, eg, potency, continence, or survival, and do not provide much cost-effectiveness guidance for decision makers.

Learning curve: The effect of increasing experience could be tracked in 6 studies. As experience with the laparoscopic approaches increased, most clinical outcomes improved, but there were no clear effects on the positive margins rate or continence and potency outcomes.

Recommendations

1. A national audit of laparoscopic radical prostatectomy, including RALRP, should be instituted to monitor the introduction of the technique into the Australian healthcare system.
2. At regular intervals, hospital credentialing committees should monitor the progress of surgeons introducing LRP into practice, paying particular regard to complication rates and surgical margins during the learning phase.
3. Economic evaluations taking into consideration the Australian healthcare context should be conducted.

Methods

A systematic search of online databases (from 1996 to Dec 2004) and the Internet was undertaken, without language restriction. We included comparative studies that reported safety or efficacy outcomes of TLRP, EERP, or RALRP compared to open RRP or radical perineal prostatectomy. Comparisons between different laparoscopic approaches were included.

Further research/reviews required

Comparative data on continence, potency, and survival is insufficient. There did not appear to be any clear differences between the laparoscopic approaches. A clear learning curve for laparoscopic prostatectomy was documented which affected many clinical outcomes, but it was not possible to determine from the included studies how many laparoscopic procedures must be completed to negotiate this learning curve.