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COMPARISON OF LAPAROSCOPY ILEOCYSTOPLASTY AND OPEN SURGERY IN A CHRONIC PORCINE MODEL

Aims of Study

Intestinal segments continue to be the most common material used for bladder augmentation. Recently, the laparoscopic enterocystoplasty was introduced as a minimally invasive technique for bladder reconstructive surgery. However, there has never been a prospective study to compare the two techniques: laparoscopic versus open surgery. The possible advantages of laparoscopic ileocystoplasty are that: it is less painful, there is early recovery of patients and less adhesion formation. Our objective was to evaluate the results of laparoscopic ileocystoplasty and compare to an open surgery.

Methods

Laparoscopic ileocystoplasty was performed on five male pigs (Group I) and open surgery was done on four male pigs (Group II). All animals were euthanized after 4 weeks. Mean operative time, mean enterovesical time, weight gain per week, adhesion formation grade (classification from I to IV, I is less serious and IV is more serious), and bladder functional capacity were evaluated. Comparisons were made using the Snedecor F Test and for adhesion formation grade parameter was used a non-parametric statistics study.

Results

All animals tolerated the procedure; the mean operative time was 225 minutes and the mean ileovesical anastomosis time on Group I was 68 minutes, while it was 113.75 minutes and 35 minutes, respectively in Group II, ($p<0.05$). Mean weight gain for Group I was 40.35 g per week and for Group II was 26.56 g per week, ($p<0.01$). Non-parametric analysis demonstrated less serious adhesion formation in Group I (Grades I and II) in relation to Group II (Grades III e IV). Mean neobladder capacity was 372 ml in Group I and 315 ml in Group II ($p>0.05$), while mean vesical pressure was 27.6 cmH20 in Group I and 29.25 cmH20 in Group II, ($p>0.05$).

Conclusions

Laparoscopic ileocystoplasty was safer, feasible to be performed and animals had earlier recoveries. However, the laparoscopic ileocystoplasty took longer than the open surgery.

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