

Laparoscopic Radical Prostatectomy: Preliminary Report

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ABSTRACT

Objective: To report our preliminary results with Laparoscopic Radical Prostatectomy. **Materials and Methods:** Between January 2005 and February 2008, 50 patients underwent a laparoscopic radical prostatectomy for treatment of localized prostate cancer. Preoperative demographical and oncological data of the patients, intraoperative parameters (operative time, bleeding and complication) and postoperative outcomes (start of the oral diet and ambulation) were retrospectively analyzed. **Results:** The mean age of the patients was 59 years old (range 43 to 78). Most of the patients (96%) had a moderate Gleason score and the mean PSA was 6.7 ng/ml (range from 3 to 14). The average operative time was 216 minutes (range 150 to 330) and the estimated blood loss was 252 ml (range 100 to 700). There was no need of blood transfusion or conversion to open surgery due to intraoperative complications. In respect of postoperative data, all patients started the diet and the ambulation at the first postoperative day. The average time of hospital stay was 2.2 days (range 2 to 5). There have been observed 5 (10%) complications in our series. **Conclusions:** The laparoscopic radical prostatectomy is a feasible and safe technique when the learning curve is achieved. Moreover, today it has an important role as an alternative to the open surgery.

Key words: Prostatectomy, laparoscopy, laparoscopic radical prostatectomy.

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INTRODUCTION

Laparoscopic Radical Prostatectomy (LRP) is considered an acceptable therapeutic option for the treatment of localized prostate cancer¹.

In 1991 SCHUESLLER e cols. performed the first laparoscopic radical prostatectomy². At the end of the nineties, GUILLONEAU and VALLANCIEN refined and standardized the technique³. Since then Laparoscopy has assumed an important role as an alternative to conventional surgery due to the advantages of minimally invasive surgery, despite its complexity and steep learning curve.

The objective of this manuscript is to report our preliminary results with radical prostatectomy through the laparoscopic approach.

MATERIAL AND METHODS

Between January 2005 and February 2008, 50 patients were submitted to LRP for the treatment of localized prostate cancer and retrospectively evaluated. During this period in all cases the surgery

was performed by a single surgeon at Hospital Municipal Souza Aguiar –RJ, University Hospital Gaffre and Guinle (UNIRIO), besides other private hospitals in Rio de Janeiro. Preoperative demographical and oncological data of the patients, intraoperative parameters (surgical time, bleeding and complications) and postoperative outcomes (initiation of the oral diet and ambulation, complications, length of hospital stay and rates of conversion to conventional open surgery) were retrospectively analyzed. Oncological and functional results were not included in this initial study.

We use antegrade transperitoneal approach which has been adopted by a great number of institutions and previously documented in the urological literature⁴. Vesicourethral anastomosis was performed with 2-0 monocryl continuous suture in a clockwise direction starting at 3 o'clock. The drainage of the pelvic region was performed with a Penrose drain. Ilio-obturator lymphadenectomy was performed only in patients with PSA values of > 10mg/ml and Gleason score of = 7 (n=8). Urethral catheter was routinely maintained for 14 days.

RESULTS

The mean age of the patients was 59 years old (range 43 to 78). The majority of the patients (90%) were classified as ASA II. Nine cases (18%) had history of previous surgery. Of these 09 patients, five were submitted to appendectomy, 01 to nephrectomy, 01 to unilateral inguinal hernia, 01 to bilateral inguinal hernia and another to gastrectomy, all procedures were conventionally performed.

All patients were preoperatively staged with localized disease (T1-T2). Most of the patients (96%) had a moderate Gleason score and the mean PSA was 6.7 ng/ml (range from 3 to 14). The mean prostate weight evaluated through transrectal ultrasound was 38,5 g (15-65).

Intra and postoperative data are demonstrated in Table 1. On average, operative time was 216 minutes (135-360) with estimated average blood loss of 252ml(100-700). Blood transfusion was not necessary, as there were not observed intraoperative complications. Only two procedures (4%), which were performed in public institutions could not be concluded via laparoscopy due to technical problems with the gas flow to create the pneumoperitoneum. Regarding postoperative data, all patients initiate diet and ambulation on the first postoperative day. The average length of hospital stay was 2.2 days (between 2 and 5 days). Five complications (10%) were observed in our series. During the immediate postoperative period, two patients (4%) presented fever without any clinical repercussion. Tachyarrhythmia was observed in one patient (2%) who needed intensive care; however, the postoperative evolution was normal. There was one case (2%) of prolonged urine drainage; therefore, it was necessary a 5 days hospital stay until the removal of the drain. The major complication was a recto-urethral fistula with late identification that occurred with the first case of our series, thus it was necessary to perform a colostomy. Afterwards, the patient was submitted to surgical correction of the fistula followed by bowel transit reconstruction with a satisfactory recovery. Besides those complications, there was one case of non-intentional withdrawal of the urethral drain on the first postoperative day; nevertheless, the patient recovered well and spontaneous diuresis was observed.

DISCUSSION

Laparoscopic Radical Prostatectomy has been increasingly gaining acceptance as an alternative to

conventional open surgery due to the advantages of minimally invasive surgery. Mainly in Europe and in the United States, several institutions have been performing this technique and contributing to scientific publications. According to a multicenter study performed in 2006, more than 5.800 patients underwent LRP performed by 50 surgeons in Germany⁵. However, in our country few institutions have been performing this surgical approach due to the high cost and scarce resources in public hospitals, besides a steep learning curve.

Compared with open surgery, laparoscopic surgery results in less postoperative pain and reduced analgesia⁶. Moreover, earlier hospital discharge and recovery as well as better cosmetics outcomes which causes a positive contribution to patient's quality of life⁷. In our series all the patients resumed oral diet and ambulation after the first postoperative day and the average length of hospital stay was 2,2 days.

Several LRP approaches have been described. Thus, we used the antegrade transperitoneal approach as it is a widely used technique. In addition to that this technique provides a greater working space and a better management of surgical instruments inside the peritoneal cavity. Though, in obese patients and in patients with previous history of abdominal surgery the extraperitoneal approach may be the technique of choice. However, studies comparing these two approaches have not found significant differences between them, so the technique is chosen according to the surgeon's preference⁸. Transperitoneal access was performed in 5 patients with previous history of surgery without any complications.

Operative time is one of the main critiques to LRP. Nevertheless, several studies have demonstrated a significant reduction of laparoscopic radical prostatectomy surgical time with an average of 3 to 4 hours. This was observed in our series in which the average operative time of the first 10 cases was 277 minutes, while the average operative time of the last 10 cases was 168 minutes. RASSWEILLER and cols. observed that the mean operative time was significantly shorter for radical retropubic prostatectomy (196 minutes) compared to initial outcomes of LRP (288 minutes) performed in our institution. However, in the last cases of LRP(218 minutes) the outcomes did not differ significantly.

It is difficult to estimate blood loss during laparoscopic or retropubic radical prostatectomy, as urine and blood are mixed in the aspirate. Besides, LRP has demonstrated less blood loss and reduced

transfusion rates^{11,12}. This is because of the venous compression provoked by the pneumoperitoneum, in addition to the excellent visualization permitting meticulous haemostasis. The average blood loss varied from 300 to 800 ml, according to the outcomes reported by important urologic centers that have been performing this approach¹³.

According to the majority of the casuistic reported, complications and conversions rates for open surgery have reduced with the acquisition of experience. GUILLONNEAU and cols.¹⁴ described intraoperative complications rates in 567 patients that underwent laparoscopic radical prostatectomy and identified anastomotic urine leakage as the most common complication (10%). Rectal injury though rare occurred in 1,4 % of the cases. In a retrospective study with 1000 patients, it was observed 11,8% of intra and postoperative complications. The acquisition of better knowledge regarding prevention and earlier management of these complications has reduced LRP morbidity. According to CASTILLO and cols.¹⁵ rectal injury during laparoscopic radical prostatectomy can be safely managed by laparoscopy without the need of colostomy. Only one major complication (late identification of a recto-urethral fistula) occurred in the first cases of our series which corroborate the direct association between inexperience of surgeons and complications.

CONCLUSION

Laparoscopic Radical Prostatectomy is a feasible and safe technique when the learning curve is achieved. Advantages associated to minimally invasive surgery are observed, as well as lower blood. In this manner, LRP has achieved an important role as an alternative to open surgery, in spite of its complexity and steep learning curve.

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