



ISSN: 0975-833X

Available online at <http://www.journalcra.com>

International Journal of Current Research  
Vol. 12, Issue, 01, pp.9918-9920, January, 2020

DOI: <https://doi.org/10.24941/ijer.37825.01.2020>

INTERNATIONAL JOURNAL  
OF CURRENT RESEARCH

## RESEARCH ARTICLE

### PELVIC LYMPHADENECTOMY IN RADICAL PERINEAL PROSTATECTOMY VIA PERINEAL INCISION OUR INITIAL EXPERIENCE; CASE SERIES

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#### ARTICLE INFO

##### Article History:

Received 24<sup>th</sup> October, 2019  
Received in revised form  
20<sup>th</sup> November, 2019  
Accepted 19<sup>th</sup> December, 2019  
Published online 30<sup>th</sup> January, 2020

##### Key Words:

We also Concluded That Pelvic Lymphadenectomy Through Same Perineal Incision May Be Feasible, But Needs More Steep Learning Curve.

#### ABSTRACT

**Introduction & Objectives** –A major limitation of Radical perineal prostatectomy (RPP) was second access for pelvic lymph node dissection. We aimed to assess feasibility of pelvic lymphadenectomy through same perineal incision. **Methods** –A total series of eighteen RPP cases were categorized by Partin risk estimation. Eleven cases were risk (greater than 5%). Pelvic lymphadenectomy attempted in eleven cases, lymphadenectomy operative time, number lymph node removed, conversion and completion noted. **Results:** Lymphadenectomy attempted through same perineal incision in all the eleven patients, completed in five patients (45.45%) and not feasible in six patients (54.54%). The average lymph nodes removed were 4.7 (3-15) in right and 3.8 (0-6) in left. Lymphadenectomy Operative time (Mean) 74.55 (60-90) minutes. The average distance between common iliac artery - bifurcation and pubic symphysis (midpoint) calculated preoperatively from imaging (CT/MRI) was 12.44 cm (11.5-14). The completion of lymphadenectomy in distance < 12.5 cm was 80% and conversion rate in distance > 12.5 cm was 66.66%.

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**Citation:** Kunal Singh. 2020. "Pelvic lymphadenectomy in radical perineal prostatectomy via perineal incision our initial experience; case series", *International Journal of Current Research*, 12, (01), 9918-9920.

## INTRODUCTION

Radical perineal prostatectomy (RPP) was the pioneer surgery for carcinoma of prostate. Once Walsh's described anatomic radical retropubic prostatectomy (RRP) in 1982, gradually became benchmark and Gold standard. RPP lost the eminent status as it required second laparoscopic access for pelvic lymphadenectomy, patient's position change and increased operative time. In past years predictive models such as the Partin tables and the Kattan, Briganti, MSKCC, Roach nomogram allowed the safe exclusion of a pelvic lymph node dissection (Partin, 1997; Partin, 1997). Later successful demonstration of lymphadenectomy through the same perineal incision, RPP has the potential of contributing more to the future of radical prostatectomy (Saito, 2003; Keller et al., 2006). The art of perineal prostatectomy refuses to die in spite of the recent sway of entire radical perineal prostatectomy presently being performed at limited centres. Unfamiliarity with the perineal approach and a steep learning curve are the two most important deterrents in willingness to learn the approach. Attempts have been made to predict the difficulty during RPP in order to improve case selection (5).

General perception of urologist consider it difficult-to-learn and difficult-to-perform while comparison has showed that the learning period of RPP is not longer than that of Radical retropubic prostatectomy (Burgess et al., 2006), instead decreased morbidity and similar outcome (5). Review literature to Robotics because of its inherent qualities of being minimally invasive, less blood loss, excellent continence and cost effectiveness. The benefits of this approach are also being explored by robot in form of retzius sparing approach and Robotic perineal approach. We planned this study to check the feasibility and assess the difficulty in lymphadenectomy through the perineal route.

## MATERIALS AND METHODS

All patients with localised carcinoma of prostate, admitted for radical prostatectomy were included in the prospective observational study. The operation RPP (standard Young's suprasphincteric approach) followed by pelvic lymphadenectomy attempted by same perineal incision. Patients T Stage, S.PSA and Gleason score, were applied to Partin nomogram to assess the risk of lymph node involvement. All patients with risk of lymph node involvement > 5% were subjected to lymphadenectomy.

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**Isolation of iliac vessels**



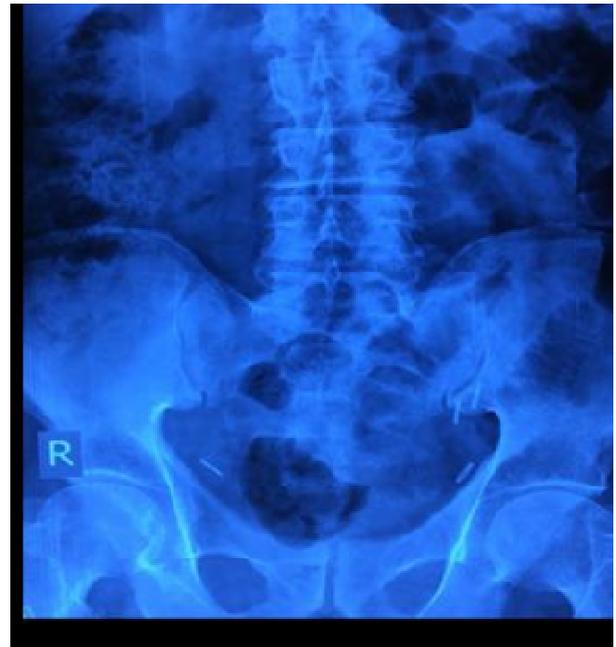
**Picture 1**



**Picture 2**



**Picture 3. Lymphnodes resected**



**Picture 4. Metal clips depicting extent of lymphadenectomy Post operative X ray with**

**RESULTS AND DISCUSSION**

One of the major issue of RPP has been lymphadenectomy, need another assess. Initial attempts for pelvic lymphadenectomy in RPP through the same incision was made by Saito and Murakami they described a limited perineal pelvic lymphadenectomy in three cadaveric male specimens (Saito, 2003). Keller and colleagues carried out the concomitant extended lymph node dissection in the RPP under direct vision which resolved the major disadvantage of RPP. Keller in a prospective trial of 90 consecutive patients assessed the feasibility of extended bilateral pelvic lymph node dissection in RPP through the same incision under direct vision (Keller et al., 2006). We carried out pelvic lymphadenectomy through same perineal incision in cases where required. The standard pelvic lymphadenectomy was done in eleven patients, according to Partin normogram risk estimation. In all cases lymphadenectomy were approached through perineal route and completed in five cases (45.45 %), however in six cases (54.54 %) it was not feasible and was completed through abdominal route. In assessing feasibility of pelvic lymphadenectomy through same perineal incision during RPP, mean operative time of lymphadenectomy after RPP was 74.55 min, where as for Saito and Murakami 20 mins in cadaveric study and for Keller 190 mins (mean). Keller also included time for RPP also; so on comparing with our study total operative time of RPP and PLNDx was 266 min (mean). We were naïve for this approach of pelvic LNDx, so needed longer time. The average number for resected lymphnode were three (Right) and two (Left) respectively, through same perineal incision. However, for overall combined (perineal and suprapubic) approach the mean of Right lymphnode was 4.7 (3-15) and Left lymphnode 3.8 (0-6). Saito and Murakami removed three nodes on average, and Keller removed a mean and median number of 19 and 18.7 lymph nodes, respectively. The number of lymph nodes removed was similar to Saito and Murakami study, but not as equivalent to Keller. So, we had opinion that lymphadenectomy through same perineal incision may be feasible but difficult requires steep learning curves and more expertise.

	Number (n)
Total RPP cases	18
Partin Risk < 5 %	7
Partin Risk > 5 %	11
Total lymphadenectomy	11
Complete Lymphadenectomy with perineal incision	5
Incomplete Lymphadenectomy with perineal incision	6
Lymphadenectomy Operative time(Mean)	74.55 ( 60 - 90) minutes
Completion of lymphadenectomy through perineal incision	45.45 % (n= 5)
Conversion to suprapubic approach for lymphadenectomy	(54. 54%) (n=6)
Distance between common iliac artery -bifurcation and pubic symphysis midpoint (Average)	12.44 cm (11.5-14)
Completion of lymphadenectomy in distance < 12.5 cm	80 %
Conversion rate in distance > 12.5 cm	66.66%.

We had a conversion rate of more than half of our cases to abdominal route for completion of lymphadenectomy. The operative time for perineal LNDx was 76 min (mean) and for LNDx through abdominal route was 78.33 min (mean), no significant difference noted as additional time for opening and closing the incision was not required in perineal. However, with each number of cases our expertise increased, we were more comfortable in nodal dissection. In our most of cases conversion was done in view of prolonged operative time and to avoid unnecessary risk to old patients with co-morbidities. We started our early cases with normal surgical instruments, later we used laparoscopic instruments which provided us better ergonomics, ease of surgery. However, none of lymph nodes were found to be positive on histopathological examination. In addition we studied distance between common iliac bifurcation and pubis symphysis based on imaging, average distance was 12.44 cm (11.5-14) in view to predict that deep seated nodes could be difficult. The completion of lymphadenectomy in distance < 12.5 cm was 80 % and conversion rate in distance. > 12.5 cm was 66.66%, so we can say that deep seated nodes might make lymphadenectomy through perineal routes difficult. We finally concluded that lymphadenectomy through perineal incision is better option and may be feasible in RPP, but needs much more expertise and efficient skills.

Using nomograms and other available data, AUA, NCCN and EAU have created guidelines for patients who should undergo PLND. The EAU guidelines recommend an ePLND during RP in patients with intermediate- and high-risk disease. NCCN has also made similar recommendations. The Partin, Memorial Sloan-Kettering and Briganti nomograms are accurate up to 97.8% in predicting patients needing PLND. Alberto Briganti et al used a cut-off of 5% in nomogram (Alberto Briganti, 2012). Keller in his study performed RPP and ePLND in patients presenting with either PSA >10 ng/ml or a Gleason score > 5 (Keller et al., 2006). We used the Partin Normogram for risk estimation of nodal involvement and the risk > 5 % was used as the criteria for lymphadenectomy. We had eleven patients with risk > 5% in whom lymphadenectomy was performed. None of lymph nodes were positive on histopathological evaluation. Previously, PLND in RPP was performed with a second laparoscopic access, however, now a combined laparoscopic pelvic lymphadenectomy and standard RPP performed as a minimally invasive procedure with little morbidity (Lerner, 1994; Levy and Resnick, 1994; Parra et al., 1996). But this procedure also requires change in the patient's position and increases the operative time.

## Conclusion

The conversion rate of lymphadenectomy was > 50%, substantially more on deep seated pelvic nodes. We also

concluded that pelvic lymphadenectomy through same perineal incision may be feasible, but needs more steep learning curve.

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