

## CASE REPORT

# Salvage Lymph Node Dissection for Metastatic Castration Resistant Prostate Adenocarcinoma

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Presented here is a 66 year old male who is a known case of prostate adenocarcinoma gleason score 9 (4+5) and who underwent open radical retropubic prostatectomy with bilateral pelvic lymph node dissection, followed by 45 cycles of radiation therapy with continuous androgen deprivation therapy. After completion of radiation therapy, Choline PET CT was done which revealed enlarged paracaval, aortocaval and paraaortic lymph nodes. The patient then underwent exploratory laparotomy, retroperitoneal lymph node dissection which found four out of twenty five lymph nodes removed that were positive for tumor metastases. There was a significant drop in the prostate specific antigen level two months post-surgery, from 7.43 to 1.54. Androgen deprivation therapy was still continued post-operatively.

**Keywords:** Salvage lymph node dissection, oligometastatic prostate cancer, biochemical recurrence, lymph node excision, cytoreductive surgery

## Introduction

Up to 30% of men treated with radical prostatectomy or radiation therapy for metastatic prostate cancer may experience biochemical recurrence within 10 years.<sup>1</sup> Oligometastatic prostate cancer has increasingly been detected in the era of modern imaging studies.<sup>2</sup> The increasing use of positron emission tomography/computed tomography (PET/CT) has led to a shift towards early detection of low-volume metastatic prostate cancer (PCa) (eg, isolated nodal recurrences) that, in turn, has contributed to a shift in the treatment paradigm of these patients.<sup>3</sup> Recently, the European Association of Urology guidelines have introduced salvage lymph node dissection (SLND) as a possible treatment option for men with nodal recurrence

after local treatment.<sup>4</sup> Traditionally, lymph node involvement is treated only by androgen deprivation therapy (ADT), which is considered the optimal treatment option in this setting. Nevertheless, patients affected by nodal metastases only showed better prognosis compared with skeletal or visceral metastases.<sup>5</sup> Delaying further cancer progression via SLND represents a significant end point of clinically recurrent prostate cancer, where very few treatment options are available.

## The Case

A 66 year old male who is a known case of prostate adenocarcinoma gleason score 9 (4+5) stage III underwent open radical retropubic prostatectomy

with bilateral pelvic lymph node dissection last 2010. He also completed 45 cycles of adjuvant radiation therapy with continuous androgen deprivation therapy using Pamorelin 11.25mg every 3 months for 5 years. The patient was classified eventually as having castration-resistant prostate cancer because of a rising PSA despite hormonal therapy. Choline PET CT was done which revealed enlarged paracaval, aortocaval and paraaortic lymph nodes (Figure 1). The patient then underwent exploratory laparotomy and retroperitoneal lymph node dissection, from the pelvic cavity going cephalad to the renal vein. Total operating time was 120 minutes with 1 unit of blood transfused for the 700 ml blood loss. Patient was then discharged on the third post-operative day without any complications. Four out of twenty five para-aortic lymph nodes removed were positive for tumor metastases while the 2 cm enlarged interaortocaval lymph node (Figure 2) was consistent with a prostatic primary. There was a significant drop in prostate specific antigen two months after post-surgery from 7.43 to 1.54. Androgen deprivation therapy was still continued post-operatively.

## Discussion

Local control of oligometastatic castration resistant prostate cancer can be achieved with surgical metastasectomy or salvage lymph node. The oligometastatic state is hypothesised to be



**Figure 2.** Intraoperative picture of a 2 cm interaortocaval lymph node adherent to the caval wall.

an intermediate state between local disease and widespread metastasis whereby localised forms of cancer treatment may be effective. The study of Ost, et al.<sup>6</sup> recently demonstrated in a phase II trial that metastasis-directed therapy (surgery or stereotactic body RT) significantly improved the ADT-free survival compared with surveillance alone. Likewise, there is a possible role of SLND in delaying further clinical progression in men with node only prostate cancer recurrence.<sup>7</sup>

Immediate or delayed androgen deprivation therapy with initial surveillance is the preferred treatment strategy for biochemically recurrent



**Figure 1.** Increased fluoromethylcholine activity is seen in the enlarged paracaval, aortocaval and para-aortic lymph nodes

prostate cancer after radical prostatectomy or radiotherapy.<sup>8</sup> SLND should not be discussed as a curative approach but rather as a potential way to spare or delay the toxicity associated with the use of systemic therapies. Medical or surgical castration causes changes in body composition, alteration in lipid profiles and decreased insulin sensitivity.<sup>9</sup> During long term therapy, ADT reduces bone mineral density and increases risk of fractures.<sup>10</sup> ADT is administered regardless of the number of metastases or whether they develop in lymph nodes or bone. The current European Association of Urology guidelines also suggest postponing palliative ADT in well-informed asymptomatic men with metastatic prostate cancer because of the lack of a clear survival benefit.<sup>2</sup>

## Conclusion

The impact of SLND on survival and clinical progression for isolated nodal disease is still unclear. Only long-term results and definitive outcomes like cancer-specific survival will be able to justify whether SLND could present as a viable treatment option for patients with nodal recurrence for metastatic castration resistant prostate cancer.

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