

Pubic bone resection as part of extended pelvic resections for locally advanced or relapsed pelvic malignancies

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ABSTRACT

For a long period of time, the presence of pubic bone invasion has been considered as the sign of an unresectable lesion and therefore, the patient was further submitted to radiotherapy alone or in association with chemotherapy. Even in these conditions, during irradiation a pubo-vesical leak might develop and therefore, aggressive surgery including resection of the pubic bone might be needed.

The aim of the current paper is to discuss about the indications of extended pelvic resections including pubic bone resections.

Keywords: pubic bone resection, locally advanced pelvic malignancies, pelvic resections

INTRODUCTION

Pelvic exenteration has been imagined in the '60's by Brunschwig in order to treat patients with locally advanced pelvic malignancies with palliative purposes [1]. However, at that moment, besides a significant improvement of the quality of life, an increase of the life span has been also reported [2-4]. Therefore, the method has been further analyzed and implemented for different types of lesions, with different degrees of extension, nowadays anterior, posterior, total and even laterally extended pelvic resections have been proposed with promising results [5-7].

In the last decade, extended resections at the level of the pelvic area have been performed including the bony pelvis. Initially, the most commonly cited resections were represented by the ones comprising the sacral bone [7]. Later on, other resections such as pubic bone resections have been proposed with promising result. The aim of the current paper is to discuss about the rationale and effectiveness of pubic bone resection for locally advanced or relapsed pelvic malignancies [8,9].

BONY PELVIS RESECTIONS AS PART OF EXTENDED PELVIC RESECTIONS FOR ADVANCED STAGE OR RELAPSED PELVIC MALIGNANCIES

Traditionally considered as the sign of an unresectable disease, bony pelvis resection has not been included in the standard therapeutic protocol for locally invasive or recurrent pelvic malignancies. Initially the most commonly encountered resection was represented by sacral resections, which are classified as high, mid or low sacral amputations; these resections were usually associated as part of posterior pelvic exenterations with local invasion and aim to prevent the development of severe complications such as lumbopelvic dissociation or sacroiliac joint instability [10]. An interesting study which came to demonstrate the efficacy of sacrectomy as part of extended pelvic resections was conducted by Milne et al. and included 100 such cases submitted to such resections. The overall survival was similar between patients who were submitted to extended pelvic resections involving the sacral bone and those submitted to standard pelvic exenterations, the only

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Article History:

Received: 14 July 2022

Accepted: 1 August 2022

prognostic factors with similar impact on the overall outcome being represented by the presence of anterior invasion and lymph node invasion [11].

PUBIC BONE RESECTIONS FOR LOCALLY INVASIVE MALIGNANCIES

Once the benefits of sacral resections have been demonstrated and the hypothesis of a more biologically aggressive tumor was destroyed, surgeons worldwide took into account the possibility of adding pubic bone resections as part of extended pelvic resections for locally invasive malignancies. One of the first studies which came to demonstrate the benefits of such resections was conducted by Austin et al. in 2016; the study included 500 patients submitted to pelvic exenteration in 29 cases extended to the pubic bone exenterations being performed. In 11 cases a complete pubic bone resection was performed while in the remaining 18 cases a partial resection was needed. The authors reported the presence of negative resection margins in 76% of cases and a five year survival rate of 53% demonstrating therefore that long-term outcomes after pubic bone resections were similar to those reported after central, lateral or posterior compartment excisions [9].

Nowadays, most often pubic bone resections are associated in local recurrences after surgically treated rectal cancer. However, more recently they have been also proposed for other pathologies such as gynecological or urological pathologies [12,14]. As ex, when it comes to the gynecological malignancies, most often pubic bone resections are needed in vaginal and vulvar cancer [14].

PUBIC BONE RESECTIONS FOR LOCAL COMPLICATIONS DURING THERAPY FOR LOCALLY INVASIVE OR RECURRENT MALIGNANCIES

Another commonly encountered indication in regard to public bone resections is represented by the

presence of pubovesical leak, a less commonly encountered problem which might develop in prostate cancer patients; therefore, this issue might develop both after radiation therapy or surgery and is associated with significant complications such as intractable pubic pain or pubic bone osteomyelitis. Therefore, in the study conducted by Lavien et al. and published in 2017 the authors included 16 patients with prior diagnostic of prostate cancer submitted to prostatic resection or radiation therapy between 2010 and 2015 and with further symptoms of osteomyelitis of the pubic bone. In all cases extended pelvic resections involving the pubic bone were performed and provided an efficient pain management and sepsis control; in this respect, a significant decrease of the need of narcotic usage was observed, improving therefore the quality of life [15]. A similar study has been recently published in the journal *Urology* and included 18 patients, with previous history of prostate cancer and with pubovesical fistula. In all cases association of total cystectomy en bloc with pubic bone resection significantly improved the outcomes of these patients, a significant benefit in terms of quality of life and narcotic need being reported [16].

All these data come to demonstrate once again that this extended bony resections represent an important therapeutic option in order to provide a better palliation of the symptoms caused by the osteomyelitis of the pubic bone while the postoperative complications are acceptable.

CONCLUSIONS

Although it has been recently added as part of extended pelvic resections for locally advanced, recurrent or for local complications of pelvic tumors, the method has proved to an efficient one in order to offer a good control of the disease and to improve the quality of life, with acceptable rates of perioperative complications.

Conflict of interest: none declared
Financial support: none declared

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