



## Minimally Invasive Nerve-Sparing Radical Hysterectomy: A Win-Win Scenario

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## COMMENTARY

# Minimally Invasive Nerve-Sparing Radical Hysterectomy: A Win-Win Scenario

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Radical hysterectomy is the mainstay of treatment for early stage cervical cancer undergoing surgical approach.<sup>1</sup> The radical removal of the uterus within its surrounding tissue is considered a feasible and useful approach for patients affected by stage IB1 and IIA cervical cancer. Moreover, radical hysterectomy might have a role in selected patients undergoing neoadjuvant chemotherapy due to the presence of a locally-advanced stage cervical cancer to the aim of reducing radiotherapy-related *sequaele*.<sup>2</sup>

Accumulating evidence support that radical hysterectomy guarantees favorable long-term oncologic outcomes, and minimize possible adverse events related to radiotherapy, especially in young women affected by cervical cancer. However, the execution of radical hysterectomy correlates with a non-negligible risk of developing pelvic floor dysfunctions, including voiding, sexual and anal issues due to the dissection of the nerves running in the tissues surrounding the uterus. Nerve sparing approach was introduced in order to preserve nerves and improving pelvic floor functions after the execution of radical hysterectomy. In order to reduce pelvic dysfunction rates, the inferior hypogastric plexus, sacral roots and the bladder branches have been anatomically mapped and partially preserved during nerve-sparing Querleu-Morrow type C1 radical hysterectomy.<sup>2–4</sup> Several data suggested that nerve sparing radical hysterectomy (type C1) guarantees the same oncologic results of conventional radical hysterectomy (type C2), minimizing the effects of surgery on bladder function.<sup>3,4</sup>

In the recent years laparoscopic and robotic-assisted approaches have emerged as the gold standard modality for the treatment of organ-confined gynecological cancers, including cervical carcinoma.<sup>5,6</sup> In fact, albeit a

level A evidence is lacking, several studies underlined the beneficial effects of minimally invasive surgery over open abdominal approach.<sup>7,8</sup> Notwithstanding, data on minimally invasive nerve sparing radical hysterectomy are still scant. In fact, only few series are available.<sup>1,7–10</sup> In the article entitled: “a modification of laparoscopic type C1 hysterectomy to reduce post-operative bladder dysfunction: a retrospective study” the authors investigated how the introduction of type C1 radical hysterectomy influence outcomes of cervical cancer patients.<sup>1</sup> Comparing type C1 and type C2 radical hysterectomy, the authors observed that nerve sparing approach resulted in uncompromised radicality and reduced bladder dysfunction rates.<sup>1</sup> These findings are in agreement with the data collected by our group in a recently published systematic review and meta-analysis on this issue.<sup>10</sup> The introduction of minimally invasive type C1 radical hysterectomy correlated with a reduction of pelvic floor dysfunction (in particular voiding issue) in comparison to type C2 radical hysterectomy. In this review, we collected data of 675 patients (350 (51.9%) and 325 (48.1%) patients undergoing type C2 and type C1 radical hysterectomy, respectively).<sup>10</sup> Pooled data suggested that patients undergoing type C1 radical hysterectomy experienced lower voiding (odds ratio [OR]: 0.39; 95% confidence interval [CI]: 0.19, 0.81) dysfunction rates than patients undergoing type C2 radical hysterectomy. Moreover, a trend towards lower sexual (OR: 0.25; 95%CI: 0.06, 1.07) and rectal (OR: 0.12; 95%CI: 0.01, 1.02) issues was observed for patients having nerve-sparing approach than patients undergoing type C2 radical hysterectomy. Survival outcomes are not influenced by type of surgical approach: recurrence (OR: 1.27; 95%CI: 0.49, 3.28) and death (OR: 1.01; 95%CI: 0.36, 2.83) rates.<sup>10</sup>

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Another point deserving further attention is the growing data less radical treatment (such as class A and class B radical hysterectomy) guarantees similar outcomes than highly radical procedures (such as class C1 and C2 radical hysterectomy).<sup>2,6</sup>

Further prospective and randomized researches are needed in order to assess the superiority of minimally invasive type C1 radical hysterectomy over type C2 procedure. However, we strongly believe that type C2 radical hysterectomy should be avoided in patients with early stage cervical cancer and it should be reserved only in selected conditions (basically due to oncologic issues). Similarly, when possible, minimally invasive surgery have to implemented in order to improve patients' outcomes.

### CONFLICT OF INTEREST

The authors report no conflict of interest related to the present manuscript. No funding sources supported this investigation.

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