Fertility preservation in patients with early cervical cancer

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2010, 4, 30
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Treatment of cervical cancer

- Stage IA1 with LVSI (-)
  - Conization or type I hysterectomy
- Stage IA1 with LVSI (+)
  - Radical trachelectomy or type II RH with PLND
- Stage IA2
  - Radical trachelectomy or type II RH with PLND
- Stage Ib1
  - <2cm: Radical trachelectomy or type II RH with PLND
  - >2cm: Type III RH with PLND
Types of fertility-sparing surgery in cervical cancer

• RVT with laparoscopic PLND
• RAT with PLND

• Neoadjuvant chemotherapy (NACT)
  – NACT followed by RVT with laparoscopic PLND
  – NACT followed by cold-knife conization with PLND
  – NACT followed by simple trachelectomy with laparoscopic PLND

• Large conization or simple trachelectomy with PLND
## Types of fertility-sparing surgery in cervical cancer

<table>
<thead>
<tr>
<th>Stage IA1 with LVSI</th>
<th>RVT</th>
<th>RAT</th>
<th>Simple conization Simple trachelectomy</th>
<th>NAC T followed by</th>
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<td></td>
<td>0</td>
<td>0</td>
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<td>O (SC)</td>
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| Stage IA2           | 0   | 0   | O                                      | O (SC)            |

| Stage IB1 (<2cm)    | 0   | 0   | O                                      | O (ST)            |

| Stage IB1 (2-3cm)   | 0   | O   | O                                      | O (ST) (tumor >2cm ½<SI <2/3) |

- Parametrial invasion is rare in patients with small tumors without LVSI and negative pelvic node. *(Uzan C, et al. 2009)*
- Parametrial involvement rate in patients with negative pelvic nodes, tumor size <2cm, stromal invasion <10mm (or less than half) : 0.6% *(Covens A, et al. 2002)*
- Problem of radicality in RVT *(Covens A, et al. 2002)*
Question 1

- Patients whose Stage IA1 with LVSI (+) or Stage IA2 with negative LN metastasis by frozen biopsy

Which operative method do you select in those patients (radical trachelectomy vs less radical fertility-sparing surgery)?
Lymphovascular space invasion

• Known unfavorable risk factor
  – LN metastasis or tumor recurrence
  – Independent predictor of survival
• However, controversial until now

• Beriner ME, et al. 2007
  - 28% of RVT had LVSI; recurrence in 12% (LVSI positive) vs 2% (LVSI negative)
• Mathevet P, et al. 2003
  - Three of four patients with recurrences were LVSI positive
• Burnett AF. 2006
  - Six of seven patients with recurrences were LVSI positive
• Marchiloe P, et al. 2005
  - All the patients with LN micrometastasis were LVSI positive
Question 2

Do you think that the status of LVSI could affect to determine the fertility-sparing surgical type?

- Radical trachelectomy vs Radical hysterectomy
- Radical trachelectomy vs Less radical fertility-sparing surgery
Evaluation of dissected LNs by frozen biopsy

- Frozen biopsy
  - Accuracy of frozen biopsy?
    - 4 of 100 patients had positive nodes despite negative frozen section (Hertel H et al. 2006)
  - Possibility of micrometastasis in normal LNs by frozen biopsy
    - Necessity of sentinel LN ultramicrostaging

- Sentinel LN
  - Frozen biopsy and ultramicrostaging
    - Possibility of LN metastasis in stage IA1 with LVS1 (+): 0.5%
    - Possibility of LN metastasis in stage IA2: 3%-8%
  - Marchiole P, et al. 2005
    - LN micrometastasis is an important risk factor of tumor recurrence in early stage cervical cancer (RR of recurrence: 2.44, 95%CI: 1.58 -3.78)
• What are your opinions?
  - Delaying surgery after final histopathologic results of dissected LNs or sentinel LN mapping to detect micrometastasis
Questions?

- Patients whose Stage IA1 with LVSI (+) or Stage IA2 with negative LN metastasis by frozen biopsy
  → Which operative method do you select in those patients (radical trachelectomy vs less radical fertility-sparing surgery)?

- Do you think that the status of LVSI could affect to determine the fertility-sparing surgical type?
  - Radical trachelectomy vs Radical hysterectomy
  - Radical trachelectomy vs Less radical fertility-sparing surgery

- What are your opinions?
  - Delaying surgery after final histopathologic results of dissected LNs or sentinel LN mapping to detect micrometastasis
Sentinel LN identification (SLNI)

- Possibility of LN metastasis in stage IA1 with LVSI (+): 0.5%
- Possibility of LN metastasis in stage IA2: 3%-8%
- Possibility of LN metastasis in stage IB: 15.9%

How about your opinions to introduce SLNI in fertility-sparing surgery in patients with stage IA1 or IA2?
Parametrectomy

- Parametrial invasion is rare in patients with small tumors without LVSI and negative pelvic node. (Uzan C, et al. 2009)
- Parametrial involvement rate in patients with negative pelvic nodes, tumor size <2cm, stromal invasion <10mm: 0.6% (Covens A, et al. 2002)

How about your opinions to omit parametrectomy in fertility-sparing surgery in patients with small tumors without LVSI and negative pelvic node?
Surgical skill

- Transection of uterine artery
  - Only cervical branch? Vs total uterine artery?
  - If only cervical branch, bleeding control?

- Cerclage
  - Necessity?
    - Cervical stenosis, bladder irritation, chronic discharge
  - Position of knot: anterior vs posterior

- Radical vaginal trachelectomy
  - Is it necessary to suture only bilateral end points?
• 1.5cm 한 개 section
• 2mm 여러 개 sections
  – 2um IHC: cytokeratin
Eligibility criteria of fertility-sparing surgery in cervical cancer

- Strong desire for future fertility
- No clinical evidence of impaired fertility
- Proven cervical cancer less than 2cm
- No involvement of upper endocervix and pelvic LN metastasis
- Stage IA1 with LVS1
- Stage IA2 or IB1 (<2cm)