Para-aortic laparoscopic lymph-node dissection for advanced cervical cancers

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Lymph-node involvement

- Is one of the major prognostic factor in gynecologic cancers.
- These tumors have a frequent lymph-nodal spread even in case of early cancer.
- The interest in performing lymph-node dissection is mainly to have an important prognostic factor.
- But it can have a therapeutic impact:
  - modification and adaptation of treatments regarding lymph-nodal extension.
  - Direct therapeutic effect while dissecting metastatic nodes (?).

The morbidity of lymph-node dissection exists:

- Vascular, nervous, and adjacent organs injuries have been described.
- Post-operative complications are not rare: lymphocysts, leg lymph edemas, persisting vascular or nervous troubles…
- So, there is an interest in developing imaging or surgical techniques that can have the same prognostic value as lymph-node dissections.
The morbidity of lymph-node dissection exists:

- Actual development of laparoscopic approaches for lymph-node dissection and of sentinel-node techniques.
- Even with these modifications, the surgical staging is associated with a residual morbidity.
- We can hope that, in a near future, techniques of functional imaging may replace these surgical staging techniques due to a better predictive value and less morbidity of these imaging techniques.

The imaging techniques for the evaluation of the lymph-nodal status are:

- **Lymphography**: old exam with a non negligible morbidity and an important false negative rate (when the metastatic deposits in the lymph-nodes are small).
- **TDM**.
- **MRI**.
- **Sonography**.
- **PET-scan**.

### Cervical cancer: PET-scan is more reliable than other exams

<table>
<thead>
<tr>
<th>Exam</th>
<th>N</th>
<th>Sensibility</th>
<th>Specificity</th>
<th>PPN</th>
<th>NPV</th>
<th>Reliability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lymphography</td>
<td>1421</td>
<td>55% (29-78%)</td>
<td>89% (62-98%)</td>
<td>66%</td>
<td>86%</td>
<td>80% (69-89%)</td>
</tr>
<tr>
<td>TDM</td>
<td>290</td>
<td>35% (24-40%)</td>
<td>92% (78-95%)</td>
<td>46%</td>
<td>88%</td>
<td>83% (70-89%)</td>
</tr>
<tr>
<td>MRI</td>
<td>360</td>
<td>39% (24-75%)</td>
<td>90% (84-100%)</td>
<td>71%</td>
<td>90%</td>
<td>86% (76-95%)</td>
</tr>
<tr>
<td>PET-scan</td>
<td>465</td>
<td>75% (56-95%)</td>
<td>95% (93-100%)</td>
<td>56%</td>
<td>92%</td>
<td>92% (85-98%)</td>
</tr>
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</table>
2 questions

• What are the indications of para-aortic lymph-node dissection in cervical cancer?

• What is optimal: PET-scan or lymph-node dissection?

What are the indications for para-aortic evaluation of lymph-node status?

• Advanced cervical cancer: stage IB2 and more.
• Early cervical cancers with pelvic lymph-node involvement.
• 2 interest:
  – Evaluation of an important prognostic factor,
  – Determination of radiotherapy fields.

Lyon retrospective study

100 patients with advanced cervical cancer treated between 1999 - 2007

Staging with extraperitoneal laparoscopic para-aortic lymph-node dissection (ELPLD) in all cases.

Chemoradiotherapy + Brachytherapy in 84% of cases
Radiotherapy +/- chemotherapy +/- brachytherapy in16% of cases (including 22% cases with extended field due to positive para-aortic lymph-node)

Surgical treatment after radiotherapy in 74 % of cases.
Invasive cervical cancer

Stage Ib2 to IvA

Para-aortic N+

Recommendation

- Large fields chemoradiotherapy
- No indication for surgical treatment after radiotherapy
- Staging with laparoscopic para-aortic lymph-node dissection
- Chemoradiotherapy (with platinum) and brachytherapy
- Clinical evaluation (4 to 6 weeks after chemoradiotherapy) + MRI
- Optional: hysterectomy (+/- radical) + pelvic lymph-node dissection or other surgical treatment (exenteration)

PET-scan or lymph-node dissection?

PET-scan and/or lymph-node dissection!
Diapositive 11

r2 romestaingpa; 01/10/2008
CORRELATION between TEP-SCAN and HISTOLOGY of PARA-AORTIC LYMPH-NODES

RESULTS:

• 8 / 34 patients were N+ in para-aortic area (24%)
• 4 patients N+ have a TEP-scan + = 4 real positive cases
• 4 patients N+ have a TEP-scan – = 4 false negative cases
• 1 patient N– has a TEP-scan + = 1 false positive case.
• Sensibility of TEP= 50%
• Specificity of TEP= 93%

Conclusion: histological evaluation of the para-aortic lymph-nodes is still interesting in case of negative TEP-scan.

Management of advanced cervical cancer (stages Ib2, IIA2 to IV)

• Pre-therapeutical staging including:
  
• intra-abdominal laparoscopy in order to exclude peritoneal carcinomatosis,
• and laparoscopic para-aortic lymph-node dissection,
Laparoscopic para-aortic lymph-node dissection:

- Our approach is extra-peritoneal in order to decrease the troubles induced by the bowels.
- Morbidity reduced (compared to laparotomy).
- Better and quicker post-operative recovery.

Modalities of the laparoscopic extraperitoneal para-aortic lymph-node dissection
Results:

Left extra-peritoneal laparoscopic para-aortic lymphadenectomy

- Success of the procedure: 96%
- Number of dissected lymph-nodes: 16.2 (3-34) excluding positive extemporaneous assessment or failure of the procedure.
- Complications rate: 8% → failure of the procedure 4% (CO2 leakage)
  → Per-op bleeding 2% (laparoconversion 1%)
  → Drainage of lymphocyst 2%
- Mean hospital stay: 3 days.
- Rate of para-aortic N+: 22% (68% in latero-aortic area).
- No delay in the initiation of radiotherapy.

Therapeutic value of pretherapeutic extraperitoneal laparoscopic staging of locally advanced cervical carcinoma

Eric Leblanc, Fabrice Narducci, Michael Frumovitz, Anne Lesoin, Bernard Castelain, Marie C. Baranzelli, Sophie Taieb, Charles Fournier, Denis Querleu. Gynecol Oncol 2007
Interest of the pre-therapeutic nodal staging

- **PET-scan**: false negative rate = 8% to 13%
- **Therapeutic value**: after laparoscopic lymph-node staging, patients with nodal micrometastasis (< 5 mm) treated with extended field chemoradiotherapy have the same survival as patients N0 (Leblanc)
- **Decrease morbidity**: laparoscopic approach diminishes the risk of bowel lesions in case of radiotherapy with extended fields (para-aortic N+ patients)

Management

<table>
<thead>
<tr>
<th>Cervical cancer stage IB1 - IIB / III - PET: para-aortic N+</th>
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<tbody>
<tr>
<td>No laparoscopic para-aortic lymph-node dissection</td>
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</tbody>
</table>

- Chemoradiotherapy
  - With extended fields

- No surgery
Management

Cervical cancer stage IB2, IIb – III, PET-scan negative

Laparoscopic para-aortic lymph-node dissection

N -  N +

Chemoradiotherapy  Chemoradiotherapy with extended fields

Hysterectomy  No surgery