Diaphragmatic endometriosis: when should we think about?

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What do we know about diaphragmatic endometriosis?

- Rare but underestimated location
- Almost always on the right side
- Often diagnosed after catamenial complications
  - Hemothorax
  - Pneumothorax
- Symptomatic?
  - Cyclic right shoulder pain (diaphragmatic irritation)

Objectives

- To study in patients with diaphragmatic endometriosis:
  - The prevalence of diaphragmatic pain
  - The severity of associated pelvic endometriosis
Materials and method

- Retrospective study (September 2013 to April 2015)
- Including 14 patients (24 to 39 y.o.,)
  - Consulting at the endometriosis center of Paris Saint Joseph Hospital
  - Who underwent diaphragmatic MRI (frontal and / or sagittal sequences, T1 Fat Sat, LAVA Flex Water on a GE 3T MRI)
  - Showing diaphragmatic endometriosis (T1 hyperintensity)
Clinical data
- Catamenial shoulder or hypochondrial pain
- Pneumothorax or haemothorax history
- Dedicated score of pelvic endometriosis severity
  - Based on pelvic MRI and US systematic review
  - Locations: ovaries, uterus, subperitoneal anterior and subperitoneal posterior

<table>
<thead>
<tr>
<th>Score 0</th>
<th>No pelvic endometriosis</th>
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<tbody>
<tr>
<td><strong>Score 1</strong></td>
<td><em>Moderated pelvic endometriosis (1 or 2 locations)</em></td>
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<tr>
<td>Score 2</td>
<td>Severe pelvic endometriosis (3 or 4 locations)</td>
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Results: diaphragmatic endometriosis

- Hypersignal T1 Fat Sat of the diaphragmatic dome: 14 patients (100%)

- Transdiaphragmatic isosignal T1 hepatic hernia: 2 patients

- From 1 to >4 localisations / from 2 mm to 54 mm

- Diaphragme
  - Right: 12 (86%)
  - Left: 1 (7%)
  - Right and left: 1 (7%)
Frontal and sagittal WATER Lava Flex sequences
35 YO patient – right shoulder pain and severe pelvic involvement

Frontal WATER Lava Flex sequence
31 YO patient – right shoulder pain and moderate pelvic endometriosis
T1 frontal and T1 FS sagittal sequences
Frontal enhanced abdominal CT scan
Frontal T1 Fat Sat sequence
Sagittal US
Frontal T1 Fat Sat sequences
Control after 3 months of GnRH analogue therapy
Results: symptoms

- 2 patients (14%) had history of catamenial pneumothorax.
- None had history of catamenial haemothorax
- 13/14 (93%) had cyclic, catamenial pain
  - Right shoulder: 7 (50%)
  - Right hypochondrial: 2 (14%)
  - Right shoulder and hypochondrial: 3 (22%)
  - Left hypochondrial: 1 (7%)
  - No pain: 1 (7%)
Results: associated pelvic endometriosis

- Severe pelvic endometriosis (score = 2)
  - 7 patientes (50%)

- Moderated pelvic endometriosis (score = 1)
  - 5 patientes (36%)

- No pelvic endometriosis (score = 0)
  - 2 patientes (14%)
Discussion: Symptoms

- 93% patient were symptomatic: cyclic, catamenial shoulder and/or hypochondrial pain

- Ask for it!

- Take a few time, and is very efficient for patient care
- Only 2 patients (14%) had history of catamenial pneumothorax

- Don’t wait for diaphragmatic complication to diagnose diaphragmatic endometriosis
Discussion: associated pelvic endometriosis

- In literature: diaphragmatic endometriosis is sometimes associated with severe pelvic involvement

- In our serie: 50% had moderated or no pelvic endometriosis

- Think about it, even if pelvic involvement is moderate

Discussion: Imaging

- **Diaphragmatic MRI** is the best exam to screen diaphragmatic endometriosis
- Frontal T1 Fat Sat Sequence
- Hypersignal T1FS

Take home messages

- Think about diaphragmatic endometriosis
  - Cyclic catamenial shoulder or hypochondrial pain
  - Woman of childbearing potential
  - Even if no pelvic endometriosis / history of catamenial pneumothorax

- Best exam:
  - MRI
  - Frontal T1 Fat Sat sequences, focused on diaphragmatic coupoles
Thank you for your attention