Illness Scripts: The Right Script for Diagnostic Reasoning

Connecting the dots for symptom-based PBL cases

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Goals

- Discuss “symptom” anchored problem based learning and illness script creation
- Review creation of an illness script
- Discuss value added of illness script in NP education
**Problem-based Learning (PBL)**

- PBL makes hypothetico-deductive reasoning process explicit
- Initially students follow guided steps
- Goal – to become a natural approach or way of thinking
Online PBL Approach

• Our Approach:

  – Four cases based on single symptom unfold over 2 weeks ending in 4 different diagnoses
  – Students review all four cases comparing and contrasting salient features
Steps of PBL Process

- Brief CC introduced
- List working hypotheses (HO)
- List what is expected on Hx & PE by HO
- Data is obtained from Hx & PE
- Salient data identified
- HO refined via rule-in/rule-out process
Connecting the dots
Illness Scripts

– Needed means of tying cases together to build robust mental models of cases with similar characteristics
– Take the hypothetico-deductive reasoning process one step further
– Make the process of organizing cases in schemas more explicit
– Promote development of diagnostic reasoning
Definition of Illness Script (IS)

Previously acquired network of relevant knowledge and experience anchored by a sign or symptom and enriched by a scenario of events that occur in a certain order.

(Charlin et al, 2007)
Components of an IS

- Chief Complaint
- Working hypotheses
- Predisposing condition
- Pathophysiological insult
- Clinical consequences or distinguishing features
- Defining features
- Problem representation

Refer to handout for exemplar
### Example

<table>
<thead>
<tr>
<th>Chief Complaint: 54 y/o male with CC of right knee pain</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Working hypotheses</strong></td>
</tr>
<tr>
<td>----------------------------</td>
</tr>
<tr>
<td><strong>Infectious arthritis</strong></td>
</tr>
<tr>
<td><strong>Gout</strong></td>
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</tbody>
</table>

**Problem representation:** Acute onset of recurrent, exquisitely painful monoarticular process
# Illness Script (con’t)

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| Pseudogout | Trauma, surgery | Acute, recurrent inflammatory process caused by calcium pyrophosphate crystal deposit | Acute onset  
Warm, red joint  
Effusion  
CPPD crystals found on aspirate | Acute, may begin as monoarticular, but will involve multiple joints eventually |

**Problem representation for Pseudogout:**  Acute onset of monoarticular joint pain

| OA | Trauma (acute or chronic) | Non-inflammatory, cartilage destruction caused by wear and tear | Chronic process with occ. acute pain. Bony proliferation without heat, redness; small effusions | Chronic, decline in functioning; may be mono or polyarticular |

**Problem representation for OA:** Monoarticular onset without signs of inflammation
The final step: Naming the Illness Scripts

• Develop brief descriptive title

• Summarizing common features of all potential working hypotheses.

• Example – *Acute monoarticular inflammatory arthritis*

  or

• *Acute onset unilateral knee pain*
Outcome – Fluid approach to CC

Phases

• *Script activation* – automatic phase triggered by CC

• *Script processing* or hypothesis testing
  – controlled & deliberate
  – Search cases in memory for default value
  – Retrieve knowledge of pathophys

• *Organization* for case summary
Questions?
References


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