Contemporary Desmoid Management

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Desmoid tumor: general considerations

“Desmoid” is derived from the Greek word “desmos”, meaning band-like

Über den feinen Bau und die Formen der krankhaften Geschwulste
(About the Fine Structure and Types of Pathological Tumors)

J. Muller, 1838
Desmoid tumor: general considerations

- A rare soft tissue tumor (< 1000 in U.S./yr)
- Three anatomic varieties
  - intra-abdominal
  - abdominal wall
  - extra-abdominal
- Treatment
  - surgery
  - radiation
  - systemic approaches
    - chemotherapy
    - anti-inflammatoryics
    - hormonal blockade
    - targeted therapy

Cell of origin unknown; molecular determinants of inception, progression, recurrence uncertain...
Intra-abdominal desmoid tumor
Abdominal wall desmoid tumor

13 operations
Extra-abdominal desmoid tumor
Desmoid care requires multi-disciplinary cooperation: Pathology, Radiology, Surgery, Medical Oncology, Radiation Oncology
Diagnostic strategies
Desmoid tumor: image before biopsy, using best modality
Biopsy approaches
Biopsy performance is critical to outcome!
Biopsy: performance is critical to outcome!
Treatment approaches: surgery
Specific treatment modalities: surgery

Before surgery:
- Understand the natural hx of desmoid: local recurrence
- Image before biopsy
- Plan biopsy w/ resection: proper orientation
- Plan reconstruction in advance

During surgery:
- Incision for exposure
- Identify/control critical anatomy; delineate margins
- En bloc resect all gross tumor w/ adherent structures
- Frozen section control of margins; difficult w/ desmoid
Surgical intent: cure vs palliation

- Palliative surgery objectives: relieve symptoms in patients beyond cure when non-surgical measures are not feasible, not effective, or not expedient; establish curative versus palliative intent as early as possible, preferably before OR

- Not all R0 resections are curative
- Not all R1 resections are palliative
- R2 resections are usually neither curative nor durably palliative
Resectability vs removability

Resectability is not the same as removability

Removeable: patient and tumor can be separated

Resectable: removable, but also other factors …
• Anatomic constraints
• Tumor biologic constraints
• Surgical intent constraints
• Quality of life constraints
Surgical intent constraints; resolvable via multi-disciplinary assessment, input, discussion, and decisioning...
Treatment approaches: radiotherapy
Desmoid radiotherapy controversies

• Use before or after surgery?
• Use as “stand alone” therapy?
• Total dose?
• Role for radiosensitizers?
• Use with macroscopic residual desmoid?
• Use in microscopic (+) versus (-) margins?
Complications increase with increasing XRT dose


n=115 UTMDACC patients; 1965-2005
Treatment approaches: systemic therapies
Desmoid treatment: Dox-based chemotherapy

Patel et al. Cancer; 1993
Desmoid treatment: MTX-based chemotherapy

Azzarelli et al. Cancer; 2001

(n = 30 Milano patients)
## Desmoid treatment: Tamoxifen and Sulindac

<table>
<thead>
<tr>
<th>Site</th>
<th>Desmoid-related surgery</th>
<th>Additional therapy</th>
<th>Clinical course</th>
<th>Drug in mg (mos tx)</th>
<th>Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shoulder girdle</td>
<td>R2 resection</td>
<td>Radiation</td>
<td>Progressed</td>
<td>T 120 (12) S 300 (12)</td>
<td>Complete response</td>
</tr>
<tr>
<td>Pelvic girdle</td>
<td>Four resections</td>
<td>Hyperthermia</td>
<td>3 recurr.</td>
<td>T 240 (24) S 399 (24)</td>
<td>Progressed</td>
</tr>
<tr>
<td>Shoulder girdle</td>
<td>No</td>
<td>No</td>
<td>No recurr.</td>
<td>T 120 (43) S 300 (43)</td>
<td>Stable</td>
</tr>
<tr>
<td>Thoracic</td>
<td>No</td>
<td>No</td>
<td>No recurr.</td>
<td>T 120 (34) S 300 (34)</td>
<td>Stable</td>
</tr>
<tr>
<td>Lower extremity</td>
<td>Several resections</td>
<td>No</td>
<td>Recurr.</td>
<td>T 120 (36) S 300 (36)</td>
<td>Stable</td>
</tr>
<tr>
<td>Lower extremity</td>
<td>41 resections</td>
<td>No</td>
<td>3 recurr.</td>
<td>T 120 (37) S 300 (37)</td>
<td>Stable</td>
</tr>
<tr>
<td>Paravertebral</td>
<td>No</td>
<td>No</td>
<td>No recurr.</td>
<td>T 120 (31) S 300 (31)</td>
<td>Stable</td>
</tr>
<tr>
<td>Lower extremity</td>
<td>R0 resection</td>
<td>No</td>
<td>No recurr.</td>
<td>T 120 (5) S 300 (5)</td>
<td>Disease free</td>
</tr>
</tbody>
</table>

*Hansmann et al. Cancer; 2003*
Desmoid treatment: Imatinib

Heinrich et al. J Clin Oncol; 2006
PET and CT scans: Imatinib x 12 months

Baseline

CT scan: no change in size

PET

CT/PET scan: decreased glucose uptake

Heinrich et al. J Clin Oncol; 2006
Policy of “watchful waiting”

Exciting new targeted approaches: Sorafenib!

(Stay tuned; Dr. M. Gounder, 2:40 p.m. today)
Putting it all together: a single institution multimodality experience over time
Inter-series comparison: less desmoid recurrence


Freedom from recurrence at 5 years
1995-2005: 80% (95% CI=74-87%)
1965-1994: 70% (95% CI=63-77%)
Cumulative desmoid recurrence: 1995-2005


21/140 (15%) 1st desmoids recurred
Inter-series comparison: improvement w/ multimodality tx

Inter-series comparison: (+) margins do not affect outcome

Milano series: (+) margins do not affect outcome

Gronchi et al. J Clin Oncol; 2003
Factors influencing desmoid recurrence

Combined UTMDACC/Milano experience:
(n= 581 desmoid patients; 1965-2005)

- Age < 30 y/o
- Extremity site
- Presentation as recurrence
- Size > 5 cm

*Microscopic margin status not significant*

_Gronchi et al. J Clin Oncol; 2003_,
UTMDACC desmoid treatment flow chart

Desmoids primary / recurrent

Resectable

Without morbidity
- Resection
  - Margin +
  - Margin -
    - XRT
  - Observation

With morbidity
- XRT
  - Good response
  - Partial/no response

Not resectable

XRT (extra-abdominal)
- Good response
  - Resect without morbidity or observe and resect with disease progression
- Partial/no response
  - Systemic therapy or observe and treat with progression

Systemic therapy* (intra-abdominal)
- Good response
- Partial/no response

XRT
- Observation

The next steps ???
While the pathway to progress in desmoid is not clearly marked...
Working together . . . we will make things better!!
Thank you for your attention