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### Radiotherapy and Medical Treatment of Desmoid Tumors

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#### Background and purpose

Desmoid tumors are rare soft tissue tumors which can recur even after radical surgery but they do not metastasize. Our aim was to examine the outcome of radiotherapy and systemic treatment of desmoids in a single-institution series.

#### Methods

Data included 48 patients with histologically confirmed desmoid tumors retrieved from pathology reports and treated with surgery, radiotherapy, and/or systemic therapy in Helsinki University Central Hospital between 1987 and 2012. Radiologic images for response evaluation were reviewed. Treatment responses were assessed according to RECIST criteria 1.1. Radiation treatment planning images were merged with diagnostic radiologic images of local failures to investigate the dose distribution.

#### Results

Definitive radiotherapy was evaluated for 21 tumors. The objective response rate was 43% (9/21) with no progressive disease response. For the tumors reaching partial or complete response, median time to response was 11 months (range from 4,2 to 28,4 months). After postoperative radiotherapy six patients were diagnosed with a local recurrence (6/19, 32%). All these local recurrences occurred after intralesional resection. The median time to recurrence was 19,4 months (range from 9 to 71,9 months). Various systemic therapy approaches were assessed in 17 cases with variable responses.

#### Interpretation

Radiotherapy is a valuable option for treating desmoid tumors. Achieving a response may take from months to years. After intralesional surgery and postoperative radiotherapy, the risk of local failure is still considerable.