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An analysis of incidence and significance of trauma prior to desmoid tumor formation

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Background:

The development of desmoid tumors is often associated with trauma. There might be a real trauma like a bike accident or an injury patients are trying to bring into relationship with fibromatosis development. Post-surgery for GIST, desmoid development has also been described.

Methods:

We analyzed the data and the history of our patients with desmoid tumors (n=370, female:male ratio 2:1, average disease onset 34.5 years, proportion of patients being alive with disease 56.7%) in two ways:

- 1 – directly, exploring the history during consultations (first visit or over time)
- 2 – retrospectively, using a questionnaire (n= 47) directed to quality of life assessment during and after therapy

Results:

From 353 patients asked, we received information from 303 patients, in 47 pts. via the questionnaire and in 256 patients from direct report. In the questionnaire group, 13 pts reported a trauma (27.6%) whereas in the 'direct contact' group 151 pts (58.9%) did so (overall 164/303, 54.1%). Of these, an obvious blunt trauma (car, bike,...) reported 31 pts (18.9%). Another 79 pts (48.1%) reported an iatrogenic trauma reaching from diagnostic intervention, injection, site of previous surgery, laparoscopic trocar,...). An association with microtrauma could be detected in n=54 females (32.9%). Median lag time between trauma and desmoid tumor detection, typically being clinically apparent the and leading to 1st consultation of a physician is 1.8 years and is not different in the three groups.

Discussion

The high rate of previous soft tissue trauma must be taken into account in any surgical procedure for desmoids. Also important, trauma plays a role in switching on the Wnt pathway being crucial towards desmoid formation. The activation of the Wnt signaling is controlled at the cell surface. Tissue injury is linked to general elevated expression of cell growth related proteins, leading to aberrant tissue remodeling during reconstitution. We have preliminary data from a pilot study that aberrant Wnt signaling can be detected in the blood of patient's blood with manifest desmoids.