

Abstract (lay version) of project

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Effects of mechanical forces on the cell and tumor behavior of desmoid-type fibromatosis

Since long ago, desmoid-type fibromatosis has been considered to arise in the area with traumatic injury such as area of Caesarean operation. Several previous studies indicated that tumor location such as lower extremity significantly affect the disease course and response to various treatments. However, none of the previous studies have yet investigated the microenvironmental effects on the tumor behavior. Recent studies have shown that CTNNB1 mutation status may affect the disease course and/or response to various treatments, however, this mutation status could not explain all the phenomenon that desmoid tumor shows in disease course. If association of microenvironmental factors with tumor behavior is clarified, physicians and patients could develop strategies for these factors. Considering that desmoid tumor arises mainly in muscles, mechanical forces of muscle stretch should have an impact on cell and tumor behavior. We hypothesize that desmoid cells and tumors are affected by the mechanical forces, and planned to investigate the effects of mechanical forces on the cell and tumor proliferation, biochemical and molecular biological responses.