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Intraoperative Photodynamic Detection of Desmoid Tumor Using 5-ALA

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Background
Desmoid tumor is a locally aggressive benign lesion. High rates of local recurrence are attributed to difficulty in defining appropriate margins of resection during surgery. The authors hypothesized that uptake of a photosensitizing agent by the tumor cells would allow detection of remaining tumoral tissue in the surgical field.
Methods
Between 2009 and 2010 the authors operated on 5 patients who had desmoid tumor. Patients were preoperatively orally given 5-ALA (20mg/kg). Following tumor resection, blue light was used to detect the presence of PPIX, the photoactive product of intracellular 5-ALA biosynthesis, in the resected tumor and within the surgical field.
Results
All resected tumors demonstrated strong and positive fluorescence light, reflecting the presence of bioactive PPIX. However, such fluorescence was not present in the surgical fields.
Conclusions
Residual tumor in the surgical probably cannot be directly viewed with the assistance of 5-ALA. However, assuming that microscopic disease is present in the surgical field, activation of the photosensitizing agent with a red light may induce tumor kill via formation of oxygen radicals and improve local tumor control following surgical resection.

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