

Tilmelding af Foredrag

Foredragets titel

Colour Variations in Squamous Cell Carcinoma

Forfatter(e)

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Afdeling/praksis

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Uddannelsesniveau

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Introduktion

The following project is the result of my PhD, defended in May 2022.

Squamous cell carcinoma is the second most common form of cutaneous malignancy and is a cancer with recurrent disease in case of incomplete resection. Angiogenesis is a cancer characteristic and may indicate tumour margins. Video magnification is a developing field showing potential to enhance invisible physiological phenomena so they can become visible. Remote photoplethysmography is a technique for decoding physiological variation through a video recording.

We hypothesise that blood supply to squamous cell carcinoma can be visualised with motion and colour magnified video recordings and hereby clearly define margins of interest when performing squamous cell carcinoma surgery.

Materiale/metode

We have recorded squamous cell carcinoma tumours in the skin and extracted information from the resection area, healthy tissue areas and areas of sectional cuts made by the pathologist. These extracted data were compared through t-tests and correlation analysis. We repeated these analyses on our original camera setup but also synchronously on a handheld setup based on the Raspberry Pi platform.

Resultater

We found significant differences in the remote photoplethysmography signal variations between the resection area and the healthy tissue area. We also found signal variables describing the cancer growth with a moderate correlation. The trends of these findings were also seen in our repeated study. We found the Raspberry Pi to be a unit with some benefits for acquiring remote photoplethysmography data.

Diskussion

We have presented an experimental setup for acquiring remote photoplethysmography data on squamous cell carcinoma and have developed an analytic framework for comparing regions of interest. Our results are in accordance with the literature.

Forfatters fulde navn

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