In vivo confocal microscopy of basal cell carcinoma: a systematic review of diagnostic accuracy.


ABSTRACT
Basal cell carcinoma (BCC) is the most prevalent type of skin cancer. Histologic analysis of punch biopsy or direct excision specimen is used to conﬁrm clinical diagnosis. In vivo reﬂectance confocal microscopy (RCM) is a non-invasive imaging modality that could facilitate early diagnosis and minimize unnecessary invasive procedures. We systematically reviewed diagnostic accuracy (sensitivity and speciﬁcity) of RCM in diagnosing primary BCCs to judge its usefulness. Eligible studies were reviewed for methodological quality using the QUADAS-2 tool. We used the bivariate random-effects model to calculate summary estimates of sensitivity and speciﬁcity. Six studies met the selection criteria and were included for analysis. The meta-analysis showed a summary estimate of sensitivity 0.97 (95% CI, 0.90-0.99) and speciﬁcity 0.93 (95% CI, 0.88-0.96). All but one of the QUADAS-2 items showed a high or unclear risk of bias with regards to patient selection. RCM may be a promising diagnostic tool, but the limited number of available studies and potential risk of bias of included studies do not allow us to draw ﬁrm conclusions. Future accuracy studies should take these limitations into account.