

Guided surgery by infrared light for sentinel lymph node localization in cutaneous melanoma

Vinicius Vazquez (Barretos Cancer Hospital,Brazil), Camila Crovador (Barretos Cancer Hospital,Brazil), Carlos Eduardo Barbosa Carvalho(Barretos Cancer Hospital,Brazil), Renato de Castro Capuzzo(Barretos Cancer Hospital,Brazil), André Lopes Carvalho(Barretos Cancer Hospital,Brazil), Cristovam Scapulatempo Neto(Barretos Cancer Hospital,Brazil), Cristiano Viana (Barretos Cancer Hospital,Brazil) Euclides Timóteo da Rocha (Barretos Cancer Hospital,Brazil).

BACKGROUND: The regional lymphatic metastasis is an important prognostic factor in melanoma. The sentinel lymph node biopsy (SNB) allows the diagnoses and the early treatment of this disease presentation. The SNB is performed with use of injection markers around the primary lesion, which migrate and can be identified in the first lymph nodes of lymph drainage, which are removed and histologically examined. The lymphoscintigraphy associated to an intraoperative gamma probe and the use of vital or patent blue dye is the standard method. The use of fluorescent substances such as indocyanine green in combination with stimulation light as near infra-red (NIR) has good application in medicine due to the ability to penetrate deeper into tissue, until 2,0 or 3,0 centimeters, without damage, it can be performed NIR dynamic and additional with the methods already standardized.

HYPOTHESIS: It is believed that the NIR associated methods of lymphoscintigraphy and patent blue dye has better accuracy in the location of the sentinel lymph node, especially in areas of ambiguous drainage.

METHODS: Clinical trial, non-randomized study with prospective collection of data for accuracy of the SLN method indocyanine green and NIR added to conventional SLN, compared with the gold standard of SLN patent lymphoscintigraphy and patent blue.

RESULTS: Preliminary results included 59 subjects. For these results we evaluated 80 sentinel lymph nodes. The association between the gold standard - radiopharmaceutical versus NIR had as a result sensitivity of 0.74, specificity of 0.26, positive predictive value (PPV) of 0.85 and negative predictive value (NPV) of 0.43 and accuracy of 0.74. The analysis of patent blue (gold standard) versus NIR had a sensitivity of 0.79, specificity of 0.21, PPV 0.75, NPV 0.64 and accuracy of 0.72. Other combination test, using the joint patent radiopharmaceutical and blue patent as the gold standard versus NIR, the result of sensitivity was 0.77, specificity of 0.23, PPV 0.73, NPV 0.31 and accuracy of 0.72. Ultimately, using the joint patent radiopharmaceutical, blue patent and NIR as the gold standard versus radiopharmaceutical and blue patent the result of sensitivity was 0.96, specificity of 0.04, PPV 0.69, NPV 0.05 and accuracy of 0.79.