Clinics in Surgery

Clinical Image
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The Role of Fluorescence Image in the Robotic Surgery

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Clinical Image

Fluorescence using indocyanine green intravenous injected the day before surgery and near infrared technology during robotic surgery are developing in two main field: the "Navigation Surgery" exploiting the concept of fluorescence guided surgery and the "Targeted Surgery" considering the labeled structures as marker of tumor diffusion. These two Images show the same frame of lymphatic diffusion in a rectal cancer patient, the first one is a standard white light robotic vision of regional lymphatic drain (Figure 1), in the second one the robotic near infrared technique using green indocyanine fluorescence image allows to identify all the lymph node and the lymphatic channels labeled (Figure 2). In this specific case we were able to identify and resect a lymph-node, labeled by green indocyanine, outside of field of standard lymphadenectomy; its pathological examination detected the presence of a micrometastasis. Preliminary studies about this topic showed feasibility and safety of the procedures, useful for higher Lymph-nodes harvested.

Figure 1: Standard white light robotic vision of regional lymphatic drain.

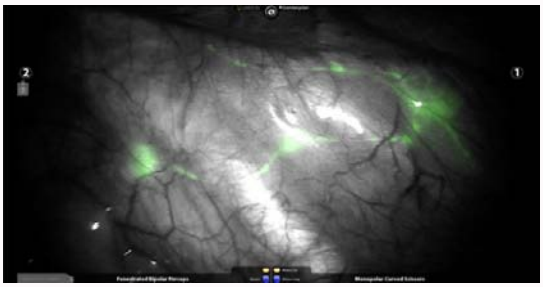

Figure 2: Robotic near infrared technique using green indocyanine fluorescence.

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