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The use of indocyanine green to detect sentinel nodes in breast cancer: a prospective study

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The use of Indocyanine Green (ICG) to detect the Sentinel Lymph Node (SLN) in breast cancer (BC) has been widely discussed in literature. As compared with Technetium (Tc), ICG has different possible advantages: 1) Organisational: involvement of a nuclear medicine department is not necessary; 2) Social: patients no longer need to have Tc or other radioactive material injected at a nuclear medicine department). Further, the ICG technique can be performed in the operating room immediately after the induction of general anaesthesia and without any discomfort to the patient. 3) Operative: when radio-guided occult lesion localization (ROLL) is combined with SN biopsy, SN detection with ICG avoids the superposition of 2 radioactive tracings at the injection site, favoring tumor detection. Some studies pointed out that the SLN detected via ICG coincides with that detected via Tc. After more than 300 surgeries during which we detected the SLN via ICG associated with Tc, thus refining our technique, in the last 4 months we have been using only ICG without combining it with any other tracers. So far, in 112 surgery cases, we have had 100% detection of the SLN with a median of 2 lymph nodes per patient (range: from 1 to 4). We inject a variable quantity of ICG that spans from 0.4 to 0.7 ml depending on the breast volume and on the distance between neoplasia and axilla or between areola and axilla. The time between the injection of the ICG and the incision varies from patient to patient (from 2 to 8 minutes), with a median of 4 minutes. Therefore, it is necessary to follow the subcutaneous migration of the tracer using an infrared torch and make the incision only when the tracer has visibly reached the axilla, not before, otherwise, by interrupting the vessels too soon, the detection of SLNs becomes much more difficult. As we have already reported, ICG increases the average number of detected SLNs as compared to Tc, without increasing complications. This fact does not seem to be a limit, rather, in certain cases – and according to what Giuliano also stated – it allows us to avoid axillary dissections when, out of three harvested lymph nodes, only a metastatic lymph node is detected. Our experience in using only ICG to detect the SLN demonstrates the use of ICG only, once the technique is mastered, allows, always and in every case, the removal of the SLN in BC.

Biography

Domenico Samorani, Medical Doctor, now is Chief of General and Breast Surgery at Santarcangelo Hospital (RN) AUSL Romagna, Italy, Degree in Medicine and Surgery, Specialist in General Surgery at Bologna University. He is expert in oncoplastic breast surgery and he is author of several publications in particular regarding the use of indocyanine green to detect the sentinel lymph node. He was a speaker at the 14th annual meeting of the American Society of Breast Surgeons (Chicago 1 to 5 May 2013).

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