

USE OF QUANTITATIVE FLUORESCENCE IN SYSTEMATIC RESEARCH OF FIRST NON-SENTINEL LYMPH NODE IN MELANOMA SENTINEL LYMPH NODE BIOPSY (FLASH-NODE PROJECT): PRELIMINARY DATA OF A FEASIBILITY STUDY.

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Backgrounds Indocyanine Green (ICG), already proved efficient in melanoma sentinel lymph node biopsy (SLNB), exhibits potential for diffusion to the following LNs, particularly to the first non-sentinel lymph node (NSLN)¹. This study investigates quantitative fluorescence to identify NSLN in patients with melanoma undergoing SLNB.

Methods SLNB patients underwent Technetium-99m-MIBI scintigraphy 3-6h before and peri-scar intradermal injection of 1,5-3ml of ICG 15min before. SLN research was performed using the scintiprobe and the SPY-cam probe (figure 1), that defines the presence of fluorescence in the drainage LNs, both qualitatively and quantitatively. SLN was defined as LNs with fluorescence > 400% relative to the injection site (figure 2). After SLN removal, other lymph nodes – defined as NSLN - showing fluorescence rates beyond 250 % with respect to the injection site were systematically researched and excised.



Fig.1

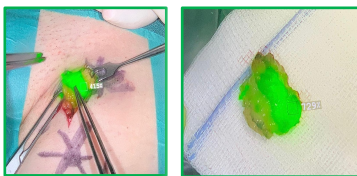


Fig.2

Patient	Site	LSN	NSLN
1	Right Armpit	-	-
	Right Groin	-	-
2	Right Armpit	-	-
3	Right Armpit	-	-
4	Right Groin	-	-
5	Right Groin	-	-
6	Right Groin	-	-
7	Right Groin	-	-
8	Right Armpit	-	X
9	Right Groin	-	X
10	Left Groin	-	-
11	Right Armpit	-	-
12	Left Armpit	+	-
	Left Groin	+	-
13	Right Armpit	-	-
	Right Groin	-	-
14	Right Groin	-	-
15	Left Armpit	-	-
16	Left Groin	-	+
17	Right Armpit	-	-
18	Right Armpit	-	-
19	Left Armpit	-	-
20	Right Armpit	+	-
21	Right Armpit	-	-
22	Left Armpit	-	X
23	Right Armpit	+	X
24	Left Armpit	-	X
25	Right Groin	-	-
26	Left Groin	-	-
27	Left Armpit	-	+
28	Left Groin	-	+
29	Left Armpit	-	-
30	Left Armpit	+	-
	Left Groin	+	-
31	Right Armpit	-	-
32	Left Armpit	-	+
	Left Groin	+	+
	Right Groin	+	-
33	Right Armpit	-	-
34	Left Armpit	-	-
35	Right Armpit	-	-
	Left Armpit	-	-
36	Left Armpit	-	-
37	Left Armpit	-	-
38	Right Groin	-	-
39	Right Armpit	+	+
40	Right Groin	+	+
41	Right Armpit	-	-
	Left Armpit	-	-
42	Right Groin	-	-
43	Left Armpit	-	-
44	Left Armpit	+	+
45	Left Armpit	+	+
46	Right Armpit	+	-
	Left Armpit	+	-
47	Right Groin	-	-
48	Left Armpit	-	-
49	Right Armpit	-	-
	Left Armpit	-	-
50	Left Groin	-	-

Table 1

Results (table 1) 60 SLNB were done in 50 patients. SLN was positive in 28% (17/60). At least one NSLN was identified in 55 cases (91,7%) resulting positive in 8% (5/55) of cases. More than one NSLN was identified in 23 procedures. In two cases (3,6%) the NSLN was positive with SLN negative. Neither demographic nor histopathologic factors proved relevant to detect NSLN.

Conclusions NSLN search via quantitative fluorescence analysis proves feasible in 92% of cases. In two cases NSLN positivity was highlighted in the absence of disease in the SLN, hypothesizing that the systematic search for the NSLN can reduce the number of false negatives in SLNB. The study provides insights in possible upgrades of current SLNB standards, worthy of further investigation.

BIBLIOGRAFIA

1. Stoffels I, Dissemond J, Pöppel T, Schadendorf D, Klode J. Intraoperative Fluorescence Imaging for Sentinel Lymph Node Detection: Prospective Clinical Trial to Compare the Usefulness of Indocyanine Green vs Technetium Tc 99m for Identification of Sentinel Lymph Nodes. JAMA Surg. 2015 Jul;150(7):617-23. doi: 10.1001/jamasurg.2014.3502.

