

Sentinel Lymph Node Biopsy: Is it routine?

Mr. Vasilios Makris, M.D., FRCS
Breast Unit
Hippocrateon Private Hospital

Sentinel Lymph Node Biopsy: Is it routine?

Mr. Vasilios Makris, M.D., FRCS

First Visit

15-02-08



Sentinel Lymph Node Biopsy: Is it routine?

Mr. Vasilios Makris, M.D., FRCS

Axillary dissection

- Benefits:

- Good local control
- Stages the axilla.

Most important factor in determining prognosis

- Disadvantages

- Removal of negative axillary nodes does not increase long term survival
- Significant functional impairment

Shoulder joint mobility, numbness, lymphoedema, psychological morbidity, decreased quality of life

Sentinel Lymph Node Biopsy: Is it routine?

Mr. Vasilios Makris, M.D., FRCS

Facts

- 20 years ago 70% of patients had metastases to the axillary nodes.
- The last decade due to the widespread use of screening programs, the new diagnostic methods and the increased awareness of the patients, breast cancer is diagnosed at an earlier stage.
- Only 30% of patients have metastasis to axillary node
- Need for a less invasive method
- Surgical clearance only when histologically positive nodes

Sentinel Lymph Node Biopsy: Is it routine?

Mr. Vasilios Makris, M.D., FRCS

Sentinel node biopsy

- This is a revolutionary method to determine if cancer cells have metastasised to the regional lymph nodes
 - Identifies the first node in the axillary chain which receives drainage from the tumour
- ➔ Most likely node to contain metastasis

The sentinel node hypothesis

- Cvanas 1977, penile carcinoma
- Morton 1980, melanomas
- Krug and Giuliano 1994, breast carcinoma

Sentinel Lymph Node Biopsy: Is it routine?

Mr. Vasilios Makris, M.D., FRCS

Our experience

- We have started this technique last year (2007)
- Risk of not identifying the sentinel lymph node
- Risk of obtaining false negative results
 - Local recurrence
 - Risk of systemic relapse
 - Inappropriate adjuvant therapy
- Combination of isotope-Lymphosentigraphy and blue dye mapping
 - Maximize successful localization
 - Minimize false negative results

Sentinel Lymph Node Biopsy: Is it routine?

Mr. Vasilios Makris, M.D., FRCS

The technique:

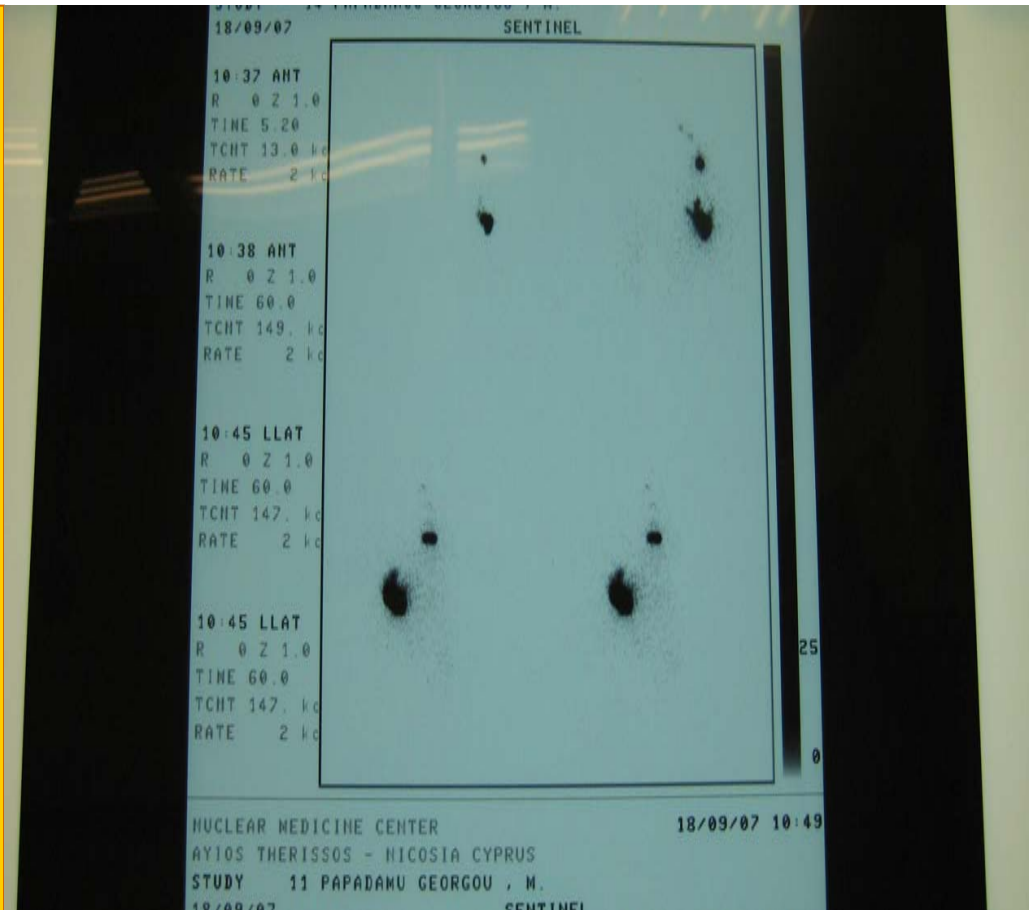
- The radiologist first detects lesion with ultrasound
- Sub-areolar injection of Radioactive Technetium 99m colloid



Sentinel Lymph Node Biopsy: Is it routine?

Mr. Vasilios Makris, M.D., FRCS

- Lymphosentigraphy is routinely performed to all pts
- It allows detection (in unexpected drainage side) and location of the sentinel node
- It marks the location (assisting in planning the incision)



Sentinel Lymph Node Biopsy: Is it routine?

Mr. Vasilios Makris, M.D., FRCS

In the
operating
theatre:

- Identify the S.L.N. using the gamma detecting probe



Sentinel Lymph Node Biopsy: Is it routine?

Mr. Vasilios Makris, M.D., FRCS

- Inject blue dye in sub-areolar area



Sentinel Lymph Node Biopsy: Is it routine?

Mr. Vasilios Makris, M.D., FRCS

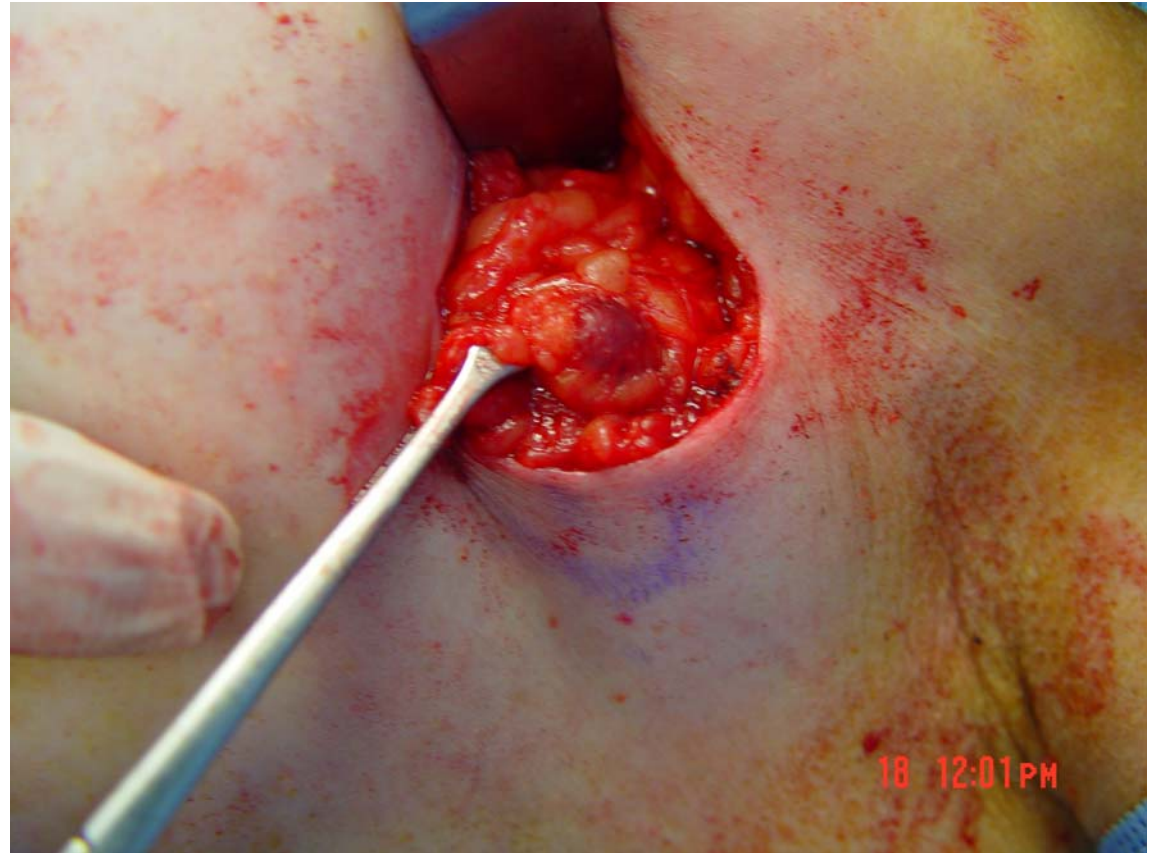
- Verify the exact location using the gamma probe



Sentinel Lymph Node Biopsy: Is it routine?

Mr. Vasilios Makris, M.D., FRCS

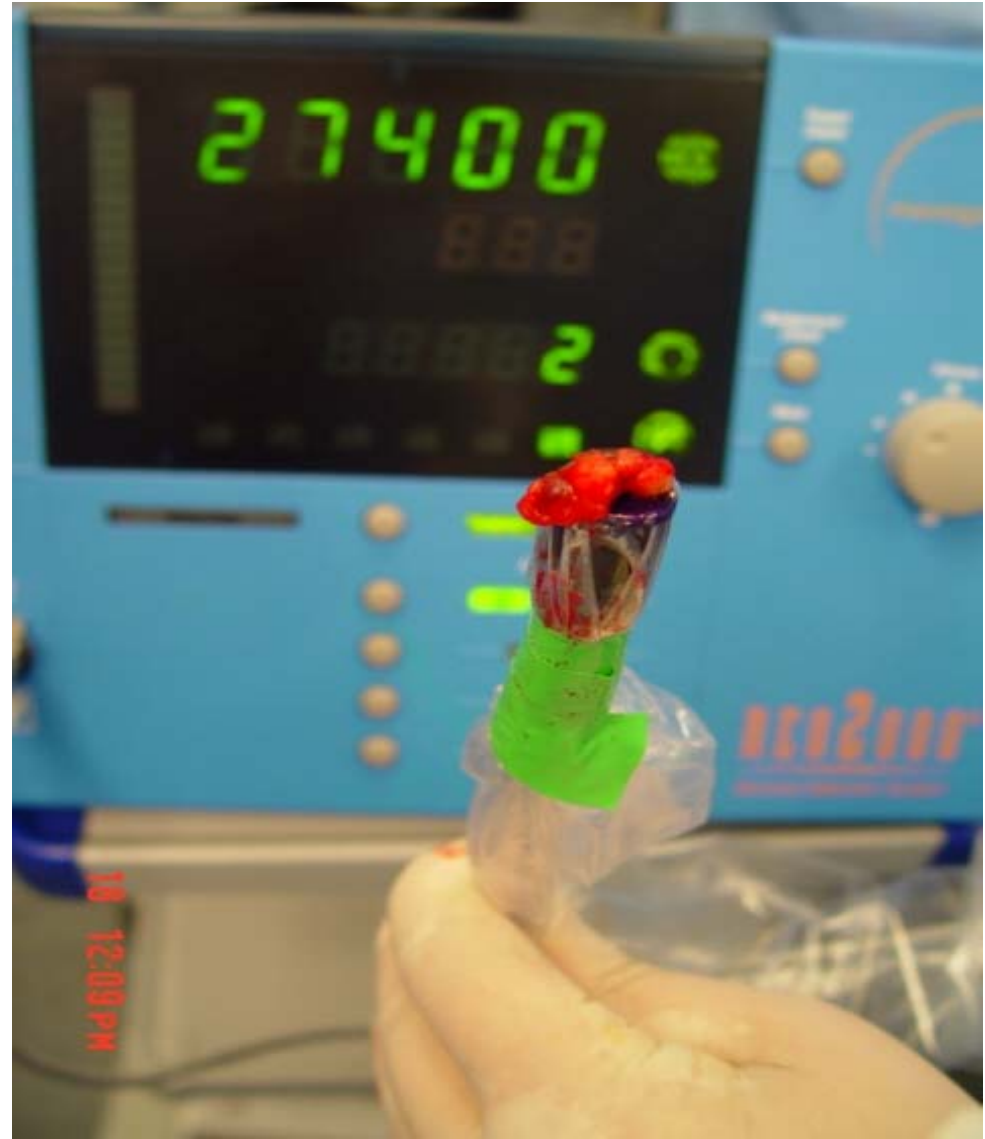
- Incision made in axilla (before the breast)
- Identification and excision of the blue and hot node



Sentinel Lymph Node Biopsy: Is it routine?

Mr. Vasilios Makris, M.D., FRCS

- Ex-vivo confirmation
(The Ex-vivo radioactivity count ratio of S.L.N. to non S.L.N. is 10:1)



Sentinel Lymph Node Biopsy: Is it routine?

Mr. Vasilios Makris, M.D., FRCS

- Sentinel node is sent for histological examination separately
- Subjected to more detailed histological examination
- Detecting micrometastases
- Increasing the accuracy of staging

Sentinel Lymph Node Biopsy: Is it routine?

Mr. Vasilios Makris, M.D., FRCS

BREAST UNIT HIPPOCRATEON HOSPITAL RESULTS OF S.L.N.B. IN BREAST CANCER -2007-

NO	NAME	AGE	T.N.M. STAGING	TRUE CUT DIAGNOSIS	LYMPHO SENTIGRAPHY		BLUE DYE	NO OF S.L.N. FOUND		LYMPH NOTES REMOVED	NO OF GLANDS INVOLVED
					Axilla	Int. Mam					
1	S.M.	34	pT2 N1 Mx	G3 Ductal	1	0	YES	1	+	10	2
2	K.P.	61	pT2 N1 Mx	G3 Ductal	1	0	YES	2	+	12	5
3	M.P.	61	pT2 N1 Mx	G1 Lobular	1	0	NO	1	+	5	1
4	V.S.	45	pT2 No Mx	G3 Ductal	1	0	NO	1	-	11	0
5	M.P.	61	pT2 N1 Mx	G1 Lobular	1	0	YES	1	+	5	1
6	M.K.	45	pT1c No Mx	G2 Ductal	1	0	NO	2	-	6	0
7	P.G.	48	pT1 No Mx	G2 Lobular	1	0	NO	1	-	3	0
8	M.T.	43	pT1c No Mx	G2 Ductal	1	0	YES	2	-	4	0
9	A.K.	51	pT1a N1a Mx	G1 Ductal	1	0	YES	1	Micro	6	1 Micro
10	K.T.	46	pT1c No Mx	G1 Ductal	1	0	YES	1	-	3	0
11	C.M.	47	pT1c No Mx	G1 Lobular	1 L II	0	YES	1	-	3	0
12	E.K.	59	pT2 N1 Mx	G3 Ductal	1	2	YES	1	F.N.	20	3
13	A.L.	48	pT1c No Mx	G2 Ductal	1	0	NO	1	-	4	0
14	M.G.	55	pT1c No Mx	G1 Mucinous	1	0	YES	1	-	7	0
15	M.S.	48	pT1c No Mx	G2 Ductal	1	0	YES	1	-	12	0
16	P.K.	46	pT2 No Mx	G2 Ductal	1	0	YES	1	-	4	0
17	N.H.	65	pT1a No Mx	G2 Ductal	1	0	YES	1	-	3	0
18	T.L.	35	pT1 No Mx	G2 Ductal	1	0	NO	1	-	4	0
19	L.P.	46	pT1b No Mx	G1 Tubular	1	0	YES	2	-	8	0
20	G.X.	59	pT1b N Mx	G3 Ductal	1	0	YES	1	+	11	1
21	M.CH.	58	pT2 N2 Mx	G3 Ductal	1	0	YES	1	+	9	4
22	M.K.	53	pT2 No Mx	G1 Lobular	1	0	YES	1	-	4	0
23	A.V.	50	pT1c No Mx	G2 Ductal	1	0	YES	1	-	5	0
24	D.S.	56	pT1b No Mx	G3 Ductal	1	0	NO	-	-	11	0
25	A.L.	64	pT2 N1 Mx	G2 Ductal	1	0	NO	-	-	10	2
26	N.CH.	44	pT1c N1 Mx	G1 Lobular	1	0	NO	2	+	14	2

Sentinel Lymph Node Biopsy: Is it routine?

Mr. Vasilios Makris, M.D., FRCS

Own results

- Number of patients: 26 (approximately the learning curve number)
- Mean age: 51 (range: 34-65)
- Tumors were diagnosed via true cut guided biopsy (up to 5cm with clinical negative axilla)
- Lymphosentigraphy performed to all 26
- Blue dye 19/26
- Sentinel lymph nodes removed: 1 or 2
- Sentinel lymph node identification rate: 92.31% (in 24 out of 26 pts)
- False negative rate: 3.8% (1 out of 26 pts)
- Of the 26 pts 8 found to have positive S.L.N. (corresponding to 31%)
- These 8 pts were subjected to axillary dissection (removing 10-20 nodes)
- The remaining 18 pts were not subjected to a back up axillary dissection

Sentinel Lymph Node Biopsy: Is it routine?

Mr. Vasilios Makris, M.D., FRCS

Eligible:

- Palpable or inpalpable tumors proved histologically as malignant
- Selected pts with D.C.I.S.

Excluded:

- Previous breast and axillary surgery
- Pregnancy and lactation
- Multifocal and multicentric carcinoma (not absolute contra-indication)
- Advanced T3-4 tumors and inflammatory carcinomas
- Clinically palpable suspicious axillary nodes
- Positive on pre-operative F.N.A. cytology or positive ultra-sound guided core biopsy in axillary lymph nodes

Sentinel Lymph Node Biopsy: Is it routine?

Mr. Vasilios Makris, M.D., FRCS

CONCLUSION

- Highly successful, safe and acceptably accurate
- Reduces upper limb morbidity
- Will replace routine axillary dissection
- However, its success depends on
 - multi-disciplinary team: surgeon, radiologist, nuclear medicine physician, pathologist, medical oncologist, plastic surgeon
 - Medical centre appropriately equipped

Sentinel Lymph Node Biopsy:

Is it routine?

Mr. Vasilios Makris, M.D., FRCS

“The lymphatic mapping and the sentinel lymph node procedure are here to stay”