

to assess the benefit of routine intra-operative analysis using OSNA with compared to routine histological analysis.

Methods: Data from 390 consecutive patients undergoing intra-operative OSNA analysis of sentinel nodes from May 2010 to November 2011 in a single institution were collected prospectively. All patients had a normal pre-operative axillary ultrasound. All patients underwent either mastectomy (Mx), wide local excision (WLE) or wire-guided WLE (WG-WLE) for invasive breast cancer or multifocal DCIS.

Routine localisation of the sentinel nodes was performed using radioactive colloid and blue dye. SNBs identified were sent for intra-operative analysis. Patients positive for metastasis were subject to axillary node clearance (ANC) at the same setting. The number of patients requiring further breast surgery (margins or mastectomy) was recorded.

Results: 390 patients underwent SNB. 2 patients were excluded, as all their node specimens were too small for OSNA analysis. 105, 162 and 121 patients underwent mastectomy, WLE and WG-WLE, respectively. 137 patients required an immediate ANC (OSNA negative, but clinically involved: 2, OSNA micrometastasis: 59, OSNA macrometastasis: 76). A total of 56 (14%) patients required re-excision of margins after surgery (Mx: 0, WLE 37, WG-WLE: 19). Only 29 (21%) patients who underwent ANC required further re-excision surgery (Mx: 0, WLE: 22, WG-WLE: 7). Thus 79% of those undergoing immediate ANC were spared a second procedure by having intra-operative sentinel node analysis.

Number of operations and re-excisions by OSNA result and need for ANC

OSNA	ANC	Pts	Mx	Post MX re- excision	%	WLE	Post WLE re- excision	%	WG- WLE	Post WG- WLE re- excision	%
Neg	Yes	2	0	0	0	2	0	0	0	0	0
Neg	No	229	60	0	0	88	15	17	81	9	11
Micro	Yes	59	15	0	0	30	13	43	14	4	29
Micro	No	23	7	0	0	6	0	0	10	3	30
Macro	Yes	75	23	0	0	36	9	25	16	3	19
Totals		388	105	0	0	162	37	23	121	19	16

Pts, patients.

Discussion/Conclusions: This is one of the largest single-centre series of intra-operative analysis of sentinel nodes using OSNA. The introduction of OSNA has removed the need for ANC at a later stage. Despite the need for re-excision breast surgery in cases of positive margins, intra-operative analysis drastically reduces the number of patients who will require further surgery, by 79%. This is better for both the patient and the health economy, by offering a single operation, reducing waiting times, and expediting the start of adjuvant therapy.

617

Poster

Detection Rates of Micrometastasis in Sentinel Nodes: a Comparison of Intraoperative One-Step Nucleic-Acid Amplification (OSNA) Versus Routine Histopathology

D.D. Remoundos¹, H.A. Wilson¹, V.V. Ng¹, F. Ahmed¹, Y. Chia², G.H. Cunliffe¹. ¹Wycombe Hospital, Department of General Surgery, High Wycombe, United Kingdom; ²Wycombe Hospital, Department of Histopathology, High Wycombe, United Kingdom

Background: Sentinel node biopsy (SNB) is standard practice for staging the axilla in clinically node negative breast cancer patients. SNB-positive patients undergo axillary dissection at a later date. However, intra-operative analysis has made this process a single-step procedure, thus avoiding delay in surgery. OSNA is a novel molecular method for detecting SNB metastasis, requiring minimal pathologist input and an automated machine operation.

Aim: To determine the incidence of OSNA-detected lymph node positivity, differentiating between micro- and macro-metastasis, and comparing it to routine histopathological analysis.

Method: Sentinel nodes (SNBs) from 390 consecutive patients (602 SNBs) undergoing intra-operative OSNA analysis from May 2010 to November 2011 were compared to the results from 100 patients undergoing routine histological analysis of SNBs in the preceding period. All patients had clinically and radiologically normal axillary nodes. Patients had either invasive cancer or widespread DCIS. Routine localisation of the sentinel nodes was performed using radioactive colloid and blue dye. Positive SNBs underwent either an immediate (OSNA) or delayed (routine pathology) axillary dissection.

Results: OSNA: 2/360 patients were excluded, as their nodes were too small for analysis. 231 (60%) patients had normal lymph nodes, 82 (21%) had micrometastases, and 75 (19%) macrometastases.

Routine histology: 19/100 (19%) patients had macrometastases rates and 2/100 (2%) had micrometastases.

Conclusions: This is one of the largest single-centre series of intra-operative analysis of axillary nodes using OSNA. The technique has been fully validated when compared to multiple section, immunohistochemical histopathology in other studies. We found that OSNA processing is consistent and reliable with only a minimal number of lymph nodes unsuitable for processing. Detection of micrometastasis is significantly higher in the OSNA group compared to routine histopathology. Conversely, the incidence of macrometastasis was the same with both methods. The need for further axillary surgery for micrometastasis is now controversial, following recent published studies. However, such information does influence prognosis and the need for systemic therapy.

618

Poster

Sentinel Node Biopsy Analysis Using Intraoperative One-Step Nucleic-Acid Amplification (OSNA): at What Time Cost?

D.D. Remoundos¹, H.A. Wilson¹, V.V. Ng¹, F. Charlton¹, F. Ahmed¹, Y. Chia², G.H. Cunliffe¹. ¹Wycombe Hospital, Department of General Surgery, High Wycombe, United Kingdom; ²Wycombe Hospital, Department of Histopathology, High Wycombe, United Kingdom

Background: Sentinel Node Biopsy (SNB) has become standard practice for staging the axilla in clinically node negative breast cancer patients. SNB positive patients undergo a delayed axillary dissection after routine histological assessment of the sentinel node. Intra-operative analysis has made a single-step procedure possible. However, the time delay and possible interruption to the operating list have not been properly studied. OSNA is a novel molecular method for detecting lymph node metastasis, using an automated machine and requiring minimal pathologist input.

Aim: To determine the time taken to obtain the OSNA result (node status), and to see whether it had a significant impact on the total time of surgery for those with negative nodes (i.e. no axillary dissection required).

Method: A prospective study of 232 patients with clinically and radiologically negative axillary nodes undergoing breast surgery and intra-operative OSNA analysis of sentinel nodes between May 2010 to November 2011.

Routine localisation of the sentinel nodes was performed using radioactive colloid and blue dye. Lymph nodes were sent for intra-operative analysis, while the breast operation was performed. Patients with positive nodes underwent immediate axillary dissection and were excluded from the study.

The duration of surgery to the axilla and the breast, in addition to the time needed to obtain an OSNA result were recorded prospectively.

Results: 63 patients underwent mastectomy, 90 wide-local excision (WLE) and 79 wire-guided WLE (WG-WLE). The median time to remove the SNB was 15min. The median times for the breast operation to be completed were 45min. Median times for mastectomy, WLE and WG-WLE were 59min, 42min and 40min. The median delay for obtaining the OSNA result was 42min. The median waiting time between finishing the breast procedure and obtaining the OSNA result was 8min. [Mastectomy 5min, WLE 8min and WG-WLE 10min]. In 28% of patients the OSNA result was made available prior to the end of the breast operation [Mastectomy 43%, WLE 29% and WG-WLE 15%]. 77 patients required ANC.

	Median times (in minutes)		
	Breast procedure	SNB results	Waiting
Mx	59	45	5
WLE	42	43	8
WG-WLE	40	41	10
Overall	45	42	8

Conclusion: OSNA is a quick and reliable intra-operative method for analyzing SNB. On average, operations for those with negative nodes were only delayed by 8 minutes, which is not excessive. For node positive patients, it allows a single operation, thus avoiding the psychological and financial implications of further surgery.