Melanoma Sentinel Lymph Node Dissection

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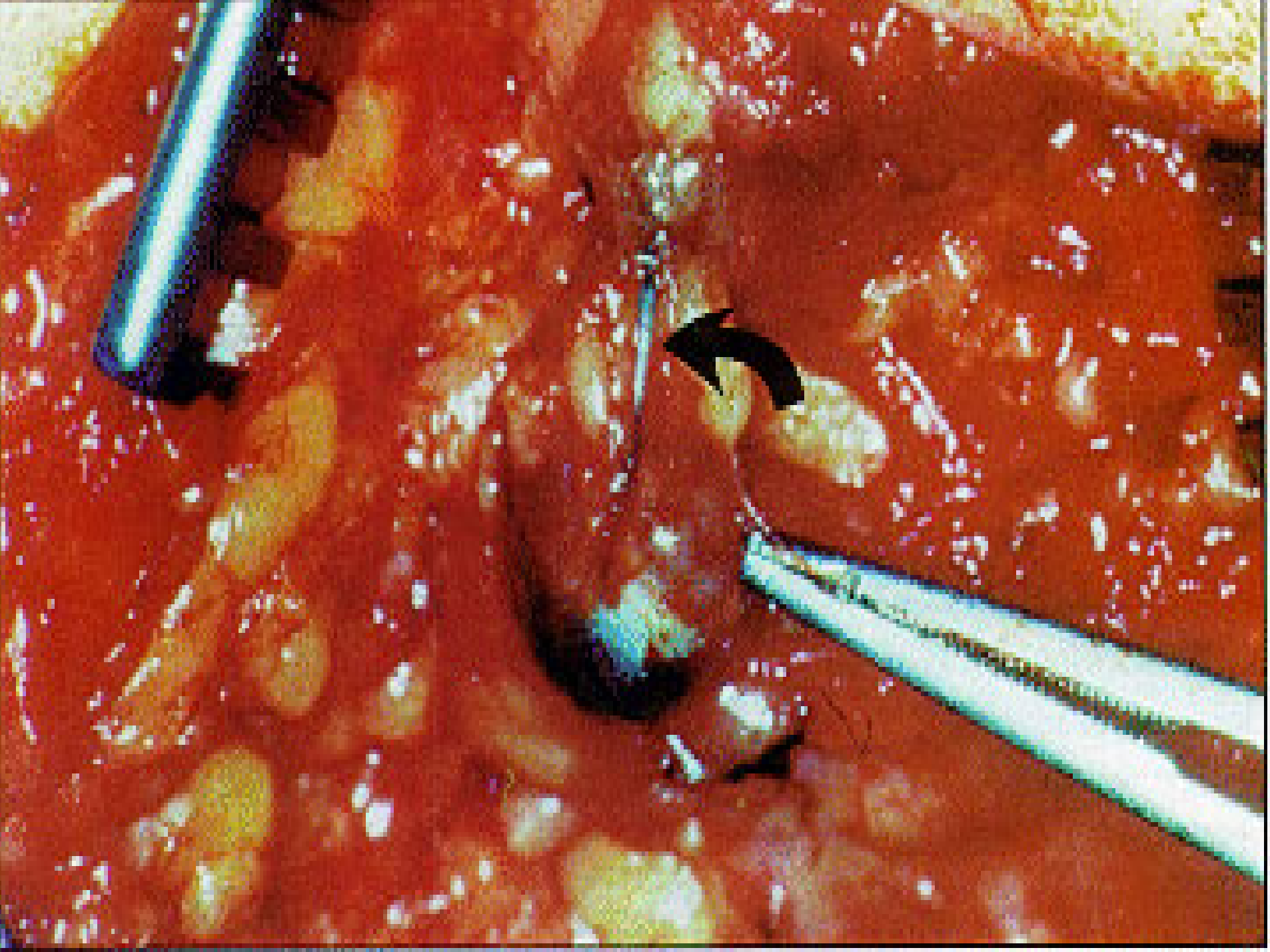
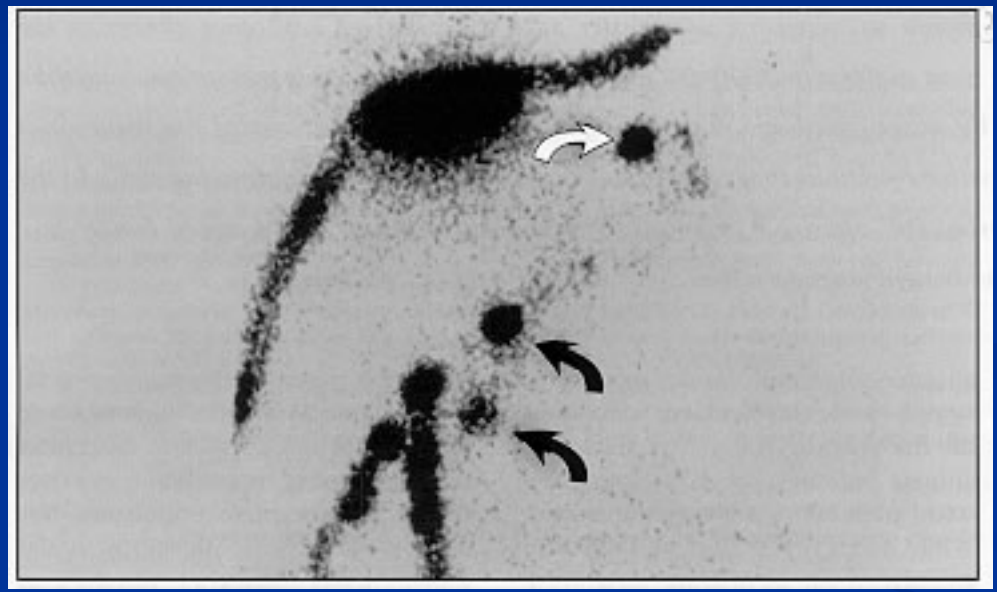




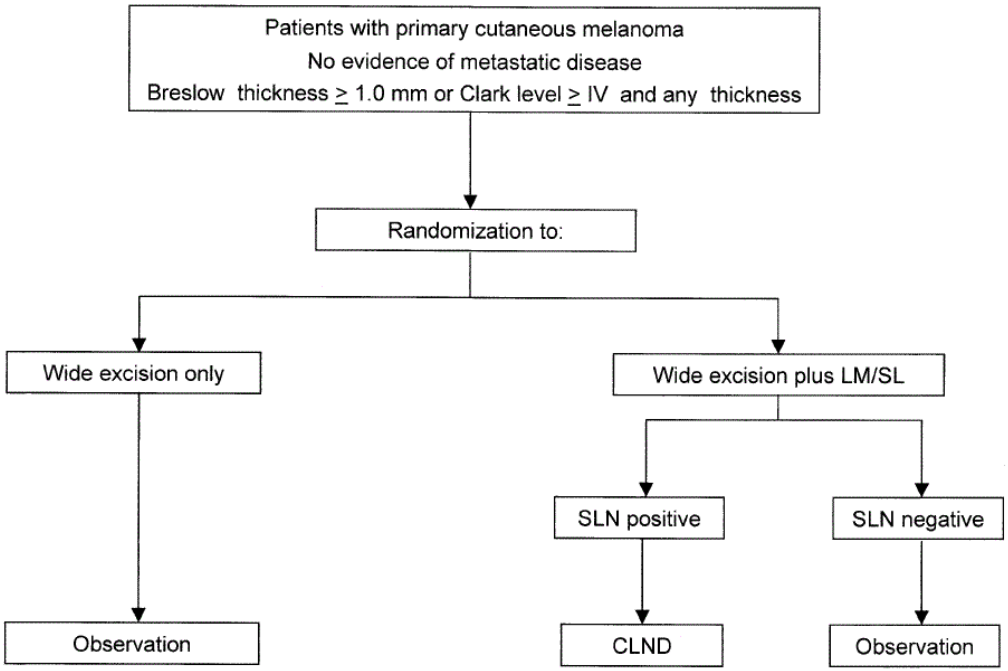


Fig 8. Multicenter Selective Lymphadenectomy Trial treatment algorithm. *CLND*, Complete lymph node dissection; *LM/SL*, lymphatic mapping and sentinel lymphadenectomy; *SLN*, sentinel lymph node.

Skip metastasis beyond the first node is rare

ELND failed to increase survival because it was applied to unselected patients

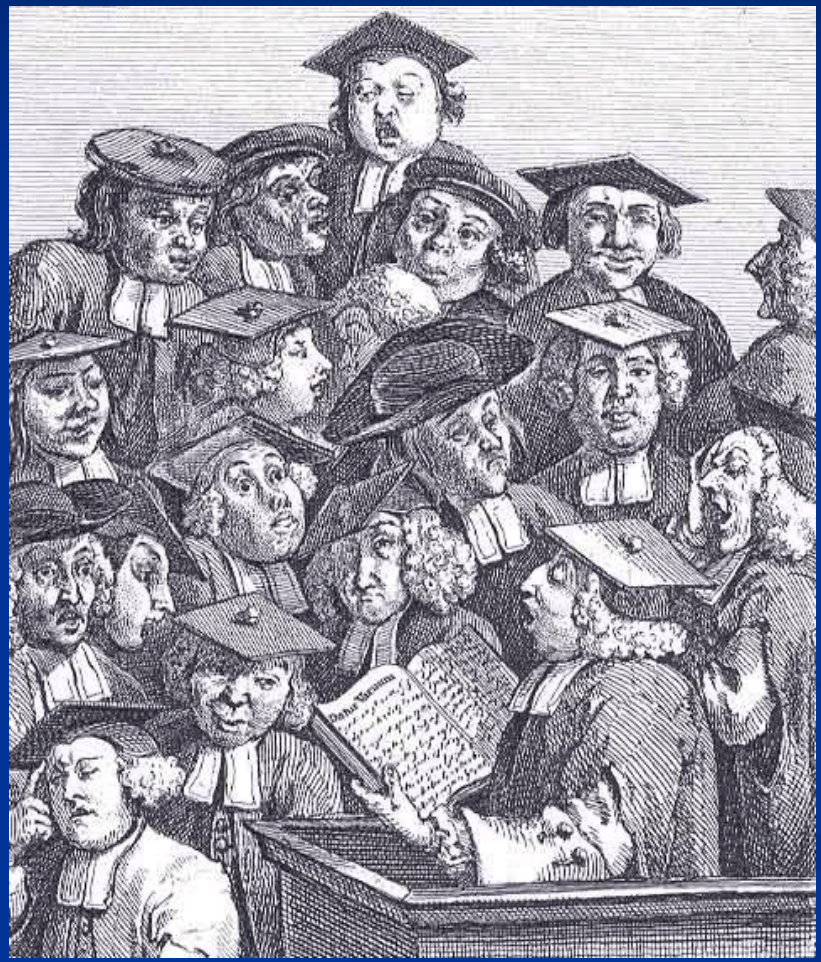
Complete regional dissection in patients with positive SN would result in more effective cure by disrupting the metastatic cascade

SLNB reduces the morbidity of ELND

SLNB is a derivative of an ineffective therapy

Lack of evidence proving improved staging leads to a benefit in selecting therapy

What Do the Studies Show?



TRIAL	DESIGN	OUTCOME
Intergroup Melanoma Trial	Melanoma 1-4 mm ELND	ELND with slightly better survival at 10 yrs
WHO #1*	Extremity melanoma No lymphoscintigraphy	ELND no difference in survival
WHO #14*	Trunk melanoma	ELND with slightly better survival at 10 yrs

Caveats

- Lack of lymphoscintigraphy may miss 5% of pts. with in-transit metastasis
- Trunk melanomas unpredictable drainage 32%


THE TRUTH IS OUT THERE

Lymphatic mapping identifies the first node receiving lymphatic drainage from a given skin area in over 95% of cases

Proportion of melanoma-positive sentinel nodes is higher in patients with thicker tumors

Presence of histologically and/or histochemically detectable tumor cells in the lymphatic basin is a more informative predictor of early relapse than Breslow thickness

Let's Debate!

…Tumor Cells in the Sentinel Node are always the first step in Metastasis and must be removed promptly…

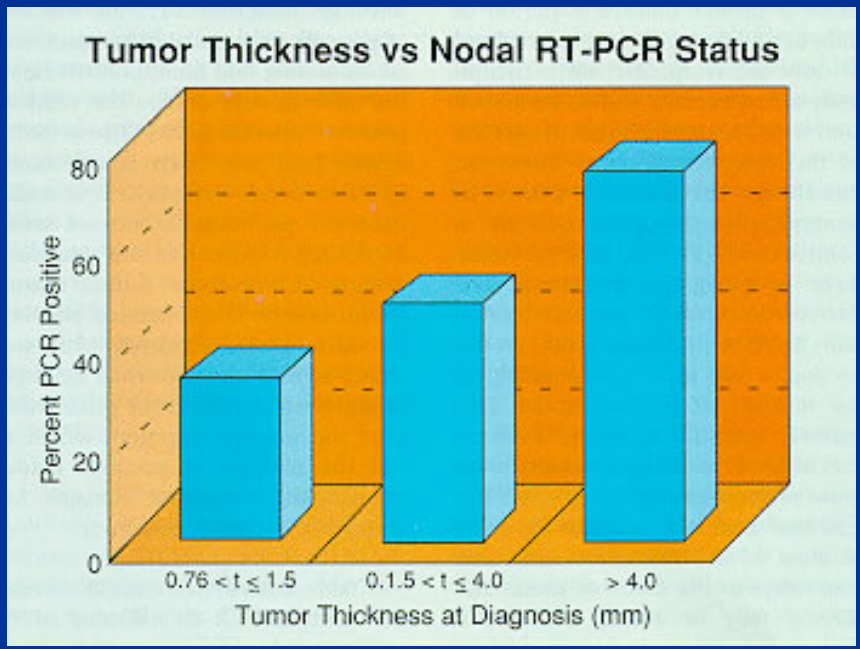
Few Cells vs. Many Cells

- Extensive tumor involvement probably true metastasis
- Significance of few cells unclear
  - Prognosis depends upon the size of tumor microdeposits
- Tumor cell migration may occur to LN other than SN

Sensitivity

Prognostic value of SLNB may not be due to its ability to separate patients with tumor cell migration from patients free of migration, but to its inability to detect anything but a high tumor load in the first node.

Sensitivity



- If an extremely sensitive test could detect any tumor cells, it may lead to a higher proportion of positive findings but with a much lower prognostic value

…The only drawback of SNLB is the side effects of mini-invasive surgery…

Immune System Alterations

- Resecting SN may remove the critical first defense
- Nodal mets may occur years after resection implying active nodal immune response
- Few tumor cells may provide a natural vaccine

Immune System vs. Tumor Deposits

- Oncologists assume SLNB is loss of a "vaccine" is less damaging than leaving tumor cells
- May be true if SN is destroyed by massive tumor
- May be wrong if only few tumor cells in SN
- Must compare outcome in patients who do not receive SNLB against the outcome of those who receive it without additional nodal dissection

…Immediate dissection of nodes containing micrometastases improves prognosis…

ELND No Survival Advantage

TUMOR CELLS	**MASSIVE**	**FEW**
PROGNOSIS	Favorable	Unfavorable
IMMUNE SYSTEM	Active	Inactive

…SLNB is effective for indicating IFN adjuvant therapy…

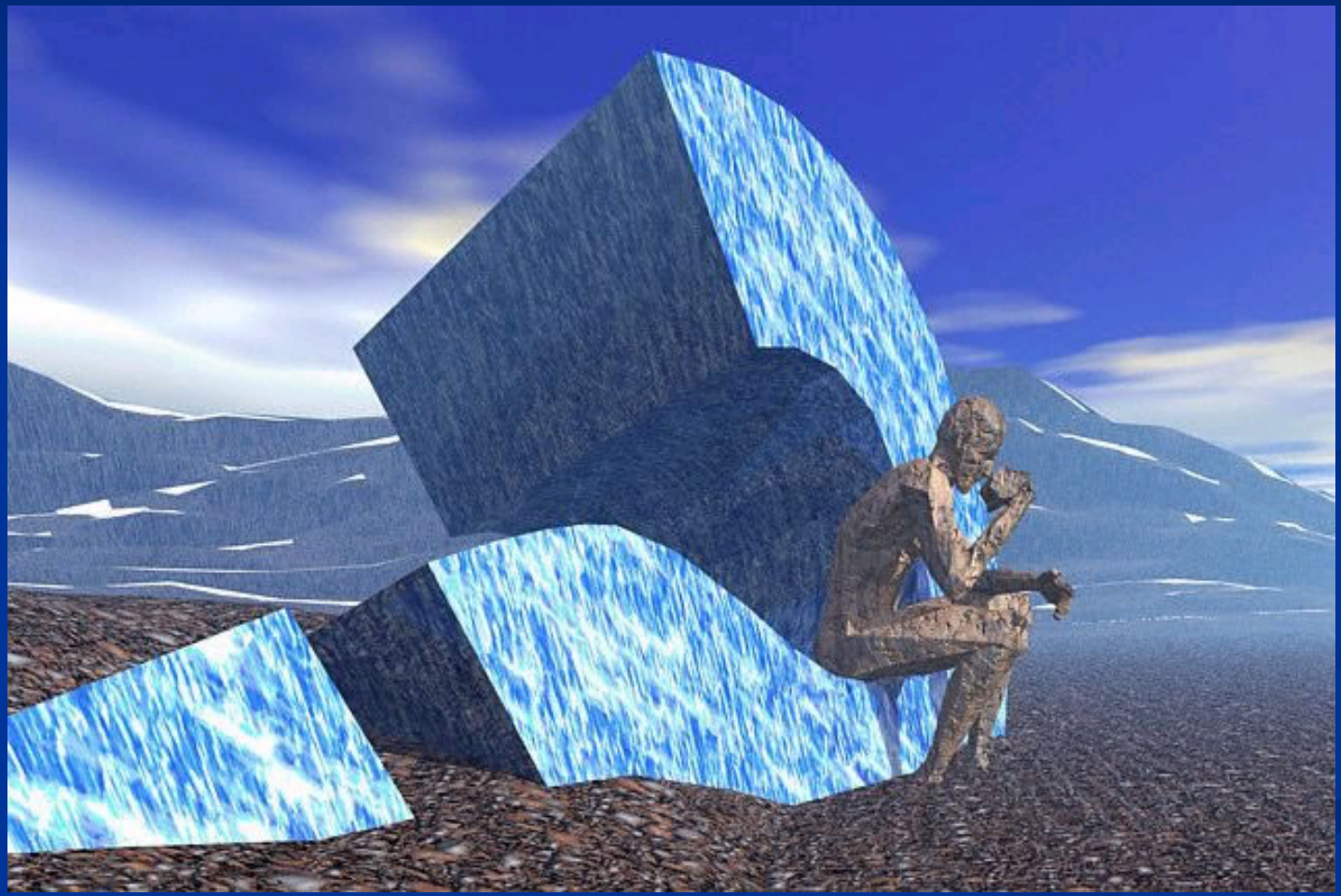
What if?

- Potential benefits of IFN therapy may be partly mediated by its effect on immune process set in motion around tumors cells in the first draining node

→ SLNB may be contraindicated in some cases

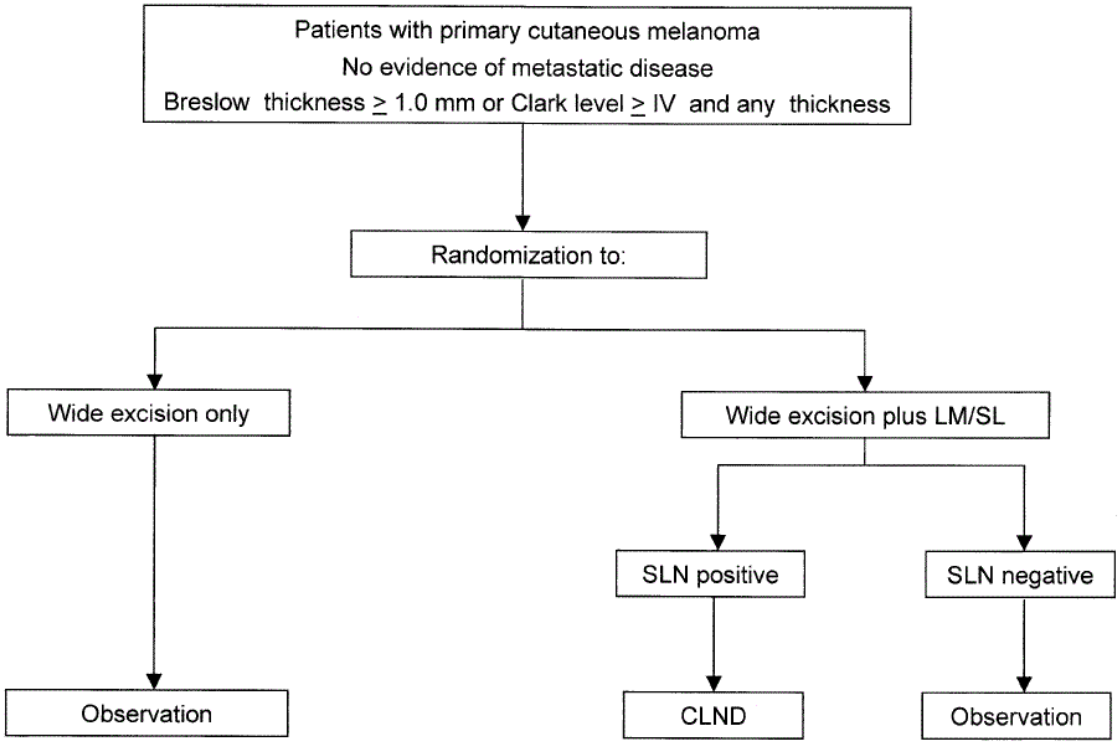
ECOG STUDY	Therapy	Outcome
1684	HDI in stage III	+DFS and OS
1690	HDI	+DFS
1694	HDI vs. vaccine	+DFS and OS*

Bottom Line?



Does SLNB Increase Survival?

STUDY	DESIGN	OUTCOME
Dessureault, *etal*	SLNB	5YRS 10% higher than Node negative by ELND 5YRS 17% higher node negative by PE
Morton, *etal.*	Compare the outcome in patients who do not receive SNLB against the outcome of those who receive it without additional nodal dissection	Ongoing



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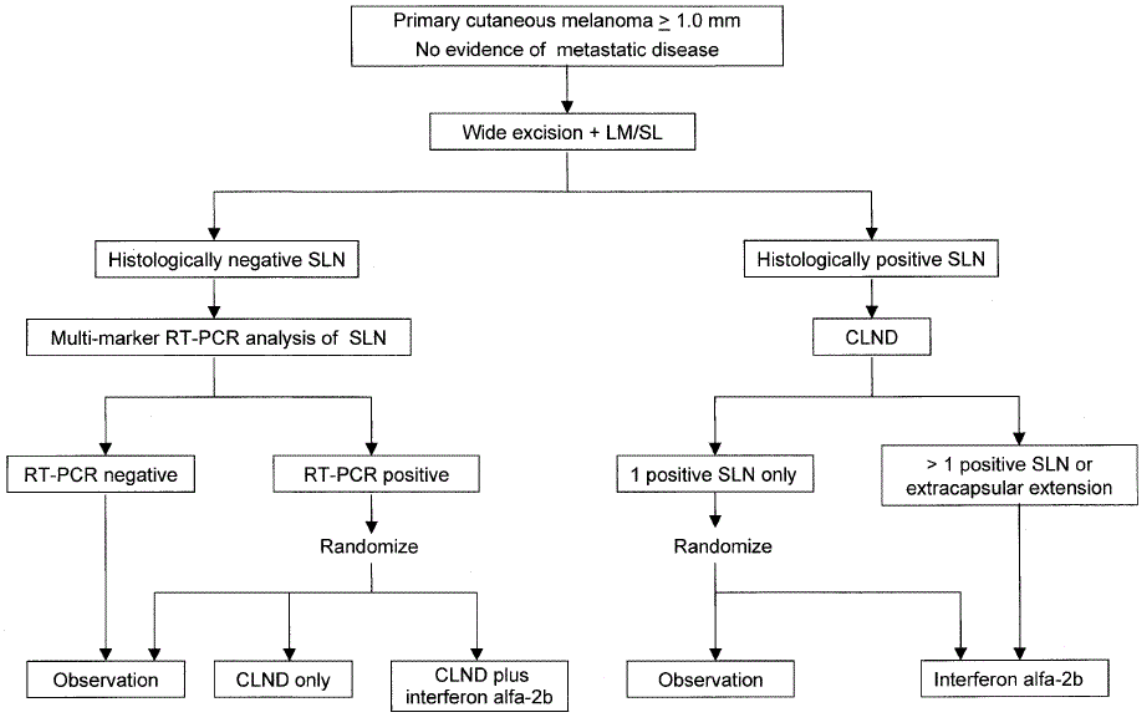

Fig 9. Sunbelt Melanoma Trial treatment algorithm. *CLND*, Complete lymph node dissection; *LM/SL*, lymphatic mapping and sentinel lymphadenectomy; *RT-PCR*, reverse transcriptase polymerase chain reaction; *SLN*, sentinel lymph node.

References

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- Kirkwood JM, etal. JCO 1996;14:7-17.
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