

Branched Tubular Structures in Human Malignant Melanoma

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Careful study of capillary endothelial cells as part of the stroma reaction in human malignant melanoma showed branched tubular structures (BTS). These structures were found in five cases, two of which were melanoma superficial spreading type with strong host cellular response (level 2 invasion), and one of which was a nodular melanoma (level 3 invasion) associated with a good host-cellular

TABLE 1
MALIGNANT MELANOMA

Malignant melanoma	Histological type	Host cellular response	Bloc number	Endothelia cell number	Inclusion number
1. I. Hu	SSM (level 2)	+++	7	850	10
2. C. Uv	SSM (level 2)	+++	4	400	7
3. H. Re	SSM (level 4)	0	3	400	0
4. M. Ma	LMM (level 2)	0	6	700	0
5. S. By	LMM (level 1)	0	2	400	0
6. L. Ca	NM (level 3)	++	6	600	4
7. J. Co	NM (level 5)	0	6	400	0
8. M. Tr	NM (level 5)	0	3	300	0
9. S. Ka	NM (level 5)	0	6	700	0
10. J. He	Rec. Melanoma	0	4	100	0
11. M. Be	Metastasis	0	6	400	0

TABLE 2
PIGMENTED TUMORS: ADDITIONAL STUDIES

Type of lesions	No.	No. of cases positive for inclusion
Lentigo maligna melanoma	2	0
Superficial spreading melanoma	4	4
Nodular melanoma (level 4-5)	3	0
Local recurrence (nodular melanoma)	1	0
Benign nevus	1	0
Halo nevus (preliminary data)	5	0

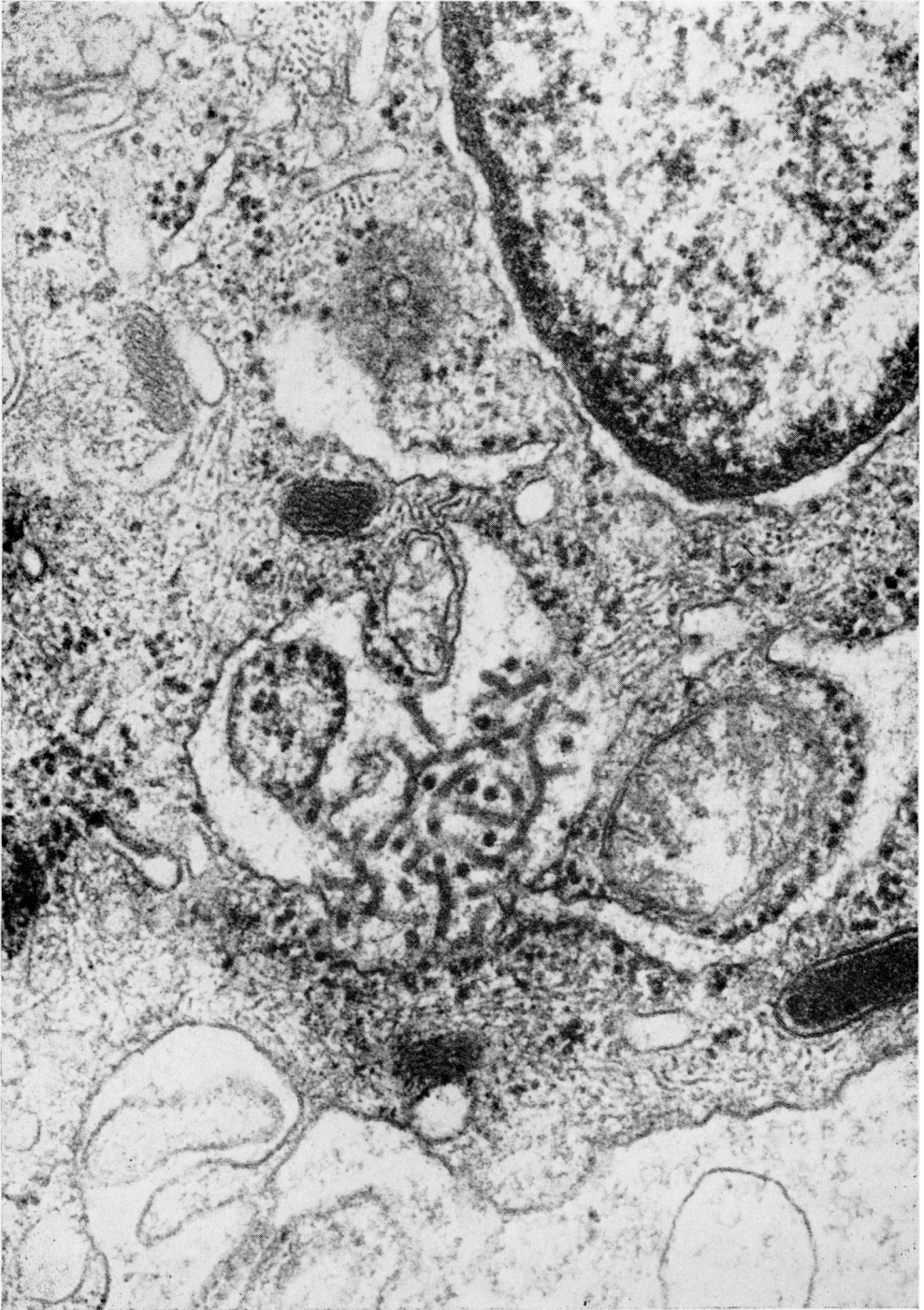


FIG. 1. Intraendothelial branched tubular structure in human malignant melanoma ($\times 68,000$).

response. In these three cases, 21 inclusion-bearing cells were found (out of 1800 endothelial cells examined). Investigations on eight other cases, lentigo maligna melanoma, nodular melanoma, local recurrent and metastasis with no host response, gave negative results, although some 3400 endothelial cells were examined.

Two other cases were found positive for BTS, but are not yet fully documented clinically and microscopically.

The tubules are 22 nm in diameter, sometimes branched. In relation to the membrane of the endoplasmic reticulum, they are mostly located in the rough endoplasmic reticulum, near the nucleus and mitochondria (Fig. 1).

Morphologically, these BTS cannot be recognized as a known viral structure. They are similar, if not identical, to those observed consistently in endothelial cells and lymphocytes in lupus erythematosus and dermatomyositis. They are also suggestive of BTS recently reported in cases of malignancy including various kinds of sarcomas and lymphomas.

The presence of BTS in the lymphovascular bed of early-stage malignant melanomas is opposed to their absence in more invasive stages. In conclusion, BTS are thought to be connected with the nature of host-tumor reactions.