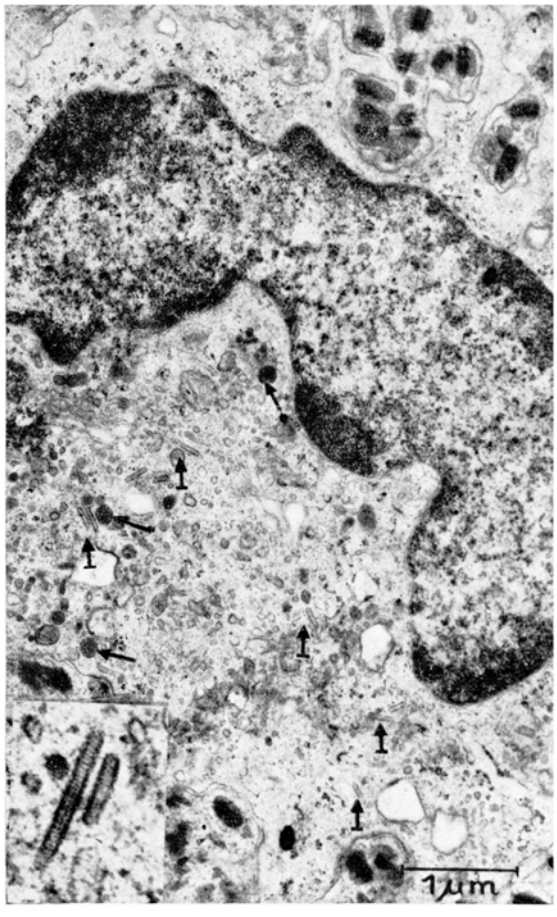

Langerhanssche Zelle. Stäbchenförmige Organellen (↑), Granula mit feinkörniger Innenstruktur (↑). Einsatz: stäbchenförmige Organelle einer anderen Langerhansschen Zelle mit gut erkennbarer Periodik. × 60000.

typische, stäbchenförmige Organellen mit einer Periodik von ~ 90–100 Å (Figur). Die an «Tennisschläger» erinnernden Strukturen[4] sind in unserem Material selten. Ausserdem ist auf die von einer Membran begrenzten Granula mit feinkörniger Innenstruktur hinzuweisen (Figur). Solche Granula dürften ultrastrukturell den Praemelanosomen[10] entsprechen. Golgi-Apparat, Mitochondrien sowie relativ zahlreiche Vesikel und das Fehlen von Tonofilamenten stimmen auch mit den bisherigen Beschreibungen Langerhansscher Zellen ([1,2] u.a.) überein. Über die in der Literatur vermuteten Lysosomen ist eine definitive Aussage ohne entsprechende elektronenmikroskopisch-cytochemische Untersuchung nicht möglich.

Zusammenfassend ist das Vorkommen von Langerhansschen Zellen im menschlichen Vaginalepithel ultrastrukturell als gesichert anzusehen. Interessant sind in diesem Zusammenhang Berichte über den Nachweis von Melanoblasten (dazu HORSTMANN und STEGNER[11]) in der basalen Zone des Vaginalepithels[12].

Summary. Typical Langerhans cells were demonstrated in the normal human vaginal epithel by electron- microscopic means.

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[10] A. S. BREATHNACH und L. M. WYLLIE, J. invest. Derm. *42*, 389 (1964).

[11] E. HORSTMANN und H. E. STEGNER, in *Handbuch der Mikroskopie. Anatomie des Menschen* (Ed. W. VON MÖLLENDORFF und W. BARGMANN; Springer-Verlag, Berlin-Heidelberg-New York 1966), Ergänzung zu Bd. 7/1.

[12] Durchgeführt mit Mitteln der Deutschen Forschungsgemeinschaft.

Degenerative Changes in Dendrites Central to Axonal Transection. Electron Microscopical Observations

In earlier light microscopical studies[1] we have shown that dendrites as well as other parts of a neurone central to an axonal transection can be impregnated with silver according to the method of NAUTA[2]. This was found only in young animals, which was expected since the nerve cells of such animals are more apt to react with disintegration following axonal transection than those of adult animals. A method for 'marking' dendrites which may become of great value for neuroanatomical studies has thus become available. In the NAUTA sections it has not yet been possible, however, to differentiate with certainty between dendrites and axons unless they are seen in continuity with the parent cell or a dendritic ramification is seen. In electron microscopical sections, normal dendrites are easily identified by their contacts with terminal boutons. It would thus be a great advantage if the degenerative changes in dendrites seen in NAUTA sections were such that they could be identified also in electron microscopical sections.

To investigate this matter we have chosen the lateral cervical nucleus (LCN) of the cat as subject. Its structure and connexions are well known to us from light and electron microscopical studies[3,4]. From a series of experiments in kittens in which the axons from the LCN on one side were transected at a mid mesencephalic level, we selected one case for electron microscopical examination. This was a kitten which demonstrated degenerative changes in NAUTA sections within the LCN on the expected side but not on the other one. The degeneration (Figure 1) was found in sections from the second cervical segment. The first cervical segment of the animal was used for an electron microscopical examination of the LCN. The fixation procedure used for this kitten and the others in the series was the same as used previously[4]

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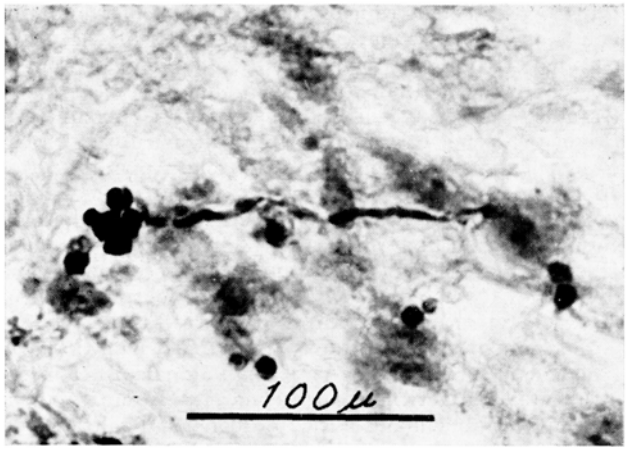

Fig. 1. Silver impregnated remnants of a neurone from the lateral cervical nucleus on the affected side. × 320.

with the exception that the sucrose had been omitted from the formalin solution. The further treatment of the material was the same that has been described elsewhere[4].

On the side, where degenerating fibres had been seen in the NAUTA sections, we found in the electron microscope numerous dendrites of various sizes in a state of degeneration. On the normal side no such structures were seen. The degenerating dendrites (Figure 2) were shrunken and electron dense, like the dense type of degenerating terminal boutons found in various parts of the central nervous system after axonal transection[5]. The mitochondrial profiles recognized within the degenerating dendrites occupied most of their cross sectional area. The dendrites were surrounded by boutons which looked normal. The synaptic contacts between the boutons and the degenerating dendrites were easily recognized.

The results presented here are of great general interest. The degenerative changes of dendrites as viewed in the NAUTA sections can be extended to the ultrastructural level. It will thus be possible to 'mark' selectively in electron micrographs dendrites belonging to a specific group of neurones. This means that it will be possible also to study the terminal boutons contacting dendrites of fully identified neurones. And thereby a new method for mapping in the central nervous system at the ultrastructural level has become available.

[5] J. F. ALKSNE, T.W. BLACKSTAD, F.WALBERG and L. E.WHITE JR., Ergebn. Anat. EntwGesch. *39*, 3 (1965). – H. COLONNIER, J. Anat. *98*, 47 (1964). – F. WALBERG, J. comp. Neurol. *122*, 113 (1964). – F. WALBERG, J. comp. Neurol. *122*, 225 (1964).

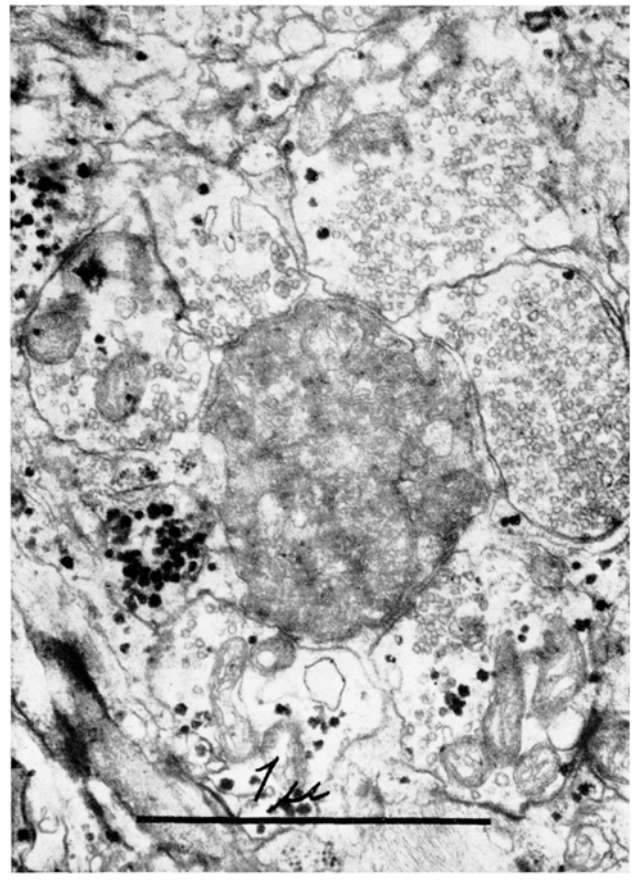

Fig. 2. Degenerating dendrite within the lateral cervical nucleus from the affected side. The dendrite is contacted by 6 terminal boutons, containing synaptic vesicles. Note the increased density of the dendritic profile when compared with the normal boutons surrounding it. × 45,000.

Zusammenfassung. Nervenzellen junger Katzen im Nucleus cervicalis lateralis wurden licht- und elektronenmikroskopisch nach Axon-Durchschneidung untersucht. Lichtmikroskopisch degenerierende Dendriten zeigten in denselben NAUTA-Präparaten auch ultrastrukturell eine Degeneration ähnlich wie bei den früher beschriebenen Endfüsschendegenerationen nach Axon-Durchschneidung. Damit wird eine neue Methode zur Markierung («napping») im Zentralnervensystem eingeführt.

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Lack of Endotoxin Effect on the Microcirculation after Pretreatment with Detoxified Endotoxin (Endotoxoid)

Endotoxin from *Serratia marcescens*, extracted by the BOIVIN method[1], was detoxified with potassium methylate (endotoxoid-2) by NOWOTNY[2]. It could be demonstrated that guinea-pigs survive lethal doses of endotoxin from *E. coli*, *P. vulgaris*, *S. marcescens* and *B. melitensis*, when pretreated with a single injection of this detoxified endotoxin (endotoxoid-2) 24 h before the challenge with the different endotoxins (URBASCHEK and NOWOTNY[3]).

The question now raised is whether endotoxoid-2 is also able to prevent the disturbances on the microcirculation caused by endotoxins.

The effect of endotoxin from *E. coli* on the microcirculation, described elsewhere (URBASCHEK[4]; BRANEMARK and URBASCHEK[5]) was studied on the hamster cheek pouch and the guinea-pig mesenterium. In these experiments it was observed that some min after local