

O16. DISTRIBUTION OF TATTOO PIGMENT TO LYMPH NODES AND THE LIVER: STUDIES IN MICE

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Tattoo pigments deposited in the skin are known to flow with the lymph and become restrained in the regional lymph nodes. It has not been studied if tattoo pigment particles pass to the bloodstream and thus may directly expose distant organs. This study of mice extensively tattooed on the back aimed to assess deposition of tattoo pigments in internal organs

Material and methods: 25 mice were studied, i.e. 10 tattooed black, 10 tattooed red and 5 controls. Mice were sacrificed after one year, and samples taken from the tattooed skin, lymph nodes, liver, kidney and the lungs. Samples were examined for tattoo pigment deposits by light microscopy (LM) and by transmission electron microscopy (TEM).

Results: In both groups of tattooed mice and in total in 19 mice tattoo pigment was observed by TEM in the Kupffer cells of the liver contrasting no observed pigment in other internal organs. LM and TEM showed dense pigment in the skin and in lymph nodes.

Conclusion: Tattoo pigments were found in the liver. This is a new observation. Tattoo pigments, thus, reach the blood stream with potential exposure of multiple organs. The Kupffer cells of the liver are macrophages having a special role in the detoxification of the blood, which may explain why pigments were concentrated in the liver. We cannot estimate if circulating pigments reach the blood directly from the skin or by leakage from the pigment deposition in regional lymph nodes. LM indicates that the amount of circulated pigment is low in comparison with the permanent pigment deposits in tattooed skin and lymph nodes.

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