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Dissemination and accumulation in the whole body of silicone material through gel bleed and rupture of silicone breast implants in a deceased woman investigated by light electron microscopy and energy dispersive x-ray analysis

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We studied a patient (NS), who passed away († 2008) at the age of 56. She had been exposed to gel bleed from her silicone breast implants for 17 years. She was one of the women who developed health complaints while she had these implants. She donated her body, so that her organs and nervous tissue could be obtained for analysis.

Methods: During autopsy, many tissue samples were harvested, frozen and embedded in paraffin and EPON. The paraffin samples were stained with haematoxylin and eosin (HE) as well as with Modified Oil O Red (MORO). Tissues embedded in EPON were sectioned and prepared for light microscopy using toluidine blue staining for electron microscopy and EDX measurement of elemental Si.

Results: Through this work we have found 2 types of silicone material in multiple body and brain samples of this patient. The first is a droplet-like form. EDX measurements demonstrated that the droplets are composed of elemental Si. The second is a plaque-like form. EDX measurement of the EPON embedded samples revealed that these structures are comprised of elemental Si and Ti (Titanium). All the plaque-like structures are morphologically the same and contain small dense particles. Occasionally we found that these plaques are located inside the tissue without a lining and sometimes they were located inside the lumen of blood vessels.

Conclusion: This novel approach, presents a contributing factor for the establishment of silicone bleeding and migration throughout the whole body, which therefore also highlights the phenomenon of epigenetic aging as the likely explanation of the health related concerns of silicone breast implants, rather than autoimmunity.

Biography

Rita Margaret Kappel initiated her work in 1982-1986 as Head of the Department of Anatomy of Univ. of Suriname. In 1996-1998 she worked in Plastic Reconstructive Surgeon Univ. Hospital Groningen later she became Hand of Surgeon Univ. Hosp. During 2000-2005 Rita worked as Plastic Reconstructive surgeon in Private Clinic. Currently she is the Director of Dr. Kappel Institute.

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