

## Silicones

An interesting statement about the silicones, by J. G. Smith, appears in *Arch. Dermat.* [91 (1965) 175], in a discussion that had been omitted from the issue in which the article to which it pertained was published. That article<sup>1</sup> reports three cases in which there were tissue reactions ("sili-conomas") to injected silicone liquids.

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<sup>1</sup>WINER, L. H., STERNBERG, T. H., LEHMAN, R. and ASHLEY, F. L. Tissue reaction to injected silicone liquids. *Arch. Dermat.* 90 (1964) 588-593.

The silicones are long-chained organic polymers of silicon dioxide ( $\text{SiO}_2$ , ordinary white sand), with the structure  $(-\text{R}_2\text{Si-O}-)_n$ , in which R is a monovalent organic radical. In the liquid silicones used for medical purposes (e.g., Dow-Corning Medical Fluid 360) the organic radical is a methyl group, producing dimethyl polysiloxanes.

The silicones differ greatly depending upon the size of  $n$ . If  $n$  is 2, the material looks like water, will evaporate, and is

very irritating to the tissues. If  $n$  is on the order of 1,000, as in Medical Fluid 360, the silicone will not boil or evaporate, has the consistency of honey, and produces little or no tissue irritation. If  $n$  is 10,000, the silicone is essentially solid, and, when mixed with finely divided silica and a peroxide vulcanizing agent, forms the base for medical grade silicone rubber.

There are interesting points in the rest of Smith's contribution, and in those of others. Ervin Epstein, who also had studied

the matter, approved the name "siliconoma" for the lesions produced. He discussed the use of these substances, saying that 10-12 years may be required for them to release enough  $\text{SiO}_2$  to produce true sarcoid-like silicon granulomas. He said also that "It is astounding that plastic surgeons and others should be so stupid as to inject silica into the skin for cosmetic purposes."

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