

Generic buprenorphine injection: the case report highlighting the link between *in vitro* and *in vivo* investigations

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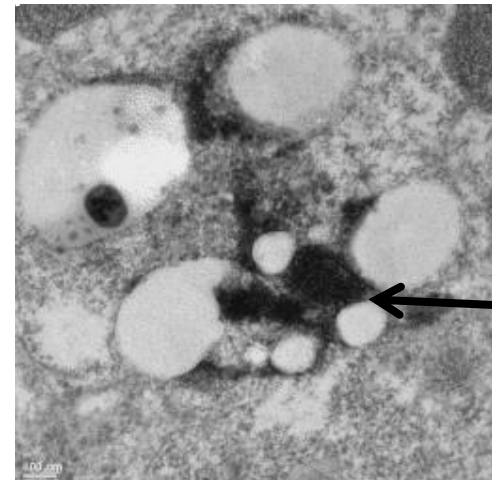
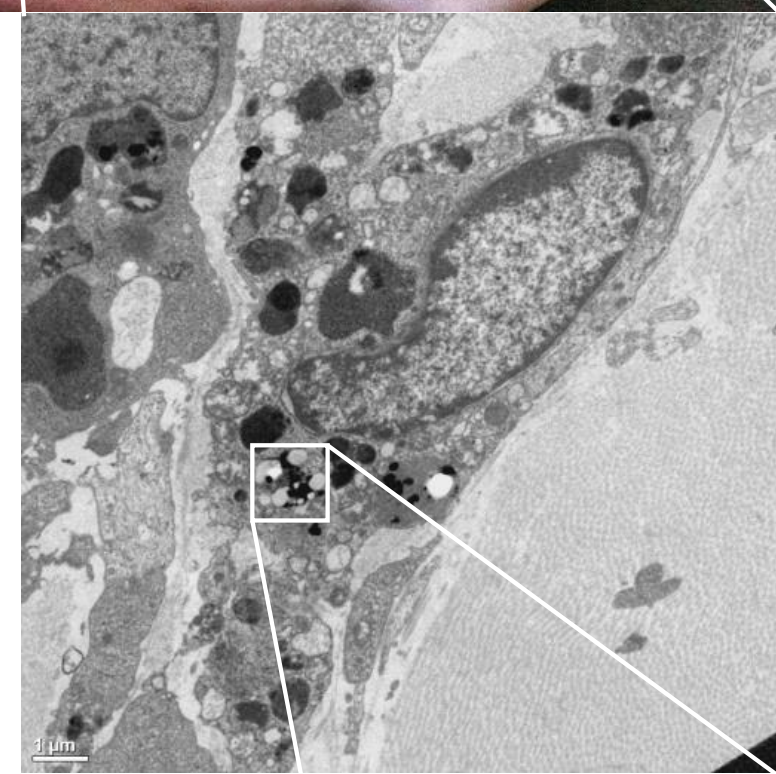
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Background

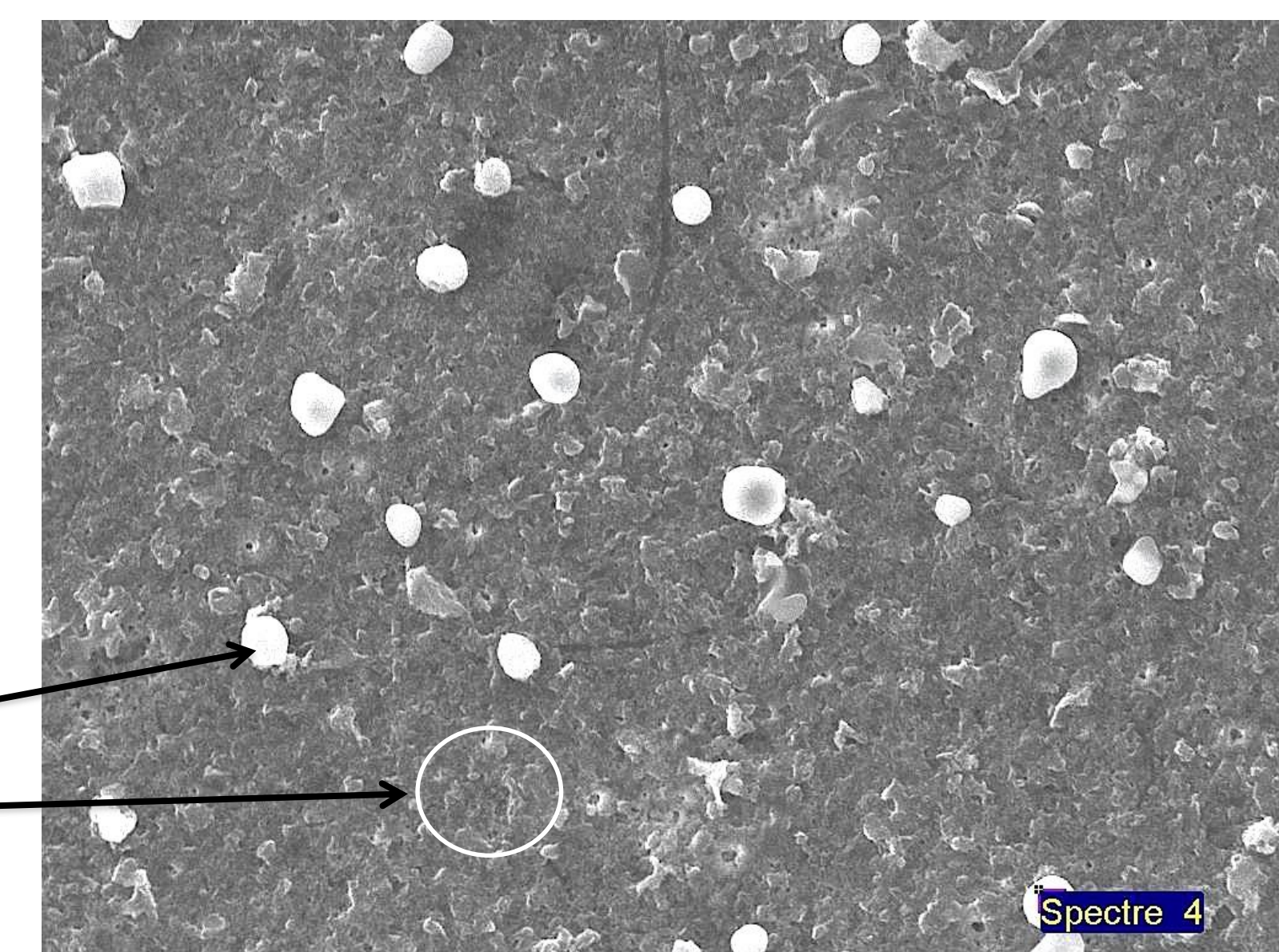
Misuses of buprenorphine concern around 30% of patients treated for drug detoxification in case of opioid abuse. Injecting pills that are not intended for intravenous administration may have harmful consequences particularly because of particles. Over the year 2011, a new type of cutaneous complications linked to buprenorphine self-injection appeared. In 2014, we report a series of 30 cases of serious necrotic cutaneous lesions (1). For 25 of these 30 cases, the generic of buprenorphine was injected. *In vitro* studies showed that the main difference between Subutex® and its generics concerns the quantity and the nature of insoluble particles subsets (2). All of the insoluble particles found in generic solutions contain silica, whereas non-organic element was to be identified in the insoluble particles of Subutex®. Among all 30 cases described, only one skin biopsy was obtained for a patient.

Case report

We describe, here, the case of a 33 years old man, who had a long history of self-injection of buprenorphine (Subutex® and its generic) and who took all precautions, as antisepsis and solution filtration before injection. A few days after the injection of generics of buprenorphine, he developed a livedo-like dermatitis with necrotic lesion. Various cares and medical examinations were provided. The biopsy of this lesion showed refringent material within phagocytic cells of the perivascular inflammatory infiltrate compatible with non-organic particles. Transmission electronic microscopy showed very dense particles compatible with inorganic insoluble particles. Spectral analyses of these particles by energy-dispersive x-ray spectroscopy showed the presence of silica. Silica has been observed, in most of the particles suspected.



Cotton-Filtered Generic



SILICEA

Conclusion: We describe here, the story of the missing link between our *in vitro* studies (2) and *in vivo* investigation (1) of one patient among the 25 cases of serious cutaneous lesions following generic of buprenorphine injection.

(1) Livedo-like dermatitis and necrotic lesions after high-dose buprenorphine injections: a national French survey. Wainstein L, Bernier C, Gérardin M, Bouquié R, Espitia O, Mussini JM, Jolliet P, Victorri-Vigneau C. Br J Dermatol. 2014 Oct 29. doi: 10.1111/bjd.13503. [Epub ahead of print]

(2) Crushed and injected buprenorphine tablets : characteristics of princeps and generic solutions . Bouquié R, Wainstein L, Pilet P, Mussini JM, Deslandes G, Clouet J, Dailly E, Jolliet P, Victorri-Vigneau C. Plos One