

[PICTURES IN CLINICAL MEDICINE]

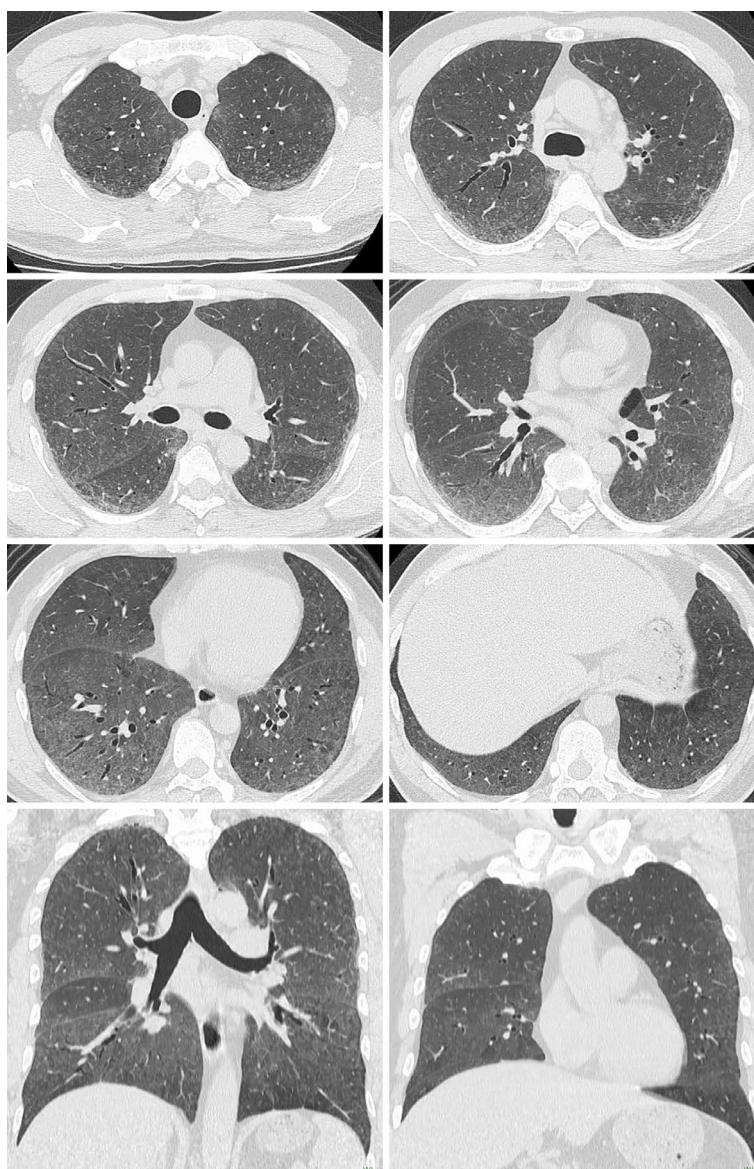
Respiratory Failure after the Use of a New Hair Spray

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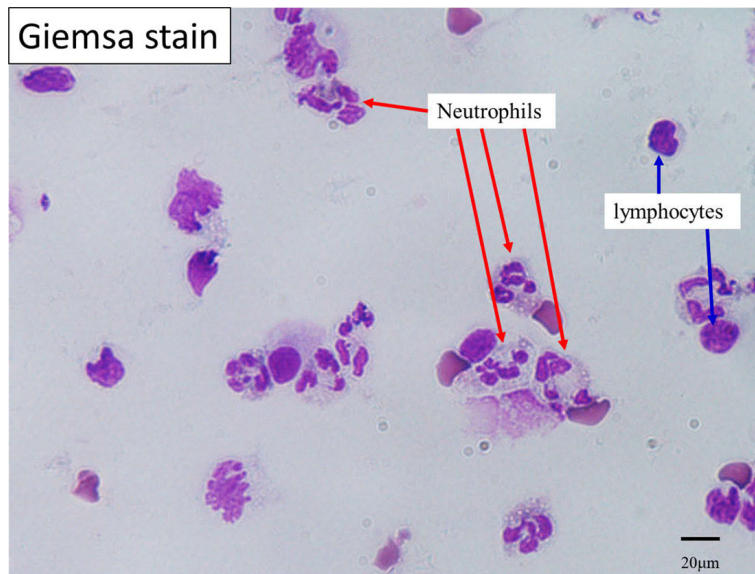
Key words: hair spray, acute respiratory failure, parabens

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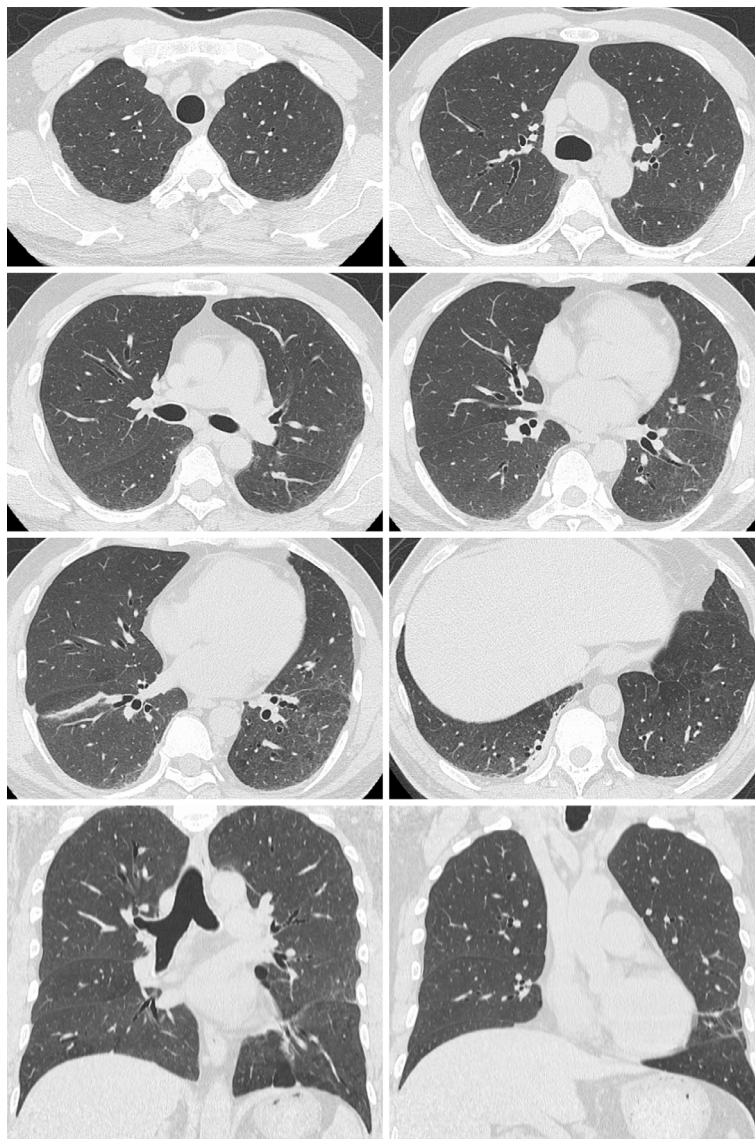
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Picture 1.



Picture 2.



Picture 3.

A 55-year-old barber gradually developed dyspnea, non-productive cough, and fever after using a new hair spray (changed a month previously). He worked 6 days a week as a hairdresser and used the paraben-containing hair spray 3 times a day. In addition, his symptoms of dyspnea temporarily improved on his days off work. He did not take any medications or supplements and lived in a 10-year-old house. Bilateral chest fine crackles were audible, and his serum levels of Krebs von den Lungen-6 and surfactant protein-D were 2,086 U/mL and 175 mg/mL, respectively. His oxygen saturation was 93% (7 L/min) and chest computed tomography (CT) revealed bilateral diffuse ground-glass attenuation (Picture 1). Bronchoalveolar lavage fluid showed an increased total cell count (8.63×10^5 /mL) with neutrophil (42%) and lymphocyte (27%, CD4/CD8 ratio of 5.2) predominance (Picture 2); no bacteria were cultured. His clinical condition and CT findings improved after the administration of methylprednisolone (60 mg/day for 7 days) (Picture 3).

The newly changed hair spray included parabens, but the other ingredients were the same as in the previously used the same brand hair spray. Parabens, which are often used as

preservatives, are generally considered little harm to human (1). The urinary concentration of parabens is reportedly associated with emergency department visits for asthma (2). Hence, the inhalation of large doses of parabens (due to daily professional use) might be pathogenic. There have been no reports on the chest CT findings of cases of hair spray-induced respiratory failure; this is the first report to present such CT findings.

The authors state that they have no Conflict of Interest (COI).

References

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2. Quirós-Alcalá L, Hansel NN, McCormack MC, et al. Paraben exposures and asthma-related outcomes among children from the US general population. *J Allergy Clin Immunol* **143**: 948-956, 2019.

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