



# Shaking and tremors in thyroid storm

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## Shaking and tremors in thyroid storm

A 43-year-old woman presented with shaking and tremors precipitated by a flu-like event. The patient was treated previously for her Graves' disease followed by a euthyroid phase. Physical examination showed a nervous woman with profound shaking and dramatic tremors of both hands and feet as a first symptom of her thyroid storm (video 1).

Laboratory analysis confirmed our diagnosis showing levels of thyroid-stimulating hormone  $\leq 0.008$  mU/L (reference 0.55–4.8 mU/L), fT<sub>4</sub> of 150 pmol/L (reference 12–23 pmol/L) and fT<sub>3</sub>  $\geq 30.80$  pmol/L (reference 3.5–6.5 pmol/L). Immediate treatment was started with propylthiouracil, propranolol, potassium iodide and hydrocortisone.

The shaking and tremors abated within 30 min (video 2) in direct response to the treatment with propranolol, whereas they reappeared before the next administration.

Thyroid storm is associated with enhanced sensitivity of adrenergic receptors to endogenous catecholamines. Shaking and tremors, together with tachycardia and anxiety, are manifestations of this adrenergic stimulation. Non-selective  $\beta$ -adrenergic antagonists, such as propranolol, show an impressive dampening of symptoms (demonstrated in video 2).

In conclusion, the dramatic tremors were a first symptom of a thyroid storm due to a flare of Graves' disease. Early recognition of this symptom may be of particular importance to identify this rare but potentially life-threatening endocrine emergency.

## Electronic supplementary material

The online version of this article (<https://doi.org/10.1007/s00134-018-5410-7>) contains supplementary material, which is available to authorized users.

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## Compliance with ethical standards

## Conflicts of interest

The authors declare that they have no competing interests.

## Ethical approval

This article does not contain any studies with human participants or animals performed by any of the authors.

## Informed consent

The patient gave written informed consent for the publication of the videos relating to her disease. Note that the patient is unrecognizable in the video since only the extremities are visible.

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