

## Case report: Sexual intercourse as potential treatment for intractable hiccups

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**H**iccup is a pathologic respiratory reflex characterized by a spasm of one or both sides of the diaphragm, causing sudden inspiration and associated closure of the vocal cords. Accessory muscles of respiration are occasionally involved.<sup>1</sup>

Hiccups are usually harmless and self-limiting. Cases have been reported, however, in which hiccups became intractable (singultus) causing insomnia, wasting, exhaustion, and even death. These consequences have prompted scientific scrutiny of an otherwise harmless curiosity.<sup>2</sup> We report a case of intractable hiccups that began following treatment with corticosteroids and lasted for 3 days. The hiccups ended immediately and completely following sexual intercourse.

### Case report

A healthy 40-year-old man suffered from low back pain. Drug therapy, including several nonsteroidal anti-inflammatory drugs (NSAIDs), did not alleviate the pain.

After a few weeks of suffering, the patient was treated by an alternative medicine practitioner, but to no avail. Four weeks after the pain began, the patient was treated by a neurologist who gave him an injection of a 5-mL mixture of 1% lidocaine, betamethasone sodium phosphate, and betamethasone acetate (6 mg/mL) to the most painful and tender area. The patient felt immediate relief from the back pain, but 6 hours later he developed intractable hiccups. He became very anxious and was unable to work or sleep. He tried to treat himself with metoclopramide and chlorpromazine as well as several folk remedies, but the hiccups continued.

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He made several attempts at massaging his anterior soft palate with a cotton wool bud for 1 minute<sup>3</sup> without success. On the fourth day of continuous hiccuping, the patient had sexual intercourse with his wife. The hiccups continued throughout the sexual interlude up until the moment of ejaculation when they suddenly and completely ceased and did not recur over a follow-up period of 12 months.

### Discussion

Hiccups are associated with eating. It has been suggested that the physiologic function of hiccuping is to transfer food through the esophagus. The hiccup reflex is complex<sup>4</sup> and is composed of the afferent limb: phrenic nerve, vagus nerve, or thoracic sympathetic fibres; the central connection: not a specific centre, but rather an interaction among the brainstem, the respiratory system, phrenic nerve nuclei, the reticular formation, and the hypothalamus; and the efferent limb: primarily the phrenic nerve.

In one study conducted at the Mayo clinic,<sup>5</sup> 220 patients reported hiccups lasting for more than 2 days; 82% of the patients were men. A diagnosis of psychogenic hiccups was reached in 36 of 39 women compared with 12 of the 181 men.

Commonly reported causes of hiccups are trauma (skull fracture, closed head trauma, surgery), mass lesions (aneurysms, tumours, goitre, diverticuli), infections (subdiaphragmatic abscess, cholecystitis, pleurisy, meningitis, encephalitis), irritating stimuli (heartburn, spicy food, gastritis, peptic ulcer, pancreatitis), luminal distension (achalasia, gastric distension, esophageal rings and strictures), central nervous system disease (multiple sclerosis, cerebrovascular accident, psychogenic conditions), and metabolic aberrations (uremia, alcohol).<sup>1,4-7</sup> Corticosteroids, by local or intravenous injection, have been implicated in causing hiccups.<sup>8-12</sup>

A variety of medications and dietary trials have been suggested for hiccups, including defoaming antilatulents, metoclopramide, peppermint water, chlorpromazine, baclofen, nifedipine, anticonvulsants, and glucagon.<sup>4,5,7,13,14</sup> Most folk remedies for hiccups involve some form of pharyngeal stimulation,<sup>15</sup> such

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as rapidly ingesting two teaspoons of sugar, rapidly ingesting two glasses of liquor, swallowing dry bread, swallowing crushed ice, forceful tongue retraction sufficient to induce a gag reflex, and having someone yell "boo" loudly and surprisingly enough to produce a startle, apparently by sympathetic stimulation. Recently, smoking marijuana has been reported to terminate obstinate, intractable hiccups.<sup>12</sup>

Successful attempts to treat hiccups by stimulating the pharynx with a catheter<sup>16</sup> and by anterior soft palate massage with a cotton wool bud for 1 minute have been reported.<sup>3,17</sup> In this case, the hiccups started a few hours after the patient received an injection of corticosteroids. The mechanism of corticosteroid-induced hiccups is unknown.<sup>18</sup> The intractable hiccups ceased immediately following ejaculation, possibly as a result of the sympathetic stimulus stemming from ejaculation, which might have terminated the reflex arc that caused the hiccups. A mechanism similar to this occurs when someone is startled, resulting theoretically in sympathetic stimulation that might lead to a cessation of hiccups, as mentioned above. However, this mechanism of action has not been proved. It is also possible that the association between the ejaculation and the termination of the hiccups is coincidental.

A medical search using MeSH headings "hiccups," "hiccoughs," together with "sexual intercourse," "ejaculation," "orgasm," or "sympathetic stimulation" was conducted. All references listed in articles on hiccups were also checked. No reports in the medical literature over the past 23 years show that sexual intercourse or ejaculation can terminate intractable hiccups.

Based on the experience reported in this case, ejaculation might lead to cessation of intractable hiccups. It is unclear whether orgasm in women leads to a similar resolution, an issue that could be investigated further. Under circumstances in which sexual intercourse with a partner is not possible, masturbation might be tried as a means of stopping intractable hiccups. ♦

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## Key points

- A 40-year-old man's 4 days of continuous hiccuping ceased immediately following sexual intercourse.
- The mechanism of sympathetic stimulation similar to being startled has been proposed as an explanation.
- Nothing in the literature corroborates our finding.

## Points de repère

- Le hoquet continu pendant quatre jours d'un homme de 40 ans a cessé immédiatement après qu'il a eu une relation sexuelle.
- Le mécanisme de la stimulation sympathique, semblable à celui provoqué par la surprise, a été proposé comme explication.
- Rien dans les ouvrages scientifiques ne vient corroborer notre conclusion.

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