

Severe Hypothermia Due to Anorexia Nervosa

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1. Abstract

Anorexia nervosa is a mental disorder that approximately affect 0.5% to 1% of college-aged women, and the prevalence of this disorder is increasing.

Acute hypothermia is a dramatic event that occasionally occur after prolonged cold exposure, generally after motor vehicle accidents, or after prolonged cold water immersion, or after prolonged exposure to cold weather.

We report the case of a young tourist, suffering of anorexia nervosa, came to Venice with her friends, for Carnival Celebrations, that was found on severe hypothermia in Venice, nearby piazza San Marco. We rewarmed her with cardiopulmonary bypass without complications.

2. Background

Anorexia nervosa is a mental disorder that approximately affect 0.5% to 1% of college-aged women, and the prevalence of this disorder is increasing [1, 2].

Acute hypothermia is a dramatic event that occasionally occur after prolonged cold exposure, generally after motor vehicle accidents, or after prolonged cold water immersion, or after prolonged exposure to cold weather.

We report the case of a young tourist, suffering of anorexia nervosa, came to Venice with her friends, for Carnival Celebrations, that was found on severe hypothermia in Venice, nearby piazza San Marco. We rewarmed her with cardiopulmonary bypass without complications.

3. Clinical Case

K.N., a 26 years old Japanese tourist, came to Venice on February for Carnival Celebrations, with a large group of friends. She suffered of anorexia, but friends reported that they didn't know anything about her food-related problems. She was about 160 cm high, a less than 35 Kilograms weight (1,25 m² of body surface, 13,67 of Body Mass Index). On February the 18th, after dinner, she passed the evening with a group of friends talking on a seat in piazza San Marco, as usually tourists do. Friends reported that she looked to sleep so they didn't notice that she was becoming colder. Around midnight, after three hours, friends tried to awake her but they couldn't, heart beat was present even if it was low, she was breathing, but they noticed she was very cold, with blue lips, so they called the nearest emergency ward.

About one hour later at the Emergency Department of our Hospital, a body core temperature of 26°C was registered, so colleagues tried many methods to warm her, some non-invasive ones, as warming covers, and other methods more invasive, as bladder and gastric infusion of warm water. Thus, those methods didn't produce changes in temperature, and even more there was the risk of cardiac ventricular arrhythmias, so she was transferred to the Cardiac Surgery.

We found the patient in moderate hypothermia (28°C of esophageal temperature). We assessed a cardiopulmonary by-pass via femoral artery and femoral vein. We warmed slowly the patient, bringing her to a normal temperature, avoiding ventricular fibrillation. After 85 minutes, at 37°C we interrupted warming, and transferred her to the intensive care unit. We noticed, during her hospital stay, that she had

hypokalemia, resistant to treatment, and bradycardia, as many authors reports in patients affected by anorexia [3].

She was afraid about the accident, but she wouldn't admit her psychological problem. We provided a psychological support, and then she was suggested to face her food-related problems once at home. The patient was discharged on fifth post-operative day, without any neurological or other complications.

At a six months control she resulted to have a quality of life similar to the one she had before the accidental hypothermia.

4. Discussion

Anorexia nervosa is a mental disorder that approximately affect 0.5% to 1% of college-aged women, and the prevalence of this disorder is increasing [1, 2].

Anorexia nervosa is a serious psychiatric disease with severe medical complications, including a mortality rate of 5.6% per decade of illness, 12 times that expected for age and sex [4].

Serious medical complications have been reported, including electrolyte disorders, severe bone loss, hematologic disorders [5], (anemia 39%, thrombocytopenia 5% and leukocytopenia in 34%) [3], and cardiac dysfunction [6].

Prolonged malnutrition produces many changes in regional fat distribution in adolescents with anorexia nervosa. Fat has an important role in organs protection from cold exposure and in body temperature regulation [7]. In patients suffering of anorexia nervosa endocrine changes and fat loss can bring to an alteration of thermo-regulation process, and hypothermia was found in 22,4% of women affected by anorexia nervosa in a recent report by Miller et al [3].

Acute hypothermia is a dramatic event that occasionally occur after prolonged cold exposure, generally after motor vehicle accidents [8], or after prolonged cold water immersion⁹, or after prolonged exposure to cold weather, often it happens to homeless people.

Methods of rewarming patients with severe accidental hypothermia remain controversial. Many victims have been successfully resuscitated with cardiopulmonary bypass, but questions remain regarding treatment indications and efficacy.

Cardiopulmonary bypass has several advantages over other warming methods, especially for profoundly hypothermic patients. Tissue perfusion and oxygenation are maintained, cardiac arrhythmias are under control, while rapid warming occurs. Many authors report that patients in stable conditions with temperatures between 25°C and 28°C can be treated with cardiopulmonary bypass or conventional warming methods. Some authors report an experience of forced air rewarming to an acceptable body core temperature¹⁰, but this could be judge a slow method (mean rewarming rate of 1,7 degrees per hour), maybe useful if a cardiac surgery unit is not available in a reasonable time.

Almost the totality of the authors, using different methods, affirms that neurological sequels are few or completely absent.

Our patient, at a six months' control, resulted to have a quality of life similar to the one she had before the accidental hypothermia. She strongly denied her mental disorder, and we think she wouldn't face the problem in the future even she experienced a life-compromising complication of anorexia nervosa.

Anorexia nervosa is often an unknown problem, afflicting “common” young women. A woman affected by anorexia nervosa has a mental disorder, associated to a high prevalence of medical findings that could expose her to severe medical complications, even severe acute hypothermia.

References

1. American Psychiatric Association. Diagnostic and Statistical Manual of Mental Disorders, Revised Fourth Edition. Washington, DC: American Psychiatric Association; 2000.
2. Wakeling A. Epidemiology of anorexia nervosa. *Psychiatry Res.* 1996; 62: 3-9.
3. Miller KK, Grinspoon SK, Ciampa J, Hier J, Herzog D, Klibanski A. Medical findings in outpatients with anorexia nervosa. *Arch Intern Med.* 2005; 165(5): 561-6
4. Sullivan P. Mortality in anorexia nervosa. *Am J Psychiatry.* 1995; 152: 1073-4.
5. Silverman J. Anorexia nervosa: clinical and metabolic observations. *Int J Eat Disord.* 1983; 2: 159-66.
6. Cooke R, Chambers J. Anorexia nervosa and the heart. *Br J Hosp Med.* 1995; 54: 313-7.
7. De Alvaro MT, Munoz-Calvo MT, Barrios V, Martinez G, Martos-Moreno GA, Hawkins F, Argente J. Regional fat distribution in adolescents with anorexia nervosa: effect of duration of malnutrition and weight recovery. *Eur J Endocrinol.* 2007; 157(4): 473-9.
8. Huges A, Riou P, Day C. Full neurological recovery from profound acute accidental hypothermia: successful resuscitation using active re-warming techniques. *Emerg Med J.* 2007; 24(7): 511-2.
9. Wollenek G, Honarwar N, Golej, Marx M. Cold water submersion and cardiac arrest in treatment of severe hypothermia with cardiopulmonary bypass. *Resuscitation.* 2002; 52(3): 255-63.
10. Kornberger E, Schwarz B, Linder Kh, Mair P. Forced air surface re-warming in patients with severe accidental hypothermia. *Resuscitation.* 1999; 41(2): 105-11.