

# EM CASE OF THE WEEK.

BROWARD HEALTH MEDICAL CENTER  
DEPARTMENT OF EMERGENCY MEDICINE



Care Warriors

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## Acute Dystonic Reaction

A 39-year-old male with a past medical history of paranoid schizophrenia and seizures presents to the Emergency Department for evaluation of facial spasms, lip swelling, and drooling that began approximately 3 hours prior. Patient was admitted for seizures 3 days ago and prior discharge today was given risperidone instead of his usual antipsychotic olanzapine. He reports a similar reaction happened once in the past after receiving risperidone. Denies swelling of tongue, shortness of breath, wheezing, itchy throat, hives, diaphoresis, chest pain, weakness of arms or legs, confusion, headache, or any other symptom at this time. He admits to extensive smoking history, alcohol use, and polysubstance abuse including cocaine and marijuana. He has no reported allergies. On physical exam, vital signs are stable, patient is AAOx3, appears uncomfortable, anxious, is having difficulty speaking, and is drooling. Patient with visible trismus and only able to minimally open his jaw and mouth. No swelling of the lip, tongue, or pharynx noted. Lungs are clear to auscultation bilaterally without wheezing. S1 and S2 heart sounds heard with regular rate and rhythm. Which of the following is the most appropriate treatment?

- A. 0.02mg/kg of Benztropine IV rapid injection
- B. 1-2mg Benztropine slow IV injection
- C. IM epinephrine injection
- D. Admission and monitoring



<https://www.youtube.com/watch?v=2krwEbm5hBo>

### Man with Acute Dystonic Reaction

This image is from a youtube video showing an example of a patient who developed acute dystonic reaction after taking Risperidone. The patient presented with jaw contraction and was unable to speak. After receiving Benadryl 50mg IV, the patient improved within 5 minutes.

*EM Case of the Week is a weekly "pop quiz" for ED staff.*

The goal is to educate all ED personnel by sharing common pearls and pitfalls involving the care of ED patients. We intend on providing better patient care through better education for our nurses and staff.

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The correct answer is **B. 1-2mg Benztropine slow IV injection**

Acute dystonia is a reaction that can occur after administration of antipsychotic medications. It is usually characterized by involuntary muscle contractions and spasms of face, neck, trunk, or extremities.

### Discussion

Acute dystonic reaction is a term used to describe reversible extrapyramidal side effects that can occur after administration of certain medications. It most commonly occurs after administration of antipsychotics, especially typical antipsychotics. However, a wide variety of other medications can also cause the reaction (i.e. antiemetics, antidepressants, antibiotics, antimalarials, H2 receptor antagonists, recreational drugs). As many as 1 in 3 patients experience at least mild dystonic reaction after starting antipsychotics.

Risk factors for dystonia include young age, male gender, use of cocaine, higher potency D2 receptor antagonist used in high doses, family history of dystonia, and a history of prior acute dystonic reaction.

Acute dystonia can present as torticollis, retrocollis, oculogyric crisis, opisthotonos, belfarospasm, facial spasm, buccolingual crisis, torticopelvic spasm, or scoliosis. These symptoms are usually rapid in onset within a few hours to few days of administration of the antipsychotic and they are highly uncomfortable for the patient but resolve quickly with treatment. Acute dystonia is rarely life threatening. However, laryngospasm, a very rare reaction, can be life threatening and is characterized by throat pain, dyspnea, and stridor.

Acute dystonia is thought to be caused by dopaminergic blockade leading to excess cholinergic output. High potency D2 receptor antagonists, such as typical antipsychotic haloperidol, are most likely to produce a dystonic reaction.



<https://lifeinthefastlane.com/toxicology-conundrum-030/>

### Differential Diagnosis

The differential diagnosis includes a wide range of conditions that may resemble acute dystonia such as: status epilepticus, stroke, anticholinergic symptom, infections, hypocalcemia, or psychiatric conditions.

### Treatment

The first approach to acute dystonic reaction is assessing the ABCs. In a rare but life threatening case of laryngospasm, stabilize the airway, administer oxygen, and obtain IV access.

In most cases, acute dystonia is not life threatening and quickly responds to 1-2mg slow IV injection of benztropine, an anticholinergic. Most patients are symptom free with 5-15 minutes. A second dose can be tried again after 10 minutes if the initial failed to work. Alternatives include antihistamines such as diphenhydramine 1-2mg/kg (up to 100mg) slow IV injection. Procyclidine, promethazine, and diazepam are other alternatives that can also be used.

After treatment in the ER, patients should be sent home with oral benztropine 1-2mg BID for 2-3 days. If a patient develops a dystonic reaction, they should avoid the precipitation drug in the future. Reevaluation of antipsychotic regimen should be considered and prophylactic treatment with benztropine or diphenhydramine is recommended.

For a list of educational lectures, grand rounds, workshops, and didactics please visit [BrowardER.com](http://BrowardER.com) and **click** on the **"Conference"** link.

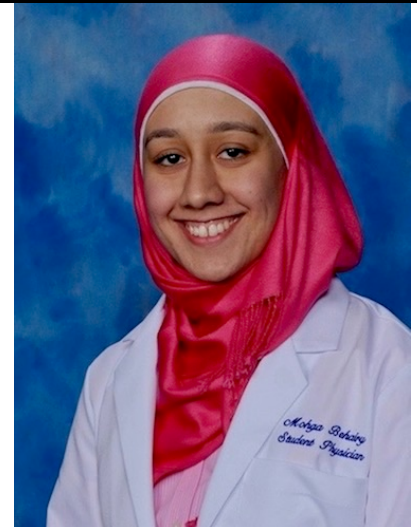
*All are welcome to attend!*

## Manifestations of Acute Dystonia

<b>Oculogyric crisis</b>	Spasms of extraorbital muscles, causing upwards and outwards deviation of eyes Blepharospasm (eyelid spasm)
<b>Torticollis</b>	Head held turned to one side
<b>Opisthotonus</b>	Painful forced extension of the neck. When severe the back is involved and the patient arches off bed.
<b>Macroglossia</b>	Tongue does not swell but it protrudes and feels swollen.
<b>Buccolingual crisis</b>	May be accompanied by trismus, risus sardonicus, dysarthria, and grimacing
<b>Laryngospasm</b>	Uncommon but life threatening
<b>Spasticity</b>	Trunk and limb muscles

## Take Home Points

- Acute dystonic reaction is a reversible extrapyramidal reaction to various medications, commonly antipsychotics.
- It is characterized by uncomfortable spasms and involuntary muscle contractions.
- It is rarely life threatening and usually the patient quickly responds to benztropine treatment.
- Caution should be taken in future antipsychotic use of a patient with history of acute dystonic reaction.



## ABOUT THE AUTHOR

This month's case was written by Mohga Behairy. Mohga is a 4<sup>th</sup> year medical student from NSU-COM. She did her emergency medicine rotation at BHMC in February 2018. Mohga plans on pursuing a career in Pediatrics then specializing in Pediatric Rheumatology.

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