DYSTONIC REACTION

A dystonic reaction is also known as an extrapyramidal response, where continuous involuntary muscular contractions occur. This is a non-life threatening condition, but causes distress for patients and people that are with them.

This condition most commonly occurs after administration of a neuroleptic drug. Symptoms may begin immediately or can be delayed hours to days. Although a wide variety of medications can elicit symptoms, the typical antipsychotics are most often responsible. Dystonic reactions (ie, dyskinesias) are characterized by intermittent spasmodic or sustained involuntary contractions of muscles in the face, neck, trunk, pelvis, extremities, and even the larynx. Medical treatment is usually effective to abate acute symptoms. With treatment, motor disturbances resolve within minutes, but they can reoccur over subsequent days.

- Dystonia = impairment of muscular tonus
- Tonus = tone; slight, continuous contraction of a muscle

HISTORY

Dystonic reactions most often occur shortly after initiation of drug treatment; 50% occur within 48 hours and 90% occur within 5 days of initiation of treatment. Risk factors include family history of dystonia, recent history of cocaine or alcohol use, or treatment with a potent dopamine D2 receptor antagonist (antipsychotic drugs like, fluphenazine for schizophrenia, and haloperidol (Haldol)).

Onset of symptoms is early, occurring within minutes to days of initiating a causative agent or increasing the dose of a causative agent.

Obtain history from others if patient is not able to speak.

Obtain medication history, including new medications and/or dosage increase.
Physical examination findings may include any of the following:

- Involuntary muscle contractions of
  - Face / jaw
    - Trismus
    - Forced jaw opening
    - Difficulty in speaking
    - Facial grimacing
  - Neck
    - Laryngeal dystonia: This is a very rare type. It is a life-threatening condition where the patient suffers from throat pain, stridor, dyspnea, dysphonia.
  - Trunk
    - Torticollis, Antecollis or Retrocollis: The patient suffers from neck twisting, head forced backwards or forward.
    - Tortipelvic crisis - abnormal rigidity of the body along with pain; typically involves hip, pelvis, and abdominal wall muscles, causes difficulty with ambulation
    - Lordosis or scoliosis: lateral flexion or extension of the spine.
    - Opisthotonic Crisis: The body of the patient undergoes a spasm and characterized by arching back, upper limb flexion and lower limb extension.
  - Tongue
    - Buccolingual crisis: protruding or pulling sensation of the tongue
  - Around eye
    - Oculogyric crisis: deviation of eyes in all directions, rotatory eye movements or has a deviated gaze.
    - Blepharospasm: This is spasm of the eyelid, where the patient is unable to open his or her eyes. The patient may also suffer from spasm of other facial muscles.
- May involve isolated muscle group. More frequently combination of them
- Also present with s/s of adrenergic hyperactivity
  - Sweating
  - Tachycardia (due to distress, discomfort, pain)
  - Tachypnea
  - HTN (due to anxiety from the condition)
- Often obvious pain & quite anxious
- Mental status is unaffected
CAUSES

Neuroleptics (antipsychotics), antiemetics, and antidepressants are the most common causes of drug-induced dystonic reactions.

- Hx of therapeutic and/or illicit drug use is a key factor
- Commonly caused by
  - Antipsychotic drugs -- Acute dystonic reactions have been described with every antipsychotic.
  - Antiemetic drugs w/ similar chemical structure
    - Compazine (prochlorperazine)
    - Phenergan (promethazine)
    - Inapsine (droperidol)

RISK FACTORS

There are a few dispositions that make a person vulnerable to dystonia drug reaction. These risk factors include:

- Young age
- Males are more prone than females
- Family history
- Recent use of cocaine or alcohol
- Previous occurrence
- Viral infection

TREATMENT

Benadryl is the common treatment used in EMS. Unfortunately, not in Oregon EMT or AEMT scope.

- Benadryl (diphenhydramine) 25-50 mg IM or IV. This drug has anticholinergic properties which is why it can be used for dystonic reactions.

Due to prolonged effects of dystonia-inducing agents, oral Benadryl should be continued 2-5 days.

CASE EXAMPLE #1

View this emergency room case on YouTube at [http://youtu.be/2krwEbm5hBo](http://youtu.be/2krwEbm5hBo). It shows a man with a dystonic reaction effecting his face, mouth & neck. He is treated with Benadryl and you can see the positive result.
CASE EXAMPLE #2

A 21-year-old male with a history of schizophrenia and obsessive compulsive disorder has presented to the emergency department complaining of a stiff neck. He states that his neck is locked to the left and that he hasn't been able to move it for the past hour.

His usual medications are citalopram 20mg and haloperidol 1mg BD.

On examination you note that he is alert and orientated, appears anxious and diaphoretic, and is tachycardic (115/min). His patient’s upper body and neck are rigid, with his neck locked in flexion and rotated to the left. His voice is normal and there is no airway compromise.

On further questioning, the patient reports that 3 hours previously he took an additional 2mg of haloperidol orally to try to control the derogatory auditory hallucinations he was experiencing.


Photo Permissions:

<table>
<thead>
<tr>
<th>Description</th>
<th>English: A person with medication induced dystonia.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date</td>
<td></td>
</tr>
<tr>
<td>Source</td>
<td>Own work</td>
</tr>
<tr>
<td>Author</td>
<td>James Heilman, MD</td>
</tr>
<tr>
<td>Permission (Reusing this file)</td>
<td>This person has given the picture taken both verbal and written consent for it use on Wikipedia and release into the CC.</td>
</tr>
</tbody>
</table>