

# Case Report: Anisocoria (Unilateral Acute Mydriasis) After Travel on a Cruise Ship

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## Abstract

A 32-year-old female presented to the Emergency Department (ED) with a complaint of blurred vision of a three hour duration. Her husband noted that her right pupil appeared to be dilated.

However, on repeat questioning, the patient offered that she had just returned from an Caribbean cruise. She was asked about the use of a scopolamine patch. At that point, she recalled that she had removed a scopolamine patch from behind her right ear and had removed her contact lenses just prior to the onset of symptoms. She noted that she had experienced some difficulty removing the contact lenses of her right eye. She had removed the contact lens and the scopolamine patch with the right hand. The blurry vision began minutes later. The patient was offered confirmatory testing with pilocarpine drops, but she declined, as she felt very confident in the association of the association of the scopolamine patch with the onset of symptoms. She was discharged with follow up with ophthalmology. Her symptoms resolved fully within 24 hours of ED discharge. This case highlights the importance of recursive history taking in the event of an usual presentation.

**Key words:** anisocoria; anisocoria in emergency medicine; anisocoria from scopolamine patch

## Introduction

Anisocoria is derived from Greek and means unequal pupils. The differential diagnosis includes trauma, eye surgery or inflammatory conditions. The patient had no history of trauma or surgery. She had no history of congenital anisocoria. Anisocoria can be caused by such serious diseases as an intracranial aneurysm, brain tumors or ischemia. However, there are pharmacological causes as well.

### The Case:

A 32-year-old female presented to the Emergency Department (ED) with a complaint of blurred vision of a 3 hour duration. Her husband noted that her right pupil appeared to be dilated. The patient denied trauma. The patient denied any focal motor or sensory abnormalities. She had been in her usual state of health and denied any medication use. She denied headache. On physical exam, she was noted to have a dilated and non-reactive right pupil. The eye was quiet, with no evidence of iritis or conjunctivitis and with

normal intraocular pressure bilaterally. A work-up was considered, including a CT scan of the head.

However, on repeat questioning, the patient was asked to recall the events of the last two days. At that point, she offered that she had just returned from an Caribbean cruise. She was asked about the use of a scopolamine patch. At that point, she recalled that she had removed a scopolamine patch from behind her right ear and had removed her contact lenses just prior to the onset of symptoms. She noted that she had experienced some difficulty removing the contact lenses of her right eye. She had removed the contact lens and the scopolamine patch with the right hand. The blurry vision began minutes later. The patient was offered confirmatory testing with pilocarpine drops, but she declined, as she felt very confident in the association of the association of the scopolamine patch with the onset of symptoms. She was discharged with

follow up with ophthalmology. Her symptoms resolved fully within 24 hours of ED discharge.

### Discussion:

Anisocoria is derived from Greek and means unequal pupils. In the context of this case, the patient had the onset of acute, unilateral mydriasis. The differential diagnosis includes trauma, eye surgery or inflammatory conditions. The patient had no history of trauma or surgery. She had no history of congenital anisocoria. Anisocoria can be caused by such serious diseases as an intracranial aneurysm, brain tumors or ischemia. However, there are pharmacological causes as well. One of the pharmacological agents is hyoscine, which is also known as scopolamine. Ng et al describe unilateral mydriasis in a 46 year old nurse who touched her eye after handling a scopolamine patch in the process of administration to a patient.[1] Rosenback describe a case of the nurse with unilateral mydriasis after removing a scopolamine patch from a patient. [2] A 14 year old boy developed unilateral acute onset mydriasis after handling a scopolamine patch after he inadvertently touched his eye.[3] Shah et al report a similar event, in which the emergency department management included a stroke alert, prior to the appreciation the relationship to the patient's scopolamine patch. [4] Other case reports of scopolamine related acute unilateral mydriasis have been reported. [5-8] The failure of a pupil to vasoconstrict within 30 minutes of the administration of 1% pilocarpine has been described as evidence of a pharmacological cause of acute unilateral mydriasis. [9]

An appreciation of the pharmacological causes of anisocoria can prevent unnecessary testing and can allay patient anxiety.

### Conclusion:

Anisocoria is derived from Greek and means unequal pupils. The differential diagnosis includes trauma, eye surgery or inflammatory conditions. The patient had no history of trauma or surgery. She had no history of congenital anisocoria. Anisocoria can be caused by such serious diseases as an intracranial aneurysm, brain tumors or ischemia. However, there are

pharmacological causes as well, including scopolamine related acute unilateral mydriasis. An appreciation of the pharmacological causes of anisocoria can prevent unnecessary testing and can allay patient anxiety.

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