

# CONCEPTS IN HYPERTENSION

A Journal Article-Based Approach to Understanding the Clinical Aspects of Hypertension

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## Article of Interest

Littler, W et al. Direct arterial pressure, pulse rate, and electrocardiogram during micturition and defecation. *American Heart Journal*. 1974. [\(Click to Access\)](#)

## Context and Study Objective

Vasovagal events are the leading cause of syncope yet viewed as a diagnosis of exclusion. In such cases, subsequent evaluations result in time-consuming diagnostic tests from which little is learned. Littler and colleagues sought to chronicle the hemodynamic changes accompanying micturition and defecation, potent vagal stimuli.

## Design, Setting, and Participants

Eleven subjects underwent continuous hemodynamic monitoring as outpatients via arterial cannulation and electrocardiographic recording for 24 hours. Through the use of diary entries, circulatory changes at the time of these excretory events were documented.

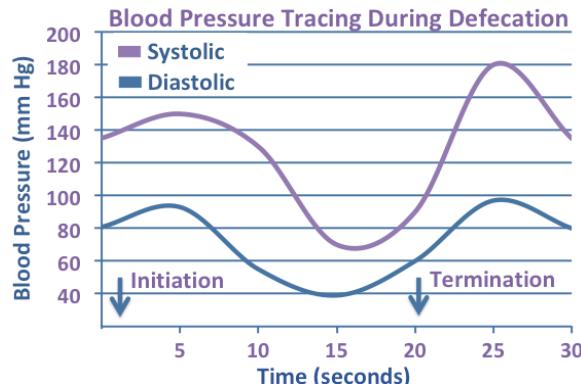
## Results

- Study characteristics: 11 male and female subjects; 25 episodes of urination and 10 of defecation. No episodes of syncope occurred.

- These excretory events, marked by straining, produced identical circulatory changes to those seen with the Valsalva maneuver.

- Figure: Defecation in this normotensive adult prompted a brief rise in blood pressure succeeded by a sustained fall from 150/93 to 70/39 mm Hg over a period of seconds; a final stage was characterized by an "overshoot" to 180/97 mm Hg accompanied by a 15% decline in pulse rate. Total event duration was 30 seconds.

- A similar pattern was noted upon micturition. A hypertensive male experienced a decline in pressure from 180/110 to 128/86 mm Hg; blood pressure recovery occurred without an overshoot. However, heart rate slowed by 25%. Total event duration was 40 seconds.



## Clinical Perspective

- As these tracings indicate, straining results in profound and rapid changes in circulatory status which can precipitate hemodynamic instability and syncope.

- While well aware of this phenomenon, few among us have the diagnostic confidence to forego an intensive workup when the patient's history suggests this type of situational syncope.

- As such, consider a focused work up among high-risk patients but be mindful that additional precipitants need not be relentlessly pursued among lower risk populations.

- Disclosures: I have no conflicts to declare.