BioButton®* multi-parameter wearable at home

Early intervention for patient with GI bleed

BioButton®* multi-parameter wearable device, paired with BioDashboard™* clinical intelligence solution

Ellie
77-year-old female

Patient overview

- History of congestive heart failure
- Visited urgent care with fatigue and vomiting
- Transferred immediately to the ED for evaluation of upper GI bleed

Hospital course

Ellie arrives at the ED via ambulance. Paramedics report two episodes of coffee ground emesis en route to the hospital. She is conscious, oriented, and reports no pain. She is given antiemetics, proton pump inhibitors, and IV fluids, and is admitted to the med-surg GI unit.

An EGD performed the next morning reveals esophageal ulcers, which are cauterized. Her hemoglobin and hematocrit remain stable following the procedure, and she is discharged the following afternoon.

Ellie's discharge plan includes home monitoring facilitated by the BioButton®* multi-parameter wearable device, which is applied to her left upper chest prior to discharge.

The BioButton®* multi-parameter wearable transmits Ellie's resting heart rate and resting respiratory rate, along with additional contextual biometric data. Her data is collected and transmitted wirelessly to the BioHub™* and stored securely within the BioIntellisense BioCloud™*. A remote monitoring clinician reviews Ellie's data and the notifications generated by the BioDashboard®* system. When used in Post-Acute Mode, the BioButton®* multi-parameter wearable has a battery life of up to 16 days and can provide readings up to 20 times per hour.

10:13 a.m.

ED ASSESSMENT

Oral Temp: 36.8° C
HR: 97
RR: 18
BP: 102/66
SpO_2: 97% on room air
Lab Results: Hemoglobin 9.6g/dL,
Hematocrit 28%, BUN 24

Home

Ellie returns home to rest and recover from her hospital stay. She takes her daily PPI as prescribed, follows dietary restrictions, and eats only soft foods for the first week. After that, she gradually advances her diet. She continues to wear the BioButton®* multi-parameter wearable.

Twelve days into Ellie's home monitoring journey, the remote monitoring clinician receives a BioDashboard®* notification for a respiratory rate trending above her personal baseline. The clinician reviews Ellie's data and the additional biometrics provided by the BioButton®* multi-parameter wearable and notes that the elevated respiratory rate does not correlate with activity or exercise.

Following the review of the BioButton®* generated notifications, Ellie's care team contacts her and finds that she has been feeling a little tired and dizzy. She checked her blood pressure earlier that day and noted it was lower than usual. She also reports having black, tarry stools for the past few days. The care team is concerned that Ellie's esophagus may be bleeding again.

Outcome

Ellie is quickly seen by her gastroenterologist who performs a repeat EGD, revealing another upper GI bleed which was treated with cautery. A repeat EGD is performed the following day, revealing another upper GI bleed – quickly treated with cautery. Following the procedure, Ellie is admitted to the observation unit, where she receives two units of packed red blood cells for a hemoglobin level of 6.4%. She is discharged home in stable condition wearing the BioButton®* to continue monitoring her recovery.

Discussion

Approximately 70% of upper GI bleeding cases occur in patients over the age of 60, and timely recognition and management are imperative and potentially lifesaving.[1] The BioButton®* multi-parameter wearable delivers personalized data and clinically relevant, actionable alerts. The notification generated by the change in Ellie's respiratory rate – paired with additional biometrics recorded by the device – prompted further investigation into her symptoms. She did not require inpatient readmission and showed no subsequent signs or symptoms of bleeding.

When used in Post Acute Mode, the BioButton®* multi-parameter wearable device provides visualization of resting heart rate, resting respiratory rate, skin temperature, activity level, sleep tracking, step and gait, body position, and incline angle while sleeping.

Please consult the product IFU prior to use. Results and outcomes vary for patients. This story reflects a real patient from an anonymized hospital. Patient monitoring products should not be used as the sole basis for diagnosis or therapy and are intended only as an adjunct in patient assessment.

References:

1. Costable NJ, Greenwald DA. Upper Gastrointestinal Bleeding. *Clin Geriatr Med*. 2021;37(1):155-172.

Want to learn more about the BioButton®*?
Contact your Medtronic sales representative or visit our site: www.medtronic.com/healthcast_biobutton

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