



# The Butterfly iQ+ Effect.

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A Rural Hospital Experience.

A Case Study by:  
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“The innovative technology and unique portability of the Butterfly IQ+ gives clinicians an opportunity to elevate the care delivered to rural communities, while enhancing the relationship between provider and patient.”

## Introduction

Currently, all healthcare facilities are combatting the obstacles created by the COVID-19 virus. However, the 20% percent of the U.S population that resides in rural areas has additional unique healthcare needs and certain barriers (Harrington et al., 2020). The Butterfly IQ+ has proven to be helpful in many different areas including ERs, ORs, ICUs, and L&D suites. These challenges range from difficult IVs, arterial and central venous line insertions; to TTEs, lung scans, and peripheral nerve blocks — not to mention assistance with neuraxial procedures when it matters most.

## Case History

At a 55-bed rural hospital in Missouri, I received a phone call regarding a 23-year-old female who presented in labor, approximately 1 week prior to her scheduled appointment in the pre-anesthesia clinic. She was to be evaluated in-clinic for her unrepaired lumbar scoliosis after being told by her primary care physician that her best chance of being eligible for an epidural for her labor would be after that appointment, where the degree of difficulty would be assessed.

Upon my arrival to the labor suite, the patient was anxious about her compromised birthing plan and apprehensive about someone attempting an epidural insertion prior to familiarizing themselves with her spinal anatomy. The patient agreed to let me scan her spine under one condition: no blind epidural attempts would be made without a promising ultrasound scan first. A transverse ultrasound scan with the Butterfly IQ+ revealed that her lumbar spine was offset to the left of midline with minimal internal rotation, but multiple shallow open spaces were identified. The patient was informed of the findings and reassured that these places were the best options for an epidural insertion attempt. Radiology studies would later report that she had a long-left convexity starting at T12, extending down to the L5/S1 space. A skin marker was used to mark each interlaminar space along with the coinciding depth. This data was

relayed to my colleague for future reference. I received a message later that day from my colleague saying the epidural went smoothly and uneventfully, on the first attempt, with a LOR to saline at 3.5cm.

This patient was able to, on the same day, request an epidural, receive it with one atraumatic attempt, without any complications — all while having her concerns addressed and every step taken to promote the best birthing experience. All because the Butterfly IQ+ was implemented at the earliest stage of her anesthesia care.

## What Does This Teach Us?

Training and experience teach us that every patient has unique needs and expectations. Which raises the question: why not proactively utilize a device that could increase the odds of delivering safe, efficient and satisfying care? This case emphasizes the importance of having the knowledge and “tools” to help us improve patient-centered outcomes. The Butterfly IQ+, in the right hands, has proven to be a compact and powerful tool capable of elevating the standard of care we provide patients with each encounter.



## What Does This Teach Us?

1. Harrington RA, Califf RM, Balamurugan A, Brown N, Benjamin RM, Braund WE, Hipp J, Konig M, Sanchez E, Joynt Maddox KE. Call to Action: Rural Health: A Presidential Advisory From the American Heart Association and American Stroke Association. *Circulation*. 2020 Mar 10;141(10):e615–e644. doi: 10.1161/CIR.0000000000000753. Epub 2020 Feb 10. PMID: 32078375.

## The Author



Daniel Roberson is a full-time CRNA providing anesthesia services at a rural hospital near Kansas City, MO. He is also board certified in vascular access and works PRN providing vascular access services at a children's hospital near Kansas City, MO. His career interests include POCUS, regional anesthesia, pediatric critical care, flight medicine and quality improvement (QI) projects.