



Outcomes Using the Reinforced Biologic Augmented Repair (ReBAR) Technique in Robotic Transabdominal Preperitoneal Ventral Hernia Repair

Briana Sowers¹, Cory Banaschak, DO², Paul Szotek, MD³

¹Marian University College of Osteopathic Medicine,

²Ascension St. Vincent Hospital Indianapolis, ³Indiana Hernia Center



Introduction

Due to the availability of information on the internet, patients are well informed of the several types of hernia repair available to them. They are also increasingly made aware of the litigious environment surrounding synthetic mesh use through advertising [1]. With increasing concern for complications, patients are seeking methods of hernia repair that reduce foreign material while providing lasting results.

In response to patients' concerns, we developed a novel technique known as the reinforced biologic augmented repair (ReBAR), which incorporates data proven principles of hernia repair. This includes (1) primary closure of hernia defects and (2) reinforcement of the primary repair using mesh (figure 1). These principles have been proven to decrease ventral hernia recurrence rates [2,3].

The purpose of this study is to analyze the postoperative outcomes in robotic assisted reinforced biologic augmented repair of ventral hernias. The primary outcome is ventral hernia recurrence. Secondary outcome was incidence of surgical site occurrence.

Methods

This study is a retrospective review of data from a single surgeon performing elective ventral hernia repairs (VHR) from 8/9/19 to 4/29/21. Repairs utilizing the robotic transabdominal preperitoneal (rTAPP) approach with the ReBAR technique were included. After gaining access to the abdominal cavity, docking the robot and performing a standard rTAPP ventral hernia dissection, the ReBAR technique was then utilized (figure 2). This consists of:

1. Suture closure of the ventral defect(s) and plication of any significant diastasis recti greater than 2 cm.
2. Augmenting the repair with a reinforced biologic mesh.

Primary outcome was ventral hernia recurrence. The secondary outcome was incidence of surgical site occurrence (SSO), defined as surgical site infection, wound dehiscence, seroma, or enterocutaneous fistula.

Patients were followed using a HIPAA compliant texting application which allowed for surgeon to patient communication regarding any post-operative concerns.

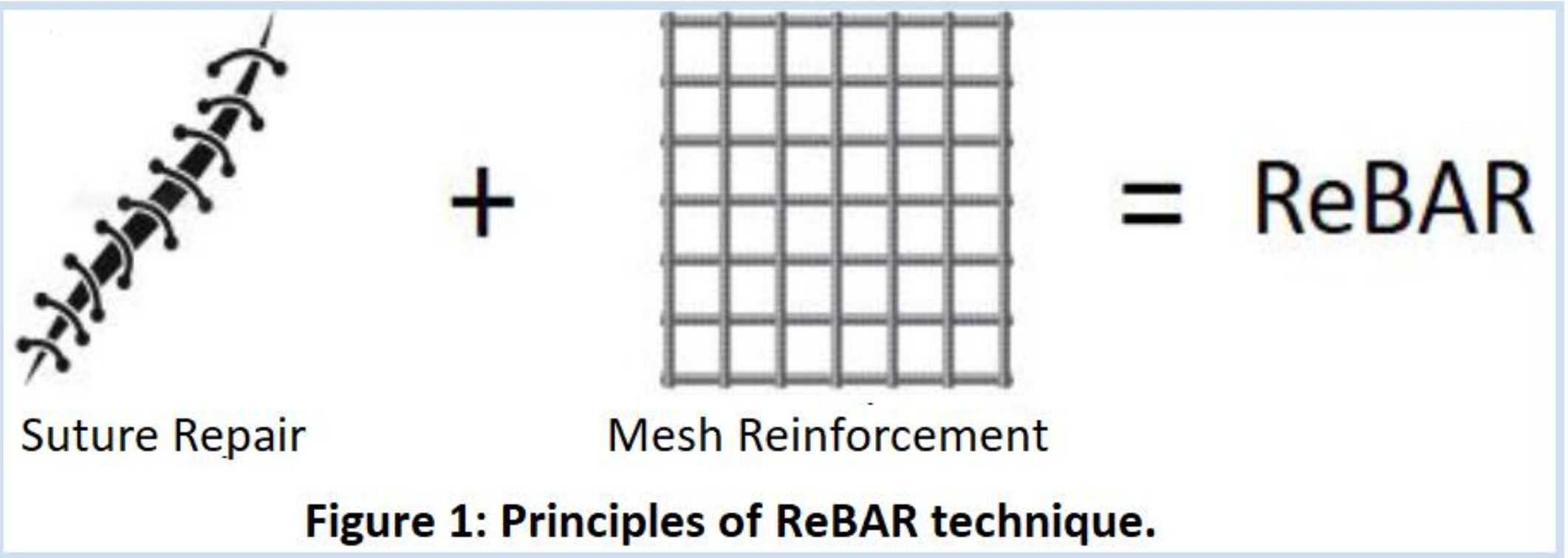


Figure 1: Principles of ReBAR technique.

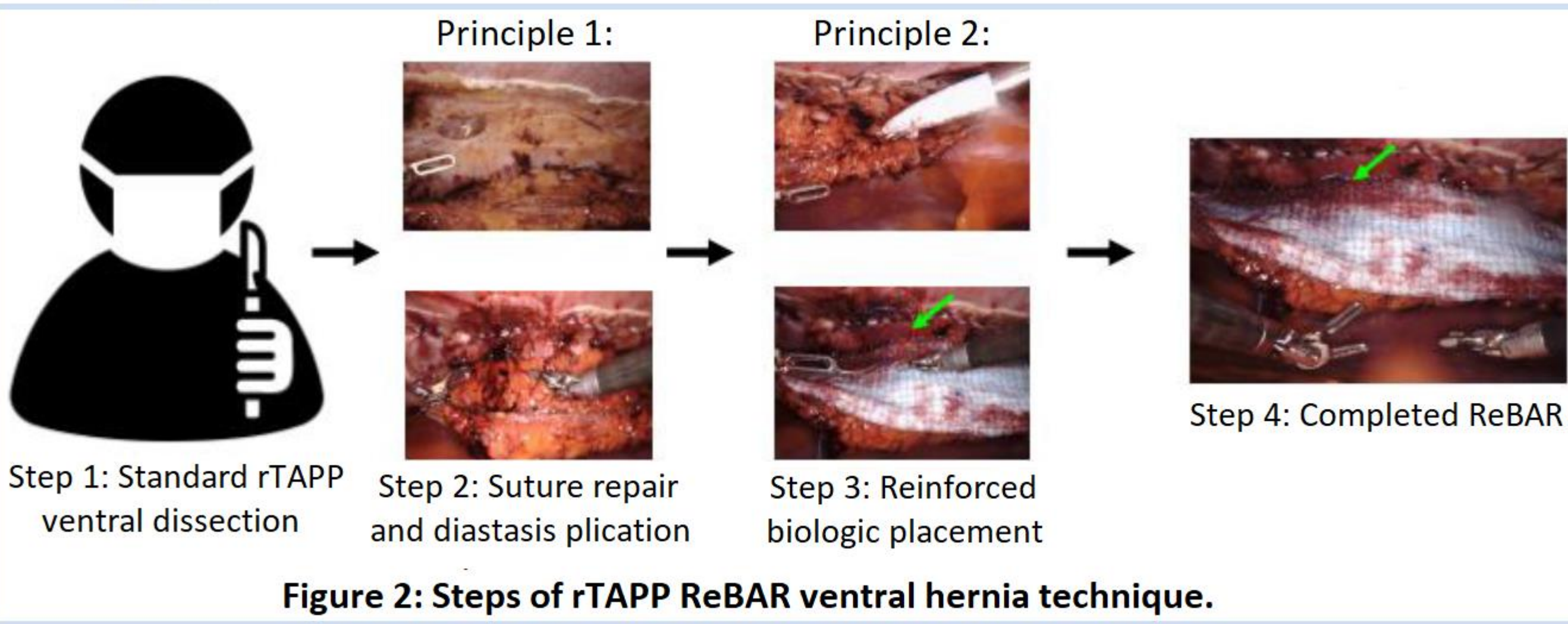


Figure 2: Steps of rTAPP ReBAR ventral hernia technique.

Results

58 patients underwent rTAPP VHR using the ReBAR technique. Follow up ranged 192 days to 821 days, with an average follow up period of 373 days. Patients were contacted through a HIPAA compliant smartphone application at routine intervals to inquire about new concerns or complications.

Outcomes:

- 1 recurrence (1.7%)
- 0 SSO

Conclusion

Patients are encouraged to pursue the choice of hernia repair with which they are most comfortable while receiving maximum medical benefit. The ReBAR technique combines data driven principles while addressing patient concerns.

The recurrence rate in this population of 58 patients undergoing ventral hernia repair was 1.7% and no other postoperative complications were identified. The recurrence was identified 6 months postoperatively in a smoker who had a witnessed coughing event during extubation.

Limitations of this study include the small number of patients and the average duration of follow up. Additionally, each patient was not evaluated in office as patient communication was primarily completed through a smartphone application.

In conclusion, rTAPP ReBAR technique is a safe and durable option for VHR in the short term. Continued follow-up of this cohort is warranted.

References

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