

## How We Do It: Early Experience with Zip Straps for Robotic Incisional Hernia Repair

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### Introduction

Robotic repair of incisional hernias routinely involves primary closure of the hernia defect. We present our early experience with a novel device to aid in primary closure of large defects.

### Materials & Methods

In each case, three or more zip straps were used to primarily close the incisional hernia defect. The zip strap is a 2.7 mm nylon strap attached to a braided polyester suture leader. These are placed robotically and sequentially tightened to achieve significant closure of the defect. This off loads the tension and is followed by final closure with a barbed suture and mesh reinforcement.



**Figure 1**

Zip strap

### Results

Thirty-seven adults (20 male, 17 female) underwent this repair between November 2023 - January 2025. These operations were performed by five surgeons at three different institutions. The final choice of the procedure and mesh used was at the surgeon's discretion.

The average defect width was 8cm (range 4-13cm). These were M2 - M5 type hernias. The operations were intraperitoneal underlay mesh with defect closure (22 patients), extended totally extraperitoneal (eTEP) retrorectus repair (12 patients) or eTEP with release (3 patients).

Three postoperative complications were noted. Postoperative seroma requiring drainage was noted in two patients. One patient underwent diagnostic laparoscopy during the same admission which ruled out an enterotomy. No recurrence has been observed at the time of this submission.

### Discussion

This new technique is safe and easy to adopt into a robotic hernia practice. Anecdotally, we have noticed a trend toward less use of component separation for primary defect closure. We plan to continue our investigations into this novel technology.

### Figure 2

Preoperative compared to postoperative CT scans of representative patients undergoing robotic incisional hernia repair with mesh using zip straps as an adjunct for primary closure. Patient 1 had a 9 cm defect repaired via eTEP. Patient 2 underwent IPOM repair for a 10 cm defect. Patient 3 was also an eTEP repair for recurrent 12 cm hernia with old mesh removal.

