USE OF CROSSLINKED BIOLOGIC TISSUE IN ROBOTIC PRE-PERITONEAL ONLAY MESH (PPOM) REPAIR FOR VENTRAL AND INCISIONAL HERNIÆ: EARLY FOLLOW-UP YIELDS SATISFACTORY RESULTS

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INTRODUCTION: Common robotic ventral hernia repair techniques currently employ intra-peritoneal onlay mesh (IPOM). At our institution, we offer open, laparoscopic, and ro-botic *pre*-peritoneal (PPOM) approaches to ventral hernia repair. Patient demands have led us to offer a repair com-bining the advantages of a robotic PPOM approach with those of modern biologic implants. We present our experience with robotic PPOM for ventral and incisional hernia repair using crosslinked biologic tissue.

METHODS and PROCEDURES: Retrospective chart review was conducted of 14 consecutive cases of ventral and incisional herniæ repaired with XI-S+® crosslinked biologic tissue (Colorado Therapeutics LLC; Louisville, CO) between December 2019 and September 2020. Patient demograph-ics, preoperative hernia parameters (defect type, location, and dimensions), operative times, blood loss, implant device size, length of stay, conversion to open ventral hernia repair (OVHR), and complications (including bleeding, seroma formation, infection, device explantation, and recurrence) were analyzed.



Figure 1. Incarcerated omentum.

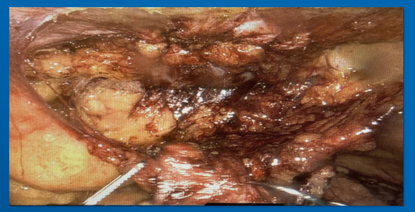


Figure 2. Main defect with secondary smaller defect.

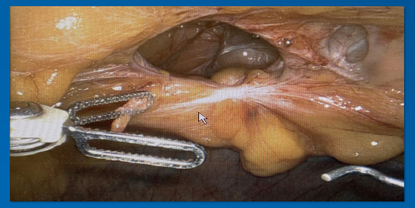


Figure 3. Pre-peritoneal pocket with closed defects.

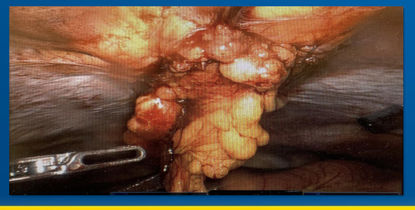


Figure 4. Pre-peritoneal pocket with XI-S+ tissue onlay.



Figure 5. Closed peritoneal flap with XI-S+ under peritoneal flap.

RESULTS: Mean age was 59 years (SD 20 years; range 19–94 years), with median BMI 27.2 kg/m^2 (range 23.1–40.2 kg/m^2). Median pre-operative hernia area was 5.9 cm^2 (range 4.0–1.5 cm^2), with mean operating time 51.2 min (SD 34.4 min). A majority of cases (72%) were outpatient, with mean length of stay 1 day (range 1–3 days); no patient was discharged with narcotic pain control. Conversion to OVHR was necessary in one case. Overall complication rate was 14.3% (n=2; mesh-unrelated anterior sheath defect recurrence in one patient and seroma for-mation in another).

CONCLUSION: To our knowledge, this represents the first case series of robot-assisted hernia defect closure and PPOM using crosslinked biologic tissue for ventral and incisional herniæ. Our outcomes—hernia recurrence rate (7.1%), non-recurrence complication rate (7.1%), and absence of infec-tion or mesh explantation—compare favorably to results using PPOM reported in the literature. Our experience also suggests that patient education and strategic use of XI-S+ crosslinked biologic tissue for hernia repair contributes to desirable patient outcomes.

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