Intracorporeal suturing has been shown to be an effective means of preventing post-surgical complications, smaller and fewer incisions when compared to open general surgery techniques for the repair of hernias. Laparoscopic surgery requires trans-abdominal sutures and tackers, which is often the cause of post-operative pain. However, the novel robotic single site incision procedure uses intracorporeal suturing of the mesh directly to the fascial edge, bypassing the sutures and tackers associated with pain in traditional surgery. Robotic instrumentation has been developed to allow the surgery to be performed with greater dexterity due to the wrist action articulation of the robotic arms in comparison to the rigid trocar used in traditional laparoscopic surgery. Reports have suggested that robotic instrumentation allows procedures to be performed with similar advantages while reducing complications associated with traditional laparoscopic procedures.

IRB approval was obtained. 111 patients who underwent daVinci® robotic surgery and 116 laparoscopic ventral hernia patients were chosen as subjects. All procedures were performed at the same acute care hospital and by the same operative surgeon. Patients were excluded from the study if they had multiple procedures, such as concomitant appendectomy, gynecological procedures or cholecystectomy, so comparisons could be made between hernia procedures alone without factors that may alter surgical time, length of stay, or complication rates. Patient medical records at both the hospital and surgical practice were reviewed by medical record number. Information was collected on age, gender, BMI, anesthesia time, procedure time, complications, discharge time, etc., and pain medication given in the recovery room. All pain medication doses were converted to doses of morphine for a true comparison. Discharge time is time from the end of procedure to discharge.

The following cases were chosen based on availability of recurrence data for up to two years following surgical repair.

Recurrence

Robotic ventral hernia surgery is safe and effective with a significant decrease in recurrence rates and conversion to an open procedure, p<.05. The operative time in the robotic surgery was significantly longer, p < .05, due to the addition of primary closure which was not used in the laparoscopic technique. Length of stay, complications and pain medication after surgery were lower in the robotic procedure, but not significant p > .05. Potential savings in the robotic surgery is due to the ability to decrease mesh size with primary closure. Additional benefits are expected as our experience as the number of robotic surgeries increase.

References