

Introduction

Minimally invasive surgery (MIS) is the standard approach for most of the surgical procedures performed by general surgeons. Traditionally the majority of operations for trauma are performed open due to the complexity of cases, however, trauma surgeons are expanding their armamentarium to include MIS in a variety of acute procedures. We report our experience with the application of laparoscopy in a variety of trauma cases.

Methods

A retrospective review of trauma cases performed between 1/2012-1/2016. During that time 52 laparoscopic cases were performed after traumatic injury. Patient demographics, injury severity score (ISS), injury mechanisms, the types of procedures and outcomes will be described. Means and standard deviations were calculated and t test were performed. A p value of <0.05 was statistically significant.

Results

| Total # of Trauma Cases | Gender | Age | Comorbidities | Mechanism | % Laparoscopic vs Converted to Open | Average Injury Severity Score |
|-------------------------|----------|-------|--|-----------------|-------------------------------------|---|
| 52 | Male 43 | 29±11 | Obesity 30% HTN 20% CAD 20% Substance Abuse 44% | Blunt 35% | Laparoscopic 85% | Total Avg 15±9 Avg Lap 12±9 Avg Open 20±7 p=0.04 |
| | Female 9 | | | Penetrating 65% | Converted-Open 15% | |

Surgical Procedures

| Non-Therapeutic Laparoscopy | Repair of diaphragmatic rupture or traumatic abdominal wall hernia | Hematoma evacuation & Control of bleeding | Control of solid organ bleeding & repair | Intestinal repair |
|-----------------------------|--|---|--|-------------------|
| 36% | 29% | 15% | 11% | 9% |

Outcomes

The overall length of stay was 5 days, SD 6. There was n=1 late death in a poly-trauma patient that required open conversion for complex solid organ and intestinal injuries. There was n=1 of a community acquired pneumonia, and n=1 case of a recurrent pneumothorax.

Conclusion

A descriptive series of trauma operations approached with MIS techniques is described. This cohort had high injury severity and a predominance of comorbid conditions. Laparoscopy was successfully applied in the majority of cases for a variety of therapeutic procedures and mortality and morbidity was low. MIS is safe and is gaining momentum for application in traumatic injury.