Advances in hepatectomy techniques: laparoscopic and robotic approaches.

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Abstract

Hepatectomy is a surgical procedure used to remove a portion of the liver. In recent years, advances in laparoscopic and robotic surgical techniques have made hepatectomy a less invasive procedure with improved outcomes. In this short communication, we will discuss the benefits and limitations of laparoscopic and robotic hepatectomy techniques, and their potential impact on patient outcomes.

Keywords: Hepatectomy, Liver, Robotic hepatectomy techniques, Laparoscopic hepatectomy techniques.

Introduction

Hepatectomy is a complex surgical procedure that carries significant risks for patients. Traditionally, open hepatectomy has been the gold standard for the treatment of liver disease, but it is a highly invasive procedure that requires a large incision and prolonged recovery time. In recent years, laparoscopic and robotic surgical techniques have been developed to perform hepatectomy with less invasive approaches [1].

Laparoscopic hepatectomy

Laparoscopic hepatectomy involves making several small incisions in the abdomen and using a laparoscope (a small camera) to visualize the liver. The surgeon then uses specialized instruments to remove the portion of the liver that needs to be excised [2]. The benefits of laparoscopic hepatectomy include smaller incisions, reduced blood loss, and a shorter recovery time compared to open surgery. Additionally, patients may experience less pain and scarring with laparoscopic surgery. However, laparoscopic hepatectomy requires a high level of surgical skill, and may not be suitable for all patients.

Robotic hepatectomy

Robotic hepatectomy is a newer surgical technique that uses a robotic system to perform the procedure. The surgeon sits at a console and controls the robotic arms, which are equipped with specialized instruments [3]. The robotic system provides a 3D view of the surgical site and allows for greater precision and control than laparoscopic surgery. Robotic hepatectomy also offers the benefits of smaller incisions, reduced blood loss, and a shorter recovery time compared to open surgery. However, the use of a robotic system adds to the cost of the procedure, and there is a steep learning curve for surgeons to become proficient in the technique [4].

Comparison of laparoscopic and robotic hepatectomy

While both laparoscopic and robotic hepatectomy offer significant benefits over open surgery, there are some key differences between the two techniques. Laparoscopic hepatectomy is a more established technique, with a larger body of evidence supporting its safety and efficacy [5]. Robotic hepatectomy, on the other hand, is a newer technique with a smaller body of evidence to support its use. However, the use of a robotic system may offer greater precision and control than laparoscopic surgery, particularly in complex cases.

Conclusion

Advances in laparoscopic and robotic surgical techniques have made hepatectomy a less invasive procedure with improved outcomes. Both laparoscopic and robotic hepatectomy offer significant benefits over open surgery, including smaller incisions, reduced blood loss, and a shorter recovery time. While laparoscopic hepatectomy is a more established technique, robotic hepatectomy may offer greater precision and control in complex cases. Further research is needed to determine the optimal approach for hepatectomy in individual patients, and to fully understand the impact of laparoscopic and robotic techniques on patient outcomes.

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