Researchers at the University of South Florida have invented a laparoscopic clamp instrument that can be placed into the abdomen without the creation of a skin incision.

Laparoscopic surgery is minimally invasive and is the standard for performing numerous surgical procedures across various surgical specialties. Typically, three to four laparoscopic ports must be placed during conventional laparoscopic surgery, requiring multiple incisions which leave abdominal scars, and contribute to post-operative pain. Laparo-Endoscopic Single Site (LESS) surgery can be performed entirely through a single umbilical incision, but complicates the manipulation of the instruments and eliminates triangulation. Thus, there is a need for a tool that is easily controllable, which, in turn, reduces collisions with other instruments during laparoscopic procedures and can be used to triangulate with other tools.

Our inventors have developed a device that assists surgeons in the performance of laparoscopic and laparo-endoscopic surgery. It allows tissue to be grasped for appropriate surgical manipulation during the surgical procedure, without the need for a laparoscopic instrument to be maintained throughout the surgery. It provides control of the tissue by using an electrically controlled clamp made from nitinol or flexinol, and a suture thread, with the ability to detach the clamp from the tissue without the need for an endo-mechanical laparoscopic device. Furthermore, the shaft of the laparoscopic instrument has a beveled end, resembling a 14 gauge intravenous needle, which is placed into the abdomen similar to the placement of a needle, thus removing the need for an incision. These features will contribute to less abdominal wall trauma and preserve the ability to triangulate during surgery.

**ADVANTAGES:**

- Reduced surgical operative time and higher efficiency
- Easy surgical manipulation
- Less abdominal wall trauma and preservation of triangulation

**Minimally Invasive Laparoscopic Device**

*Illustrates one Design of the Laparoscopic Tool for Grasping Tissue*

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