Researchers at the University of South Florida have developed a laparoscopic tool with a small diameter to greatly minimize the potential scarring of a patient.

A laparoscopy is a minimally invasive surgery using an instrument that is inserted via small incisions through the abdominal wall. Traditional laparoscopic surgeries utilize tools with a diameter of 5 mm or larger. These tools may require larger incisions which can scar the patient and contribute to post-operative pain. Some surgeons use an alternative method which involves inserting a smaller device through a single opening in the patient’s umbilicus. However, this method is typically not flexible enough to complete the surgery. This highlights the need for a more flexible laparoscopic surgical method which will also produce minimal post-operative scarring.

USF researchers have developed a novel small diameter apparatus which is flexible enough to be operated from an incision in the patient’s umbilicus. This device enables a surgeon to use a variety of standard size laparoscopic tips without compromising tip size or force capability. Furthermore, this technique also greatly minimizes the likelihood of scarring. The apparatus contains an outer shaft with a diameter of 1.6 mm or smaller. This shaft then contains a moveable rod that is connected to a laparoscopic tip inserted through the patient’s umbilicus. After the surgery is complete, the devices are disconnected and each removed via the route of introduction. Except for the umbilicus scar, which was there prior to the surgery, this method will not leave a visible post-surgery scar. This technique will also greatly reduce post-operative pain due to minimized scarring.

**ADVANTAGES:**
- Reduction of post-operative pain
- Minimized scarring
- Allows the use of standardized tips
- Enhanced flexibility

**A Non-Scarring Minimally Invasive Surgical Technique**

**A Visual Depiction of the Docking Mechanism**

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