Novel Surgical Instrument Sleeve System

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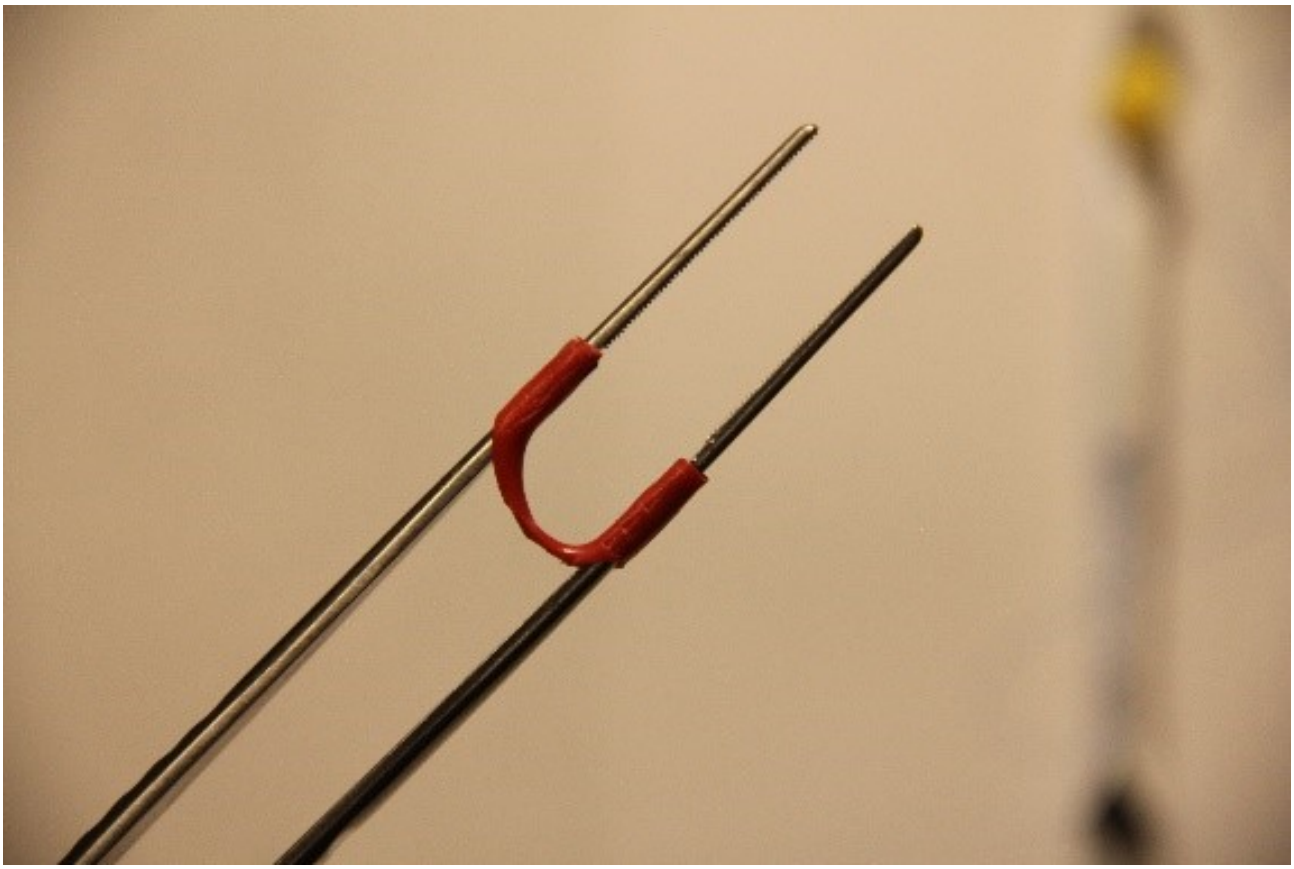
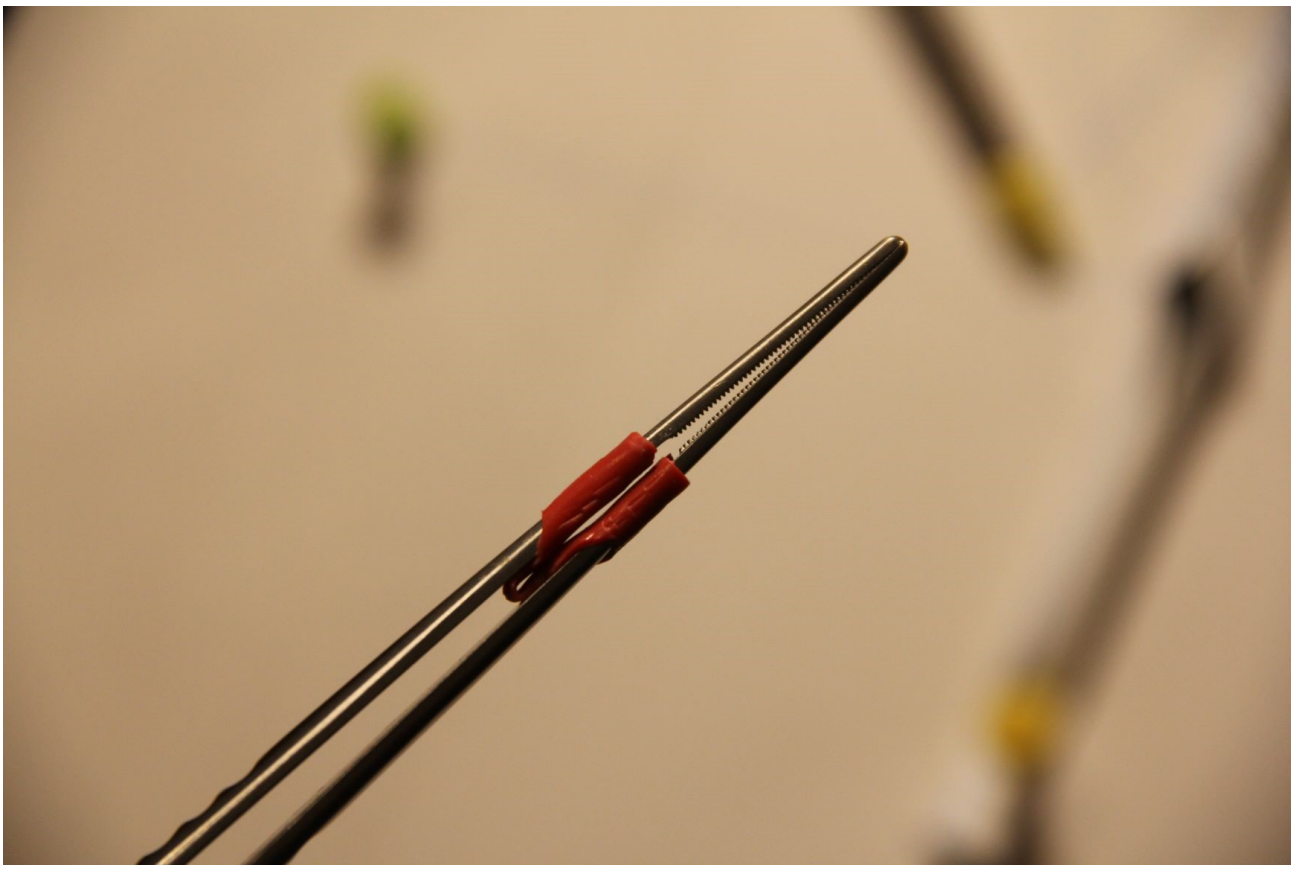
Technology description

Background:
Surgical instruments are designed to perform various surgical procedures and sutures are used to close the edges of incision or wounds or to repair damage tissues. During certain surgical procedures, often surgeons uses forceps to manipulate tissue and to align the tissue for passage of the needle. However, due to the delicate nature of the suture material, neither the forceps nor the needle driver can be used to manipulate the suture. Thus, either the surgeon must put down the forceps to handle the suture, or a surgical assistant has to handle the suture for the surgeon. Also, the surgeon must be careful not to touch the tissue or the forceps with the sharp tip of the needle because the tip can lacerate delicate tissue, or the tip can be damaged by contact with the metal forceps. Thus, there is a need to overcome the limitations of existing surgical instruments, such as forceps, in handling suture material in a way that allows a surgeon to manipulate fine suture material without releasing the surgical instrument and which allows the surgeon to manipulate sutures in deeper body cavities where access may be limited.
Invention Description:
Researchers at the University of Toledo Medical Center has developed a novel surgical instrument sleeve system that allows to handle both the delicate suture material and the sharp tip of the surgical needle while still permitting the surgeons to manipulate tissue or to position of the surgical needle. The novel sleeve system protects against sutures becoming trapped in the hinge of the surgical instrument. This system improves the ability of a surgical instrument to handle suture material and broadens the capabilities of the surgeon’ s non-dominant hand during surgical procedures. The novel system allows a surgeon to manipulate fine suture material during surgery without releasing the surgical instrument, such as forceps. This reduces, if not eliminates, the need for a skilled surgical assistant to be present during surgery to handle the suture material for the surgeon. During performance of a suture repair in a deep body cavity, the assistant’ s hand can be an impedance to the surgeon’ s vision. This instrument allows manipulation of fine suture in deep body cavities essentially replacing the assistant’ s hands. Lastly, the system allows the surgeon to use the surfaces of the outer walls of the sleeves as a support mechanism to change the angle of the needle without damaging the tip of the surgical needle.





Application area

Surgical procedures and operations.

Advantages

- Works with existing suture types
- Retains the original function of all surgical instrument
- Quick and intuitive learning curve
- Decreases operating costs by eliminating the need for surgeon assistant
- Improved handling of the suture material
- Broadens the capability if the surgeon’ s non-dominant and in performing surgical procedures.

Institution

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