Endo Retractor

Problem Statement: Laparoscopic cholecystectomy surgery is the commonly performed minimally invasive laparoscopic surgical procedure for removal of the gall bladder from the patient's body. Around ten million laparoscopic cholecystectomy surgeries are performed annually worldwide. In the cholecystectomy procedure, laparoscopic devices or instruments are used to retract and anchor the gall bladder (inside the body cavity). Currently, the existing surgical devices used in laparoscopic cholecystectomy surgeries for retracting the gall bladder are expensive and not reusable. The research team has addressed this drawback and designed an innovative laparoscopic surgical device/instrument called Endo-retractor. The novel instrument design will help surgeons perform surgeries in less time and facilitate less stressful surgeries, thereby aiding the effortless and efficient gall bladder removal during these surgeries.

Uniqueness of the Solution: The Endo-retractor is a small device with a simple design. The retractor offers an affordable solution. The instrument is expected to benefit laparoscopic surgeons by making it easier for them to anchor and lift organs, thus reducing surgical complications and internal tissue damage for the patient. The novel design of this Endo-retractor makes laparoscopic cholecystectomy surgeries simpler, less stressful, less time consuming for the surgeons, and in turn cost-effective for the patients.

Current Status of Technology: The proposed concept is at TRL 3. The researchers have demonstrated the initial proof-of-concept for device candidates in a limited number of laboratory models. The estimated cost of the device is INR 1,000 per piece.

Societal Impact: Endo-retractor based surgeries will be affordable with less internal tissue damage and beneficial to the patients. The surgeons will also benefit as the instrument enables effortless and efficient surgeries.

Patent(s): Filed

Relevant Industries: Healthcare, Medical Devices.

Faculty: Prof. Bhallamudi Ravi, Mechanical Engineering.