Novel retraction device for gallbladder extraction during laparoscopic cholecystectomy

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Technology description

A source of frustration in laparoscopic cholecystectomy involves extraction of the gallbladder through port sites smaller than the gallbladder itself. A collaboration between UVA surgeons and a biomedical engineer has yields a novel device for the safe, minimal enlargement of laparoscopic port sites to extract large, stone-filled gallbladders from the abdomen.
University of Virginia physicians have developed an inventive device to aid surgeons in safely removing patients\92 gall bladders when complications arise that put patients at increased risk of harm and morbidity.
Background:
Cholecystitis, or inflammation of the gallbladder, is among the most costly gastrointestinal diseases. The condition is frequently treated with laparoscopic cholecystectomy, a common surgical procedure performed on nearly one million patients annually in the U.S.During this procedure, surgeons frequently have difficulty extracting the gall bladder from the abdominal cavity due to the small size of the incision, which typically measures approximately one centimeter in length. As a result, the organ \97 enlarged with stones \97 often becomes flattened and lodged against the inside of the abdominal cavity. This complication occurs in as many as one in three surgeries, requiring the surgeon to enlarge the incision site to remove the organ. This procedure carries the risks of cutting into the recovery bag, rupturing the gallbladder and resulting morbidity.
About the Invention:
The invention is a surgical tool resembling a retractor that aids surgeons in extending laparoscopic incisions when it becomes necessary to remove a gall bladder that has become lodged in the abdominal cavity. This tool is specially designed to reduce the risk of rupturing the organ and the surrounding endoscopic bag. Multiple prototype design iterations resulted in the present device, which will be tested further at the University of Virginia. The approval process, for general use, is anticipated to be relatively simple due to the elegantly straightforward design of the device. This device may be able to assist in differentiating a corporate partner in the crowded laparoscopic device segment.

Advantages

Logical and ergonomic design

Surgical risk-reducing technology
Design engineered by doctors and surgeons
Device to solve a common and time-consuming problem

Institution

University of Virginia

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