

Patient-adjustable single-port instrument for laparoscopic surgery

Single-port instrument for laparoscopic surgery, which is designed to be inflated with various air pressures in various areas, thus facilitating surgical access to the area of intervention while simultaneously allowing a better adjustment to the patient by providing a better fit and seal.

Description and essential characteristics

Single-port device for laparoscopic surgery containing several working channels that enable—by means of the prior introduction of trocars into the channels of the device—surgical access to the inner areas of the body where surgery needs to be carried out, through a single skin incision and allowing the proper handling of the necessary instruments.

The device is made of a soft material and has an inflatable conformation; the device is introduced totally or partially deflated in the pelvic-abdominal cavity and, once inserted through the skin incision, may be inflated until it fits the cavity perfectly. This procedure not only facilitates the device's insertion, but also procures a better adaptation of the instrument to the patient by providing a better fit and seal.

The device may have different inflation pressures in its various areas, thus presenting harder or softer areas as needed. Each of these areas has its own air entry and exit control. In addition, these areas are isolated from each other and there is no communication between them, preventing the exchange of air or gas.

The device is particularly indicated for gynaecological surgery (cystectomy, anexectomy, hysterectomy); however, its use is also possible in general surgery (cholecystectomy, etc.)

Competitive advantages

The primary innovative feature provided by this device compared to similar products available on the market is that it presents varying inflation pressures depending on the area of the device in question. This feature allows the double possibility of entering the pelvic-abdominal cavity totally or partially inflated. Once inserted through a single skin incision, it may be inflated until it fits the cavity perfectly.

In short, the device does the following:

- Facilitates its introduction and placement in the cavity: it is inserted deflated (very low volume) through the skin incision and once inside it is inflated and adapted to the patient.
- Reduces the effects of laparoscopic surgery (already minimally invasive).
- Allows a better fit and seal for each patient, regardless of their Body Mass Index (BMI).

- As it has varying inflation pressures for its different areas, it enables differentiated means of control for air entry and exit, which allows the isolation of areas from each other, preventing passage of air or gas between them.
- Considerably facilitates the surgeon's work, allowing the proper handling of necessary instruments.

Type of collaboration sought

Cooperation is sought with any Party interested in partnering, licensing or investing in the technology, whether it be an investor to fund the project, a partner interested in getting involved in any of the different phases until the placing on the market, a patent licensee, etc. Organisations potentially interested in this technology are those devoted to the manufacture, commercialisation and/or distribution of healthcare products, particularly medical devices; as well as hospitals, gynaecological clinics, etc.

Current stage of development

A hand-made prototype has already been developed.

Current state of intellectual property

Spanish patent P201330532, granted in September 2015.
International patent application PCT/ES2014/070277.



For further information, please contact

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