

Surgical drainage for soft tissue abscesses which, with a double communicating access allows ulcers' daily irrigation

KEYWORDS

- ☐ SURGICAL DRAINAGE
- ☐ SOFT TISSUE ABSCESS
- ☐ SKIN ULCER
- ☐ SURGICAL INFECTION
- ☐ POST-TRAUMATIC COLLECTION

AREA

- ☐ BIOMEDICAL

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Priority Number

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Patent Type

Patent for invention

Ownership

Sapienza University of Rome 1000%

Inventors

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Industrial & Commercial Reference

Surgical drainage to be utilized in hospital or outpatient settings for the treatment of soft tissue infections.

Time to Market

The drainage device object of the patent is the improvement and simplification of a surgical drainage technique already applied by the inventor in the clinic TRL 9.

Availability

Cession, Licensing and Start-up.

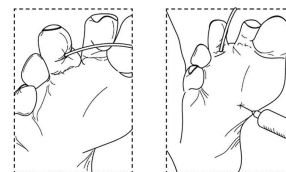


Fig. 1a

Fig. 1b

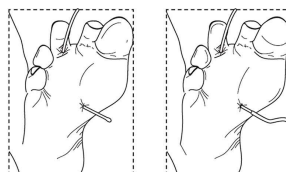


Fig. 1c

Fig. 1d

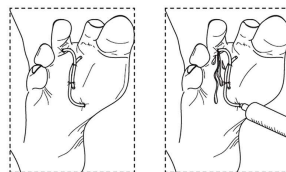


Fig. 1e

Fig. 1f

Figure 1a-1f Schematically show the various phases of the minimally invasive surgical procedure of "ulcer piercing" for the drainage of deep skin ulcers, as described by the technique prior to the patent.

Fig. 2 The recess irrigation operation of a deep skin ulceration extending along the sole of the foot of a patient treated with the minimally invasive drainage procedure "ulcer piercing" takes place with a syringe inserted into the skin opening and alongside the catheter.

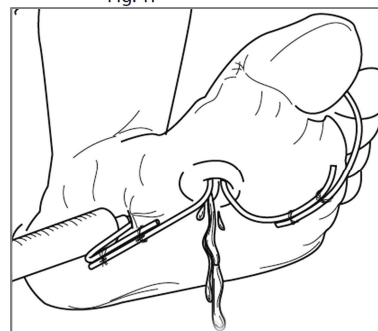
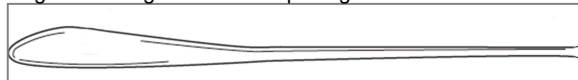


Fig. 3 The buttoned probe, essential accessory for the application of the "ulcer piercing" technique, used to explore abscess recesses of the skin ulcer and for positioning the surgical drainage in counter-opening.



Abstract

In previous clinical experiences we have documented the ease of application and the effectiveness of the use of minimally invasive drainages, positioned in counter-opening for the treatment of subcutaneous or subfascial abscess cavities or post-traumatic soft tissue serum-blood collections, and whose ends were then fixed together, to create a non-removable ring, by means of suture threads. This patent concerns the availability of drainage tubes in biocompatible and flexible material already constructed with a self-locking closure system and of a surgical instrument suitable for positioning the drainage itself.

Publications

- ❖ Cavallini M: Mini-Invasive Drainage and Irrigation Avoid Exudate Stasis, Reduce Recurrence Risk and Allow Better Rehabilitation for Deep Infected Diabetic Foot Ulcers. EWMA 2020 VIRTUAL, Fully Virtual Conference, EP070, 18-19 November.



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Surgical drainage for soft tissue abscesses which, with a double communicating access allows ulcers' daily irrigation

Technical Description

It is a self-locking medical drainage device in the shape of a lockable tube, to be positioned surgically by means of a buttoned probe which, after identifying an abscess or post-traumatic cavity, is pushed to come out through a skin counter-opening in the most distal point of the cavity itself. The free end of the tube is joined to the probe and the drainage is positioned, with a backward movement of the probe, along the identified cavity. The free drainage terminal is cut to size and connected to the connection system on the other end to form a closed loop that cannot be accidentally removed

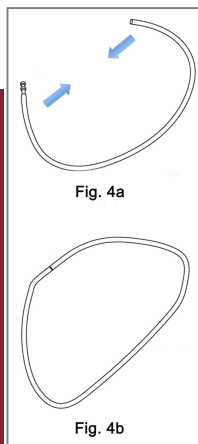


Figure 4a- 4b
Two side views of a first embodiment of the medical device for minimally invasive surgical drainage.

Technologies & Advantages

It is a self-locking surgical drainage, readily available, to be applied with a minimally invasive method, which by keeping an infected tissue recess drained allows daily irrigation of the recess with crystalloid solutions, with disinfectant solutions or with antibiotics for the control and treatment of soft tissues infection by avoiding the stagnation of the exudate and reducing the bacterial load. Irrigation procedure can be easily done at home by a professional home caregiver or an educated family member. The closure of the ring avoids drainage displacement during dressing and irrigation maneuvers, while the small size of the caliber avoids obstructive mechanisms as can occur with finger-glove or with large Penrose-type drainages. It is a minimally invasive approach that allows to avoid more extensive, unnecessary and untimely demolishing surgical solutions that use larger incisions of tissue overlying the abscess. By avoiding more extensive tissue scarring, this conservative procedure improves the rehabilitation phase, reduces the risk of relapse on scar tissue and preserves the integrity of the skin surface involved by the underlying infectious state.

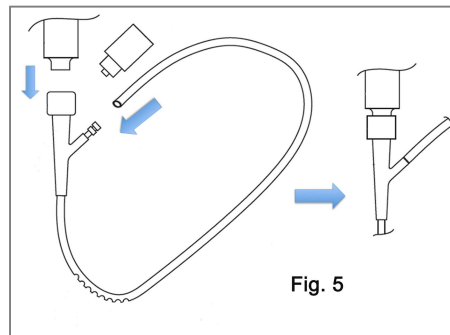


Fig. 5 Side view of a second embodiment of the medical device for minimally invasive surgical drainage.

Applications

In clinical practice, the use of this self-locking drainage mainly concerns the management of recesses in the context of sacral, ischial, trochanteric, calcaneal decubitus lesions, the phlegmons of both diabetic foot and Charcot foot, infections of surgical wounds, serous collections and post-traumatic soft tissue hematomas, erysipelas from an infected skin lesion and in any case of an infected or post-traumatic cavity requiring drainage.

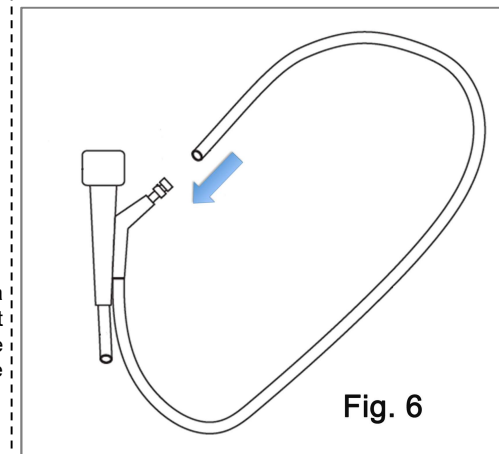


Fig. 6 Side view of a third embodiment of the medical device for minimally invasive surgical drainage.

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