

Medical Devices

Plantar pressure device

A research group of the Andalusian Public Health System has developed an innovative medical device featuring a transparent plantar pressure plate that enables a surgeon to check in real-time the distribution of pressure across the sole of the foot.



Description

So-called metatarsalgias are caused by excessive pressure of the bony components of the foot on the soft tissues, especially the heads of the metatarsals on the foot plant and other integument. The purpose of forefoot surgery is to solve this problem by restoring the structures of the foot so that, from a biomechanical perspective, isolated metatarsals do not come under excessive pressure.

During surgery, the loaded height of the metatarsal heads is difficult to restore because, given the patient's position, it is not possible to replicate the pressures that apply to the metatarsals and rearfoot. Forefoot surgery for treating metatarsalgias is one of the most common interventions in orthopaedics. An estimated 15% of surgical cases are deemed to have poor outcomes, generally as a result of defects in surgical technique. Clinically, the result is that these patients will be left in the same or a worse state than before surgery.

The devices that are currently available do not enable pressure to be applied to the foot during surgery. Also, the positioning of the knee could be improved significantly, to enable extension during surgery. In addition, devices are difficult to sterilise to the standards required for use in an operating theatre due to the presence of cables and sensors. There is also a lack of scope for rearfoot varus-valgus alterations, which are often necessary in ankle and rearfoot fusions.

There is, therefore, an unmet need for a plantar pressure device with a novel configuration that resolves the said problems.

1. A novel configuration that enables real-time intraoperative monitoring of the pressure distribution on the foot.
2. It enables the surgeon to have access to the rearfoot area of the patient during surgery, with the device in situ.
3. The device enables the support plate to be altered relative to a perpendicular of the patient's leg.
4. Device components are dismountable to aid sterilisation.



Intellectual Property

This technology is protected by patent.



Aims

We are looking for a partner interested in a license and/or a collaboration agreement to further develop and exploit this innovative technology.



Classification

Area: Medical Device



Advantages