

# Como Realizar Vídeos em Cirurgia Dermatológica: Uma Técnica de Gravação Simples e Barata

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**RESUMO** – A gravação vídeo de cirurgias ou de outros procedimentos dermatológicos é uma valiosa ferramenta de ensino e de autocritica. Alguns sistemas de gravação têm sido descritos na literatura, contudo estes habitualmente envolvem processos de montagem complexos e morosos que desincentivam à sua preparação, para além de dispendiosos em equipamento (500€ ou mais) ou pouco práticos pela logística que envolvem. Os autores descrevem uma técnica simples, de rápida preparação pré-operatória que faz recurso somente a equipamentos atualmente ubíquos na sociedade (*smartphones* com câmara) ou acessíveis em preço (<10€). Para a elaboração deste sistema são necessários um *smartphone* com câmara de vídeo, um suporte ajustável de telemóvel para bicicleta (STBicl) e, opcionalmente, uma *powerbank* (bateria portátil para carregamento de telemóveis ou outros equipamentos eletrónicos). Já com o doente em posição para a intervenção (exemplo: deitado na marquês cirúrgica), o cirurgião dermatológico deverá colocar num suporte de soro o STBicl, em zona que possibilite o ajuste vertical. Já com o telemóvel em modo de vídeo, devidamente ajustado no STBicl, o cirurgião deverá regular a altura do suporte de soro e distância ao campo cirúrgico de modo a possibilitar a melhor definição sobre o local a intervir. Uma *powerbank* pode ser fixa ao suporte de soro para estender a bateria do telemóvel em procedimentos mais prolongados. Os autores demonstram uma técnica simples e económica para gravação vídeo de procedimentos dermatológicos.

**PALAVRAS-CHAVE** – Dermatologia; Gravação em Vídeo; Procedimentos Cirúrgicos Dermatológicos.

## How to Perform Videos in Dermatologic Surgery? A Simple and Inexpensive Recording Technique

**ABSTRACT** – Video recording surgical procedures is one of the most valuable tools for teaching and self-assessment in Dermatologic Surgery. A number of recording systems have been described in the literature. Nevertheless, they're usually expensive (~500€) and time-consuming to prepare, the latter being a major disadvantage for a busy surgical speciality such as Dermatology. The authors describe a simple and inexpensive technique for surgical video capture in Dermatologic Surgery. For this setup, the surgeon needs only a smartphone with a camera (which is nowadays ubiquitous), a bike phone holder (10€ to 30€), an adjustable intravenous pole and, optionally, a powerbank. With the patient in position for the surgical intervention (seated or lying on his back on the surgical table, depending on the procedure), the bike phone holder should be attached to the vertically adjustable intravenous pole. The smartphone must be then set on the bike phone holder, with its "recording mode" already started. Optionally, a powerbank can also be attached to the intravenous pole to provide extra charge for longer procedures. The height of the intravenous pole, as well as its position and distance to the surgical table, should be adjusted accordingly before the intervention, in order to provide the best recording definition. The authors describe a simple, easy to setup, inexpensive system to record videos in Dermatologic Surgery.

**KEYWORDS** – Dermatologic Surgical Procedures; Dermatology; Video Recording.

Skin cancer, particularly non-melanoma skin cancer, is the most common malignancy in Caucasians and its incidence is continuously rising. As surgery is the treatment mainstay for most, dermatologists with interest in cutaneous surgery, capable of offering proper management for both simple and complex surgical cases, are needed. In the modern digital era, video recording surgeries can be a valuable tool to train residents and specialists in Dermatologic Surgery. Furthermore, these recordings have the additional benefit of creating educational material to present in scientific meetings as well

for the surgeon own's self-assessment. Historically, surgeries were recorded by a dedicated camera operator.<sup>1</sup> This traditional approach often leads to noticeable jitter due to an inevitable hand tremor, especially on longer procedures. Moreover, it is not cost-efficient to have medical staff dedicated to this task. Other recording techniques have been discussed, such as using a GoPro® mounted on the surgeon's head<sup>2</sup> or a "birds-eye" camera stabilized in the surgical light holder by the equilibrium of a counterweight.<sup>3</sup> Nevertheless, such apparently elegant techniques are convoluted and undermined by several

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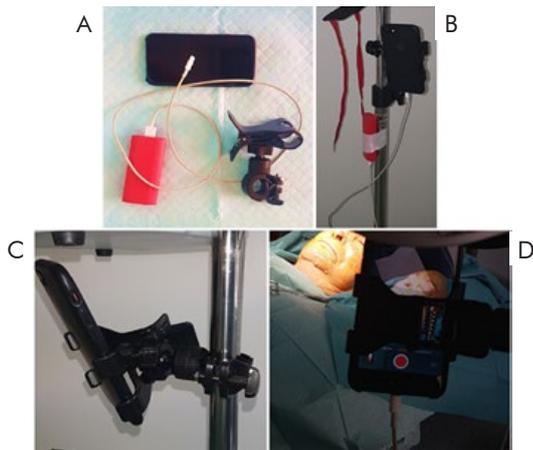
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pitfalls. First, they are expensive (not everyone has a GoPro®, which can cost up to 600€); secondly, they can be challenging and time-consuming to prepare (which immediately dampens the enthusiasm of the busy surgeon to record his procedures) and, thirdly, they often require technical support not widely available (such as WiFi in the operating room (OR)).<sup>2</sup> Notwithstanding their value, recording surgeries should not be a time-consuming burden. The authors herein describe their simple, day-to-day recording technique.

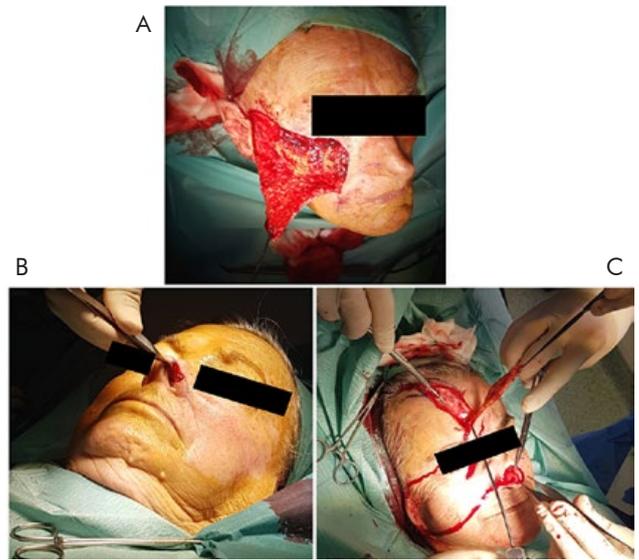
In our setup (Fig. 1A), the surgeon needs only a smartphone with a camera, nowadays ubiquitous (unlike a GoPro®); a bike phone holder (BPH), which range from 10 to 30 euros; a vertically adjustable intravenous (IV) pole; and, optionally, a powerbank (portable charger for electronic devices). There should be enough space in the phone memory, as longer procedures might produce videos of considerable size. Written consent of all patients should be obtained.

Firstly, the BPH should be attached to the adjustable IV pole. The smartphone, on recording mode, should then be placed on the BPH (Figs. 1B and 1C). For longer procedures, a powerbank can also be attached to the IV pole with adhesive tape to provide extra charge (Fig. 1B). When the patient is prepared for the surgical intervention (usually lying on the surgical table), the IV pole height, position and distance to the surgical table may be adjusted for an optimal recording view (Fig. 1D). Luminosity and the surgeon's probable position should also be considered. Finally, a 10-second sample is recorded to test image quality and provide final adjustments.

A good recording "system" in dermatologic surgery should be easy and fast to setup, inexpensive, largely third-party independent, provide a good overview of most surgical sites while maintaining a high-quality smooth image (Fig. 2A-C) without disrupting the OR schedule. Our presented technique, albeit overly simple, meets all these principles. Intraoperative camera adjustments may be needed, but they should be minimal if a proper recording position is chosen prior to the surgery. Some anatomical regions are difficult to be recorded by our approach (ex: concha of external ear) and are better addressed by other setups.



**Figure 1 - (A-D)** A smartphone with camera, a bike phone holder and a powerbank are the only tools needed to create this simple and inexpensive recording setup.



**Figure 2 - (A-C)** Screen capture of several videos obtained by this recording technique.

The authors present their simple and preferred technique to record surgical interventions. Recordings in dermatologic surgery are encouraged for self-assessment, to present new and updated surgical techniques and to train new generations of dermatological surgeons.

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