

Ideas and Innovations

Use of selfie sticks and iPhones to record operative photos and videos in plastic surgery

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ABSTRACT

Use of smartphone has become ubiquitous. With smartphone cameras becoming powerful, they are replacing digital cameras and digital SLRs as primary instruments to take photos and record videos. It is natural even for plastic surgeons that smartphones are handy to take still photographs and even record high-definition or 4K videos. Another invention which has become popular with smartphone photography is a selfie stick. We explain the possibility and methodology of using an iPhone and selfie stick to take operative photographs and high-quality videos.

KEY WORDS

4K recording; high-definition recording; iPhone; operative photographs; selfie stick

INTRODUCTION

It is possible to record professional quality still photographs and videos using a suitable smart phone.^[1] This is because most smartphones these days come with a high megapixel still camera and high-definition (HD), 4K video recording. There are two main drawbacks in using the smartphone for photo-videography.

1. Lack of optical zoom
2. Difficult to stabilise the image.

Optical zoom is necessary to take good-quality close-up pictures. The digital zoom in smartphones when used causes pixelation and reduction of picture quality. Another way of taking close-ups is to take the camera

closer to the object. This can be achieved by using a selfie stick in a way that it does not come in the surgeon's way thereby hindering the surgery.

Some smartphones come with optical image stabiliser. The inbuilt image stabiliser can stabilise the image to a certain extent, but there can be a lot of vibrations that occur while recording videos which the image stabilisers may not be able to stabilise. Fixing the phone onto a tripod solves the problem of vibration. Tripod mounting brings its own problems. First, it is rigid and cannot be taken closer to the operative field. Second, the angles of recording cannot be changed easily. Both these problems can be solved by mounting the smartphone onto a selfie

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stick. By using the selfie stick monopod in a certain way, it can be converted to a modified but mobile tripod, hence reduces the shaking and blurring of pictures.

REQUIREMENTS

- An iPhone having 8 or more megapixel camera and having the capability to record videos in HD (1080 pixels in vertical resolution) or 4K video recording (4000 pixels in horizontal resolution)
- A selfie stick with Bluetooth button
- A hip bag
- For video recordings, a phone should have a large internal or expandable memory. This is because 1 min of 4K recording takes up 375 megabytes (MB) of space, while HD recording requires roughly 60 MB of space every minute
- A MacBook or MacBook Pro [Figure 1]
- A lightning cable or USB cable of 10–15 m.

The advantages of 4K recording are:

- It can be downscaled to supersharp 1080 video
- It lets one to zoom and crop without loss of quality (till it reaches 1080 pixels)
- High-quality stills can be obtained from any video framework.

PROCEDURE

The iPhone is set on primary camera (rear facing) and mounted on the selfie stick. The angle of the mount to stick is adjusted to 100°–120°. For mobile recording, the other end of the selfie stick is placed into the hip bag which is suspended across the shoulder; two hands of the recording person are used to stabilise the monopod and manoeuvre the phone. The three points, i.e., hip bag and two hands act as three-point stabilisation system just like a tripod but with more manoeuvrability [Figure 2a and b]. Using the Bluetooth button on the selfie stick or screen access on the iPhone, the recording can be started or stopped. The focus and brightness can also be adjusted from the screen. Using the two hands on the stem of the stick and the recording person himself/herself moving around the operating table, the phone can be manoeuvred strategically to get the best angle and close-ups without disturbing the surgeon. For a static recording, the selfie stick is mounted onto a stainless steel stand [Figure 3].

Since the screen might not be facing the recording person, overhead operative light might make it difficult



Figure 1: Mac Book Pro, iPhone, hip bag, selfie stick, Lightning cable, USB cable



Figure 2: (a) Three-point stabilisation system, (b) live recording using iPhone and selfie stick

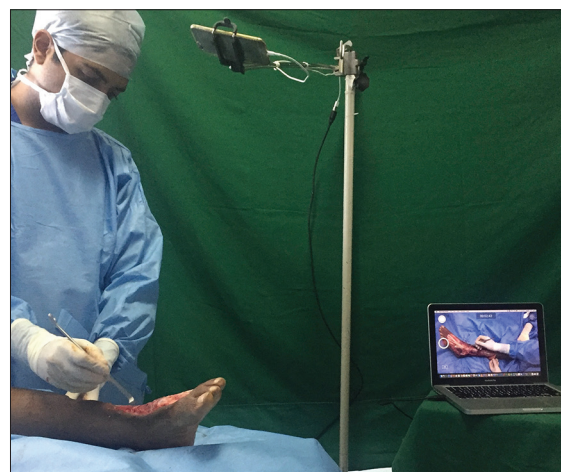


Figure 3: Selfie stick is mounted onto a stainless steel stand

for one to see what is being captured. This can be overcome by:

- Standing on a slightly elevated platform like a footstep
- Keeping the screen settings on auto-brightness.

To adjust the brightness: Just tapping on the screen where the brightness is proper will auto-adjust the whole frame. The brightness can be further adjusted by moving a finger up and down on the screen [Figure 4].



Figure 4: Screenshot showing camera interface for brightness adjustment

The iPhone can be connected to a laptop (a Mac with Yosemite) through a USB cable/Lightning cable, and the recordings can be viewed live on the laptop screen.

HOW TO VIEW AND RECORD IPHONE'S LIVE VIDEO RECORDING ON MAC

- Connect the iPhone device to the laptop-Mac using the USB cable/Lightning cable
- Open the applications folder
- Double-click on QuickTime Player
- Click on the File menu
- Select New Movie Recording
- Click on the downward facing arrow to the right of the record button
- Under Camera, select iPhone
- Now, we can see the live recording on the Mac screen
- If one wishes to record audio from the device, select its name in the Audio source list
- Click on the red record button to begin recording video from the iPhone
- When recording is done, click on the red button again to stop recording
- Now, the recording will be saved to the predestined folder.

The photos and videos thus captured can also be transferred to the laptop using the USB/Lightning cable so that there will be no data storage problems.

HOW TO ZOOM INTO THE 4K RECORDING AND HOW TO TAKE STILL FROM THE VIDEO

Once the videos are recorded in 4K, the movies can be played on iMovies on Mac. In iMovies, we can zoom the

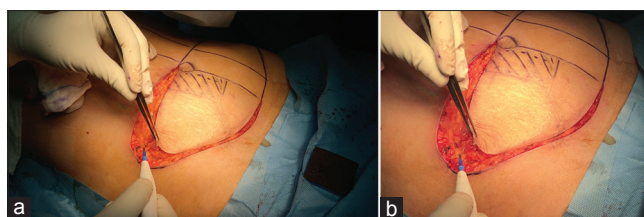


Figure 5: (a) Screenshot from 4K recording, (b) same screenshot zoomed till 1080 pixels without loss of quality

video up to 1080 pixels without loss of quality, pause the video and take the desired stills. The benefit with taking stills from iMovies is that the stills can be taken at 4K quality.

Moreover, since stills are at the 4K quality, we can zoom into the desired field on the still and crop it without loss of pixels. One can zoom till 1080 HD without loss of pixels; this helps to focus on the operating field without blurring. Hence, even though the video is recorded from a distance using selfie stick, by zooming, we can get the desired picture frames [Figure 5a and b].

CONCLUSION

Perhaps no other field of medicine uses photography as much as plastic surgery. Most plastic surgeons are good photographers and innovators. Operative videos are a part of record-keeping, teaching and knowledge sharing instruments among plastic fraternity.^[2] This small innovation helps in a better way of recording high-quality stills and videos using a smartphone and a selfie stick which everyone seems to have these days.

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Conflicts of interest

There are no conflicts of interest.

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