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Innovative Application of Selfie Sticks with Tripod in Plastic Surgery

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Abstract

Aim: To assess the efficacy of use of Selfie stick with tripod in intraoperative photography and videography.

Methods: The study was done by the Department of Plastic surgery in JIPMER, Pondicherry, India from May 2018 to July 2019. Surgeons from the department and plastic surgeons around the area were included into the study after due consent. The selfie stick with tripod for 15 different users for a period of 15 days each. The feedback was collected in a questionnaire which included video quality, audio quality and would they recommend it to their peers.

Results: All 15 users found the audio and video quality satisfactory. All 15 users would recommend the use to theor collegues.

Conclusion: Taking intraoperative pictures in a sterile medium is a challenge and selfie stick with tripod offers a good alternative to capture good close up images. The tripod modifications make it useful for video conferencing, demonstration and video consultation too.

Keywords: Selfie stick; Intraoperative photography; Tripod.

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Introduction

Photography is an essential part of medicine now and an integral part of the plastic surgeons armamentarium as a part of record keeping, teaching and for medicolegal purposes[1]. The Advent of digital photography has made this cost effective, easier and universal. Smart phone cameras have revolutionized photography and very high quality pictures can be captured with substatial ease.

Smart phones have practically replaced conventional camera for digital imaging and record keeping.

Medical photographers are professionals who photograph patients in clinics and operative rooms and are aware of the sterile precautions. Unfortunately, medical photographers are not available in all medical facilities.

Therefore capturing an intra operative image can be a challenge with no one but untrained staff available.

The surgeon may put on extra sterile gloves and take the picture himself but its not always possible when repeated pictures are needed or when his both hands are busy.

When a staff takes a picture, the sterility of the procedure is endangered by his approach to the surgical site and tremor in the outstretched hand causes poor quality photographs.

We offer a cheap and easy solution to the problem in the form of a selfie stick with tripod.

Selfie stick is a monopod what positions the smart phone beyond the range of the normal human arm[2]. The modification is that the monopod can be easily converted to a tripod which gives it an added advantage and use.

Tripod modification of the selfie stick have been used for video recording of the surgery and for video conferencing and intra operative consultation in our study with great results.

Materials and Methods

The study was done by the Department of Plastic surgery in JIPMER, Pondicherry, India from May 2018 to July 2019.

The device was used by 15 different subjects which included residents and attending surgeons. It was used for a period of 15 days each.

Following the 15 days, the data was collected in a feedback profoma:

- A selfie stick with a detachable tripod stand with a slot for the smart phone [android/ iOS] (Fig. 1, Fig. 2).

Fig. 1: Selfie stick with Remote

- Bluetooth remote (Fig. 3)

Fig. 2: Selfie stick with tripod Stand

- Android or IOS based smart phone with Bluetooth connectivity and atleast 3G internet connectivity.

A commercially available selfie stick with tripod and Bluetooth remote was obtained. We connected this with an android based smart phone [version 9].

This was used for intraoperative photography and intra operative video conferencing (Figs 4-6).

Feedback was obtained from users based on a questionnaire.

Fig. 3: Selfie Stick Remote

Fig. 4: Intraoperative video conferencing using selfie stick with tripod

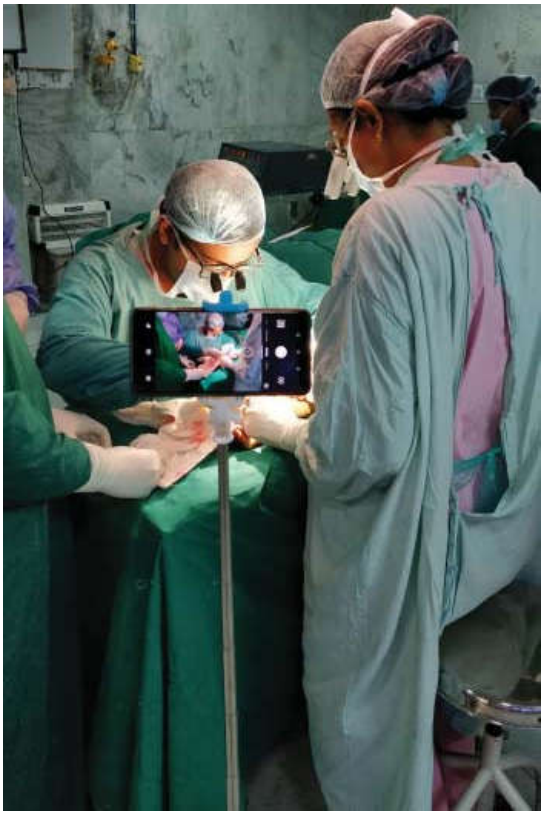

Fig. 5: Surgery Demonstration using Selfie stick with tripod

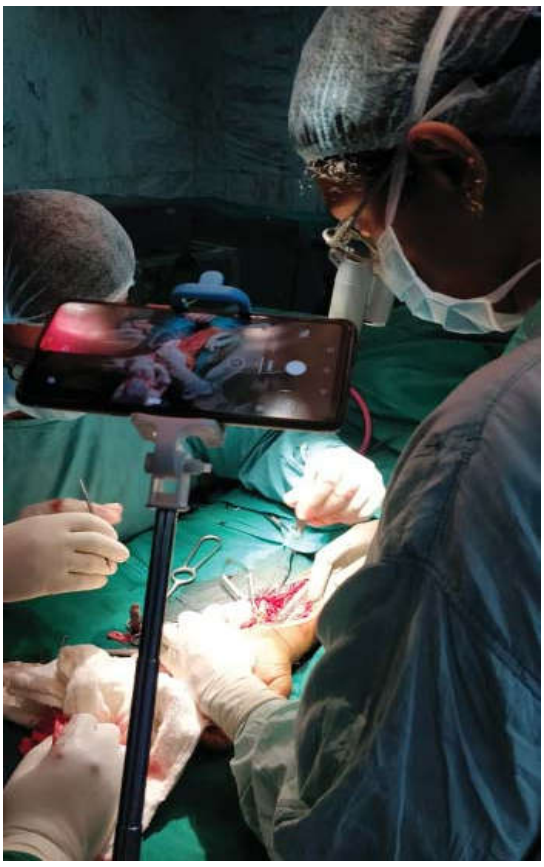

Fig. 6: Intraoperative Photography using selfie stick

Results

The device was used by 15 different users for intraoperative photography and intra operative video conferencing for a period of 15 days. The selfie stick and camera was used for various indications like intraoperative photography, video conferencing, intraoperative consultation.

On an average it was used to 8.4 (Range 4 to 14) surgeries per user.

All the users found it as useful tool, and would recommend it to their peers.

All of them found the audiovisual quality satisfactory and easy to use.

Discussion

Digital photography is an extensively used tool for documentation of the clinical pictures in medicine.

Various methods have been tried to take pictures easily in a sterile medium. Gas sterlized underwater camera cases have been used by various surgeon with great success.[3,4,5] But due to the great improvements in smartphone camera quality, smartphone cameras are more commonly used for intraoperative photography than digital cameras. Waterproof covers for various smartphones that can be sterlized are difficult to find and expensive.

Selfie stick is a reasonable solution. It is cheap, easily available and can be universally used for all smartphones. It comes with a remote control to take pictures or video.

The smartphone can be connected to the device vie bluetooth/cable and the stick can be adjusted to the desired length. The staff can thus hold the stick with both hands to lessen the tremor and take great close up pictures.

Another use of the tripod modification is that it can be used for operative workshops and demonstrations. The usual operative workshops require a formal setup and most of the videoconferencing equipment are expensive. This innovative cost effective use of selfie stick with tripod may help, especially in small areas where formal setup may not be possible and also it caters to a large audience if need be.

In Summary This innovative cost effective selfie stick with tripod is highly useful tool for intraoperative photography.

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