Use of *Google Glass* in cheiloplasty: the surgeon's perspective

Uso do google glass na queiloplastia: a perspectiva do cirurgião

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ABSTRACT

Wearable technology has come to change the way people see and experience the world. Google Glass is one of these technologies created by Google Inc., Mountain View, California. This device has many uses, including in the medical field. One of these uses is the possibility of providing viewers with the surgeon's view during surgery. Surgeries with a small operative field, like cleft lip surgery, or cheiloplasty, should benefit from Google Glass. In our institution, we recorded the first cleft lip surgery using Google Glass to give our impression of the Glass.

Keywords: Education, Medical; Innovation; Technology

RESUMO

Tecnologia "de vestir" chegou para mudar a forma como as pessoas veem e experimentam o mundo. Google glass é uma dessas tecnologias e foi criada pelo Google Inc. California Mountain View. Este dispositivo tem muitas possibilidades de uso, inclusive na área médica. Dentre estes usos, está a viabilidade de fornecer aos espectadores a visão do cirurgião durante a cirurgia. Cirurgias com pequeno campo operatório, como queiloplastia, devem beneficiar-se com o uso do google glass. Em nossa instituição, gravamos a primeira queiloplastia com google glass com a intenção de dar a nossa impressão dos óculos da Google Inc.

Palavras-chave: *Educação Médica; Inovação; Tecnologia*

INTRODUCTION

Technology is increasingly present in our lives, and in the medical field, it is no different. At every moment, we face new devices in the clinical routine and in the surgical room that change the way we interact with the world.

Better known as "wearable" technology, Google glass is one of these technologies, and is already used in the medical field.[1-4] Created by Google Inc. California Mountain View, this device provides the possibility of seeing the surgeon during the surgery in real-time or recording the procedure for later review. Davis and Rosenfield made the first description of this technology's use in a surgical procedure in 2013,[5,6] and their team demonstrates the difficulties and perspectives of this technology.

Surgeries with a small surgical field, such as cheiloplasty, benefit from the use of Google glass. Also, in teaching units, the difficulty in monitoring the surgery steps by residents and interns present in the room and outside the surgical field, due to the reduced visual field and the need to stop the surgery at each

Case report

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step, dramatically increases the time of the procedure.

Our institution recorded the first cleft lip surgery with Google glass to give our impression of this technology in reduced visual field surgeries.

OBJECTIVE

This study aims to assess the use of a new technology in cheiloplasty, with a small surgical field, and use the technology for the improvement and learning of the team.

METHODS

We chose a patient with an incomplete pre-incisive foramen fissure after obtaining informed consent with a recording authorization term. The absence of fast internet for streaming video limited the use of glasses only for recording. The patient was placed in Rose position and a Millard cheiloplasty was performed. After the surgery, we showed the video to residents.

RESULTS

The image was clear and made it possible to see the procedure and structures without any doubt. At first, its use may be strange for the surgeon, but over time it becomes habitual.

The procedure was conducted with the resident team for learning. The presence of the team during the surgery was essential. However, after the procedure with the recorded video, the surgical steps could be discussed and demonstrated with a detailed view, which generated fixation and understanding of the technique.

Figure 1: Surgeon using Google glass

Figure 2: During surgery

Figure 3: First person view through Google glass

DISCUSSION

There are many benefits to using "wearable" technology like Google glass.[7] The functionality that allows communication between doctors and the exchange of experiences or consultation during the surgical procedure is beneficial. However, the absence of fast internet is a limiting factor in countries like Brazil. Communication problems are a prevalent cause of errors in surgery, and this technology can reduce these errors.

The primary applicability for this technology that we see at the moment is in the surgical teaching, as in cheiloplasty, which has a limited surgical field, and the surgeon can share in

real-time the procedure steps. As far as we know, this was the first cheiloplasty performed with Google glass, and we were able to take the opportunity to review the surgical field with the entire team.

However, ethical issues and the lack of fast internet streaming video can be some limitations. Other features, such as remote supervision and even consultation for minor procedures, could also be used.

CONCLUSION

The use of Google glass in surgeries with a reduced visual field is very feasible, and residents can enjoy and share first-person learning from the attending physician. However, the full potential of this technology has yet to be discovered. The possibility of performing surgical procedures and teaching or discussing from a first-person view is excellent for surgeries with a small field or procedures performed in educational institutions. In the current moment of social isolation that we live in, it is an option to continue teaching. ●

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