Live surgical demonstrations with the use of Streye Enterprise

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Purpose
Demonstration of surgical procedures is one of the essential learning modes in surgical education and still remains a cornerstone in surgical training. Therefore, attending surgery in the operating room is an integrated part of the official minor program for the 3rd year medical students with interest in surgical field. However, the amount of students allowed to enter the operating room is limited due safety considerations.

To make sure students get optimal surgical education, several surgeries have been broadcasted during the minor program in Plastic & Reconstructive and Oral & Maxillofacial Surgery.

Device
Two pairs of smart glasses were worn by both the surgeon and the resident.

Software
A software application, Streye Enterprise, was used to establish the two-way audio and video communication between the Glass (surgeon) and the observer (students). A proper Wi-Fi connection in the operating room was required for maintaining the broadcast. The access to live surgery was possible from an observer web application using the Windows operating system on our computer. This application also allowed sharing of documents such as pictures and/or messages between the surgeon and the students.

Intraoperative education
Several surgeries have been broadcasted to a small group of medical students. The mean duration of broadcasted surgeries was 60 minutes without leaving the Glass battery depleted. A proper Wi-Fi connection decreased the broadcast delay down to 1-2 seconds. The two-way audio and video communication made following possible:

- Students were able to see the surgery from the different perspectives (Figure 1);
- Surgeon was able to see the students in the classroom on his Google Glass screen;
- Surgeon and students were able to interact with each other by asking and answering the questions.

The bidirectional communication is an important aspect within the live surgical demonstrations which made the transfer of anatomical and procedural knowledge to our medical students possible.